2024 Annual Water Quality Report

Black Hawk County Landfill
MSWLF Black Hawk County
Permit #7-SDP-1-75P

Black Hawk County Solid Waste Management Commission
Waterloo, Iowa

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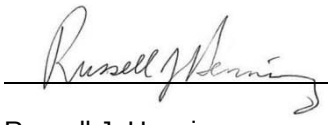
Certification

Prepared by:  Date: January 31, 2025

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Certification page (PE or ground water scientist signature) **113.10(1)"d"**

For the purposes of this rule, a "qualified groundwater scientist" means a scientist or an engineer who has received a baccalaureate or postgraduate degree in the natural sciences or engineering and has sufficient training and experience in groundwater hydrology and related fields demonstrated by state registration, professional certifications, or completion of accredited university programs that enable that individual to make sound professional judgments regarding groundwater monitoring, contaminant fate and transport, and corrective action.

Executive Summary

ES.1 Period of Report Coverage

This Annual Water Quality Report (AWQR) includes a summary of all groundwater, leachate, and landfill gas sampling completed in calendar year 2024.

ES.2 Report Priority

AECOM updated the HMSP at the end of 2024 and submitted in January 2025 that included:

- Current operating waste disposal units Cell W-3, and Asbestos Cell No. 2.
- Monitoring plan beginning in 2025.
- HMSP text, tables, figures, and appendices were updated to reflect current operating conditions.
- Appendix II - Currently, monitoring wells OW-113B, OW-205B, OW-212B, OW-221B, OW-222B, OW-223B, OW-401B, OW-402B and MW-409B have been sampled for Appendix II. Monitoring wells OW-401B, and OW-402B have been sampled each year, for the past five years for Appendix II beginning in Fall 2018. All past 1-of-2 Appendix II only detected parameters above reporting limit (RL) have been added to the individual wells' semi-annual monitoring parameter list and are sampled at each semi-annual event.
  - BHCL will sample complete list of Appendix II parameters once every five years for Appendix II wells.

ES.3 Site Status and Applicable Rules

The closed Landfill cells are IDNR regulated Areas A and C, Cells E and X, W-1, W-2, and Asbestos Cell No. 1; and the EPA RCRA regulated Co-Disposal Area and the Neutral Trench. The active IDNR regulated Municipal Solid Waste (MSW) Landfill Cell is W-3. The Commission has a separate active Asbestos Cell No. 2. The Landfill accepted MSW and Asbestos Waste in 2024 from Black Hawk, Bremer, Grundy, and Fayette Counties.

The monitoring of the site and analysis of sample data was conducted in accordance with Chapter 113 of the Iowa Administrative Code (IAC).

ES.4 Comments

An assessment of corrective measures (ACM) was implemented in 2016 because of detected organic parameter concentrations in wells OW-401B and OW-402B.

Wells OW-105B, OW-114B, OW-205B, OW-220B, OW-224B, OW-225B, OW-226B, OW-227B, OW-401B, OW-402B, OW-410B, OW-411B, OW-412B, OW-413B, OW-414B, P-402A, and P-402C are part of an ongoing assessment of corrective measures (ACM) and are discussed in a separate 2024 ACM report submitted in January 2025.

The stormwater monitoring and sampling as part of the Black Hawk Co. Landfill Stormwater Pollution Prevention Plan (SWPPP) is also being submitted IDNR NPDES in a separate report in January 2025.

A Post Closure Termination Plan for Area E and Cell X has been submitted to IDNR, see Document ID 111940.

1. Background Information

The 2024 groundwater sampling was completed at the Black Hawk County Sanitary Landfill (Landfill) in accordance with the site Hydrologic Monitoring System Plan (HMSP) and Iowa Department of Natural Resources (IDNR) permit requirements. This report summarizes the effect the Landfill is having on groundwater quality and groundwater flow. The Black Hawk County Landfill is located in rural Black Hawk County adjacent to the southern boundary of the City of Waterloo, Iowa, in Section 23, T. 88 N., R. 13 W. The street address is 1509 East Washburn Road, Waterloo, IA 50701. At the site, Area A, Area C, Area E, Cell X, Cell W-1, Cell W-2, Cell W-3, Asbestos Cell No. 1, and Asbestos Cell No. 2 are the waste disposal units regulated by the Iowa Department of Natural Resources (IDNR). The Neutral Trench and Co-Disposal Area are waste disposal units regulated by the United States Environmental Protection Agency (EPA). MSW Cell W-3, and Asbestos Cell No. 2 are currently the operating waste disposal units; all the other units are closed. The waste disposal areas are shown on Figure 1.

Information regarding the monitoring points is included in Table 1. Recent sampling events and constituents are presented in Table 2. Analysis of sample data was conducted in accordance with Chapter 113 of the Iowa Administrative Code (IAC). Input and output files used in the statistical analyses are included in Appendix A.

The monitoring well maintenance and performance evaluation schedule is provided in Table 3.

Groundwater level only monitoring wells are shown on Figure 2. Groundwater elevation data for 2024 is presented in Table 4. Groundwater elevation contour maps, based on data obtained in March 2024, are presented as Figures 3, 4 and 5.

Field sampling data forms and laboratory analytical results from the 2024 sampling events are presented in Appendices B and C. Appendix B includes tables summarizing historical Appendix I and Appendix II analytical results from each sampling point. The 2024 Leachate Control System Performance Evaluation and 2024 Methane Monitoring Report are included as Appendices D and E of this report.

1.1 Black Hawk County Landfill History and Construction

The Black Hawk County Landfill was initially developed and operated by Landfill Service Corporation in 1975. In 1984, the landfill was purchased by the Black Hawk County Solid Waste Management Commission. The landfill continued to be operated under contract by Landfill Service Corporation until 1987 when the operating contract was awarded to Denver Construction, Inc., who transferred the contract to Waste Tech, Inc., a division of Denver Construction, Inc.

At the Black Hawk County Landfill, the different cells and areas were constructed over time to different regulations and, hence, there are differences in the underdrain, liner, leachate collection, and landfill gas systems. Area A, Area C, Area E, Cell X, Cell W-1, Cell W-2, Cell W-3, Asbestos Cell No 1, and Asbestos Cell No. 2 (Figure 1) are regulated by IDNR.

Waste was placed in Area A from 1975 to 1980, and Area A is now in post-closure. Area A was constructed without an underdrain, liner, or leachate collection system.

Waste was placed in Area C from 1986 to 1991, and Area C is also in post-closure. Area C was constructed without an underdrain, liner, or leachate collection system.

Waste was placed in Area E from 1991 to 1999, and Area E is in post-closure. Area E was constructed with a groundwater underdrain system, clay liner, 10- to 12-foot-deep perimeter groundwater drainage trench, and leachate collection system.

Construction of Cell X began in 1999, and waste was placed until 2008. Cell X is in post-closure. It was constructed with a groundwater underdrain system, clay liner, and leachate collection system.

Cell W-1 was opened in 2007. Cell W-1, Phases I, II, III and IV are closed. Cell W-1is constructed with a groundwater underdrain system, clay liner, and leachate collection system.

Cell W-2 construction began in 2013, and it is built with an underdrain system, composite liner, and leachate collection system. This cell is now a closed fill area with a temporary cover.

Cell W-3 construction began in 2020 with the advanced excavation of W-3, Phase I. This cell completed construction in 2021 and was built with an underdrain system, composite liner, and leachate collection system. W-3, Phase II was constructed in 2023. This area includes the remaining cell floor and an abutment liner on the north slope of W-1 was installed in 2023. This expansion was approved by IDNR 01/16/2024. Filling is expected to begin at the end of January. Cell W-3 is the active area.

Asbestos Cell No. 1 was developed from 1992 to 2008 and is closed. It was constructed with a clay liner but without an underdrain or leachate collection system.

Asbestos Cell No. 2 was opened in 2008 and is currently active. It was constructed above the water table and consequently without an underdrain system. It has a clay liner and leachate collection system.

Areas A and C have passive landfill gas venting systems in place. An active landfill gas system (GCCS) was installed in the Summer of 2023 in Area E, Cell X, Cell W-1, Cell W-2 and Cell W-3. The GCCS includes deep gas extraction wells in E, X, W-1 and W-2, horizontal gas extraction wells in W-3, flare and a gas to energy plant. The Landfill gas venting is not required for Asbestos Cell No. 1 and Asbestos Cell No. 2.

1.2 Black Hawk County Geology and Hydrogeology

The subsurface geologic formations encountered during installation of site wells at the Black Hawk County Landfill are included on the boring logs and monitoring well/piezometer documentation forms (Iowa DNR Form 542-1277) presented in Appendix A of the HMSP. Boring and well locations are shown on HMSP Figure 2-2. The site geology and hydrogeology of the Black Hawk County Landfill has been comprehensively investigated in several studies, including the Black Hawk County Landfill Phase I Site Investigation and Monitoring Well Installation Program (SIMWIP) (Brice, Petrides-Donohue, 1987), and the Hydrologic Investigation Report for Landfill Expansion, Black Hawk County Landfill (Rust Environment & Infrastructure, 1997), and will be summarized here.

The Black Hawk County Landfill is situated in the Iowan Surface region of northeastern Iowa. The Iowan Surface (Prior, 1991) was glaciated several times during Pre-Illinoian-age glacial episodes leaving behind a sequence of glacial deposits that overlies bedrock. During the last glacial episode, the Wisconsin Episode, the Iowan Surface was subject to extensive erosion that has left a generally low-relief landscape with long, subtly stepped slopes.

In uplands, a relatively thin veneer of Wisconsin Episode loess and hillslope sediment mantles the Pre-Illinoian-age glacial sequence. In drainageways, Wisconsin episode and younger Holocene episode alluvium mantle the Pre-Illinoian-age glacial sequence. In borings completed at the Black Hawk County Landfill, the loess, hillslope, and alluvial sediments range from 0 to as much as 24 feet thick for the thickest alluvial deposits.

These surficial deposits overlie a thick sequence of Pre-Illinoian-age glacial deposits composed predominantly of fine-grained glacial diamictons (“tills”). At the Black Hawk County Landfill, the Pre-Illinoian-age glacial sequence includes deposits from three separate glacial advances. Deposits from the youngest Pre-Illinoian-age glacial advance are included in the Wolf Creek Formation and are designated as QWT at the site. The underlying deposits are from two older Pre-Illinoian-age glacial advances that are included in the Alburnett Formation and are designated QAT and the underlying QBT at the site.

The Wolf Creek Formation, QWT, occurs in the higher elevation summit areas at the landfill. Downslope, the Wolf Creek deposits are thin or are absent because of erosion during development of the Iowan Surface. At lower elevations at the site, the youngest Alburnett Formation deposits, QAT, locally form the surficial Pre-Illinoian-age glacial deposits because the Wolf Creek Formation deposits have been eroded away. The oldest Alburnett Formation deposits, QBT, occur only in the subsurface beneath QAT deposits.

The Pre-Illinoian-age glacial diamictons, QWT, QAT, and QBT, are all generally similar, fine-grained, low hydraulic conductivity deposits. Boundaries between the units at the Black Hawk County Landfill are marked by a variety of features, including unconformities, weathering zone changes, and discontinuous meltwater deposits. Discontinuous lenses of meltwater deposits also occur infrequently within the diamictons of the three separate glacial advances. However, the limited occurrence and the isolated, discontinuous distribution of these meltwater deposits within the thick, fine-grained glacial sequence result in groundwater flow being controlled by the flow in the surrounding fine-grained Pre-Illinoian-age glacial diamictons.

Groundwater travel times in the glacial diamictons at Black Hawk County Landfill are low, on the order of feet per year (ft/yr.). Hydrogeologic studies by Donohue (1989; 1990) calculated the groundwater flow velocity using hydraulic gradients from water elevations in site wells and hydraulic conductivity data from both laboratory tests of site samples and slug tests of site wells. The calculated groundwater flow velocity was approximately 0.7 ft/yr.

A study of hydrogen isotopes (tritium) in site groundwater confirmed the low flow velocity. In shallow wells, a tritium isotope study indicated a velocity of 1.12 ft/yr., and in intermediate depth wells, the groundwater velocity was 0.92 ft/yr., both very similar to the calculated groundwater velocity of 0.7 ft/yr.

The bedrock surface beneath the Quaternary sediments at the Black Hawk County Landfill has low relief and undulates over a range of about 35 feet in elevation, with a north-south trending high near the center of the site (HMSP Figure 2-3). Top of bedrock elevations range from about 825 to 855 feet above MSL. The uppermost bedrock is thick Devonian-age Cedar Valley Group dolomite that ranges from about 120 to 160 feet thick at the site and forms the uppermost aquifer beneath the landfill.

The Cedar Valley Group at the site is underlain by an aquitard composed of sandy conglomeratic shales of the Kenwood Member of the Devonian-age Wapsipinicon Group. The Kenwood Member is reported to be between 18 to 29 feet thick in borings drilled at the site.

Underlying the Kenwood Member is a thick sequence of Silurian-age dolomite that is on the order of 120 to 135 feet thick. Below the Silurian-age dolomite in the deepest boring at the site, B-200, Ordovician-age Maquoketa Formation was encountered at a depth of over 420 feet.

1.2.1 Water Table

The water table at the Black Hawk County Landfill is shallow and occurs in the Quaternary-age sediments. Figure 3 presents the water table in March 2024 which is representative of current water table conditions at the site. The water table attains its highest elevations both north and south of Cells W-1, W-2, and W-3 with a groundwater divide occurring through Cells W-1 and W-3, west of the area where Neutral Trench, Area A and the western part of Area C are located.

Natural water table elevations range from a high of approximately 951.94 feet MSL at MW-319B along the south-central portion of the site and to a low of 891.21 feet MSL at OW-118B east of the Co-Disposal Area. Water table elevations decline from the groundwater divide across the central part of the site in the vicinity of Cells W-1 and W-2 to approximately 918.39 feet at MW-304B in the northwestern corner of the site along a drainageway that is tributary to Sink Creek.

With the construction of groundwater underdrain systems beneath Area E, Cell X, and Cell W-1, Cell W-2, and Cell W-3, the water table is locally lowered artificially by groundwater drainage layers, and there are steep inward (downward) water table gradients to each of those groundwater underdrain systems. Figure 3 displays the effect of Cell W-1 groundwater drainage layer between Areas A and C and Cell W-1.

1.2.2 Intermediate Groundwater Elevations

A map showing March 2024 groundwater elevations for intermediate wells is presented as Figure 4. This map was not contoured because these wells are screened in discontinuous sand and silt lenses within the

glacial till, which occur at various depths beneath the water table. The intermediate depth wells were installed to monitor vertical hydraulic gradients and groundwater quality.

1.2.3 Piezometric Surface in the Uppermost Bedrock

The piezometric surface in the Cedar Valley Group at the site in March 2024 is shown on Figure 5 and is representative of the current piezometric surface in the uppermost bedrock. Flow in the Cedar Valley Group is east-northeast over most of the site. The Cedar Valley Group dolomite is an aquifer, and piezometric surface elevations vary over a narrow range from approximately 837.36 to 827.20 feet MSL. The distinct difference in elevations and flow directions between the water table in the Quaternary sediments (Figure 3), the intermediate wells (Figure 4) and the piezometric surface in the Cedar Valley Group dolomite (Figure 5) indicates that the vertical gradient through the Pre-Illinoian-age glacial diamicton is strongly downward toward the Cedar Valley Group. Vertical groundwater flow is approximately 1-ft/year downward from the water table to the bedrock aquifer.

1.3 Summary of Hydrologic Monitoring System Plan (HMSP)

Groundwater monitoring at the Black Hawk County Landfill includes monitoring of the water table in the surficial Quaternary-age sediments which acts as an aquitard and the uppermost aquifer in the Devonian-age Cedar Valley Group dolomite bedrock.

1.3.1 Water Table and Underdrain Monitoring Points

The wells comprising the water table and underdrain sampling program for the Black Hawk County Landfill are listed on Table 1 and include the following wells and underdrain sampling points shown on Figure 1. The upgradient and downgradient positions of the wells within the shallow (water table) groundwater flow system for each monitored solid waste unit is based on groundwater flow depicted on Figure 3. The following narrative describes monitoring wells related to each solid waste unit.

Site-wide Background Water Table Monitoring includes:

- Wells OW-101B, OW-114B, OW-213BR, OW-216BR, OW-217B, OW-218B, OW-219B, MW-304B, MW-308B, MW-319B, OW-403B, OW-405B, MW-701B, MW-702B, MW-703B, MW-704B, MW-705B, MW-706B, MW-707B, MW-708B, MW-709B and MW-710B serve as the shallow background monitoring points for Landfill Areas A, C and E, Cells X, W1, W2, W3 and W4; these wells are screened in Quaternary Loess and Pre-Illinoian glacial diamicton (till).

Area A — Water table monitoring includes:

- Downgradient water table monitoring is defined by several wells that differ in the hydrostratigraphy of their well screen intervals. These include water table wells OW-401B completed in Quaternary loess and the underlying Pre-Illinoian-age Wolf Creek Formation, OW-410B and OW-411B both completed in Quaternary loess and the underlying Wolf Creek and Alburnett Formation glacial deposits, and MW-501B, completed in Quaternary loess and the underlying Wolf Creek and Alburnett Formation glacial deposits.
- Water table measurement only wells (EPA Permit) include downgradient water table well OW-106B Pre-Illinoian-age Alburnett Formation glacial deposits, OW-117B Pre-Illinoian-age Alburnett Formation glacial deposits, OW-107BR completed in Pre-Illinoian-age Alburnett Formation glacial deposits, OW-116B Pre-Illinoian-age Alburnett Formation glacial deposits, and OW-108B completed in Pre-Illinoian-age Wolf Creek Formation glacial deposits.

Area C — Water table monitoring includes:

-
- Downgradient water table monitoring wells include several wells that differ in the hydrostratigraphy of their well screen intervals. The water table wells include OW-105B completed in Pre-Illinoian-age Alburnett Formation glacial deposits completed in Alburnett Formation glacial deposits; OW-

205B completed in Quaternary loess and the underlying Wolf Creek and Alburnett Formation glacial deposits, OW-220B completed in Pre-Illinoian-age Alburnett Formation glacial deposits; wells OW-224B, OW-225B, OW-226B and OW-227B completed in Quaternary loess and the underlying Wolf Creek and Alburnett Formation glacial deposits; well OW-402B completed in Quaternary loess and the underlying Wolf Creek and Alburnett Formation glacial deposits; and wells OW-412B and OW-414B completed in underlying Wolf Creek and Alburnett Formation glacial deposits.

Area E — Water table monitoring, and the underdrain outlets include:

- Downgradient groundwater underdrain outlets GUE-1 and GUE-2.
- Downgradient water table monitoring wells are OW-113B completed in Pre-Illinoian-age Alburnett Formation glacial deposits, OW-409B completed in Quaternary loess and the underlying Pre-Illinoian-age Wolf Creek Formation glacial deposits, and OW-212B completed in Pre-Illinoian-age Alburnett Formation glacial deposits.
- Water table measurement only wells include several upgradient wells that differ in their well screen geology. The wells include OW-218B completed in Pre-Illinoian-age Wolf Creek Formation and underlying Alburnett Formation glacial deposits and OW-101B, OW-102B, OW-102D, OW-103B, and OW-104B completed in Pre-Illinoian-age Alburnett Formation deposits.

Cell X — Water table monitoring, and the underdrain outlet includes:

- Downgradient groundwater underdrain outlet GUX-1.
- Downgradient water table monitoring includes OW-209B, OW-221B, OW-222B, and OW-223B completed in Pre-Illinoian-age Alburnett Formation glacial deposits.
- Water table measurement only wells include upgradient water table wells that differ in the geology of their well screen intervals. The wells include OW-105B, OW-107BR, OW-113B, OW-214BR, and OW-215BR completed in Pre-Illinoian-age Alburnett Formation glacial deposits.

Cells W-1/W-2 — Water table monitoring, and the underdrain outlet includes:

- Currently closed and are located east and west of the water table divide at the Black Hawk County Landfill.
- Downgradient underdrain outlets GUW1-1 and GUW2-1.
- Downgradient water table wells MW-602B, MW-603B, and MW-604B completed in Pre-Illinoian-age Wolf Creek Formation and the underlying Alburnett Formation glacial deposits.
- Water table measurement only wells related to Cells W-1/W-2 include various wells that differ in the geology of their well screen interval. Upgradient water level measurement only wells include OW-407B, OW-408B and OW-606B where the well screens are set in the Pre-Illinoian-age Wolf Creek Formation and the underlying Alburnett Formation glacial deposits. Sidegradient water level measurement wells include MW-318BR and MW-701B completed in the Pre-Illinoian-age Wolf Creek Formation glacial deposits and MW-320B completed in Pre-Illinoian-age Wolf Creek Formation and underlying Alburnett Formation glacial deposits.

Cell W-3 — Water table monitoring, and the underdrain outlet includes:

- Currently operating, transecting the water table divide at the Black Hawk County Landfill.
- Downgradient underdrain outlet GUW3-1.
- Downgradient water table wells OW-101B, MW-711B and MW-712B completed in Pre-Illinoian-age Wolf Creek Formation and the underlying Alburnett Formation glacial deposits.
- Water table measurement only wells related to Cells W-3/W-4 include various wells that differ in the geology of their well screen interval. Sidegradient water level measurement wells include MW-701B, MW-702B, MW-703B, MW-704B, MW-705B, MW-706B, MW-707B, MW-708B and MW-304B completed in the Pre-Illinoian-age Wolf Creek Formation glacial deposits.

Asbestos Cell No. 1 — Water table monitoring includes:

- Downgradient water table monitoring well MW-409B completed in Quaternary loess and the underlying Pre-Illinoian-age Wolf Creek Formation glacial deposits.
- Water table measurement only wells include various wells that differ in the geology of their well screen interval. Upgradient water table wells include OW-101B and OW-102B completed in Pre-Illinoian-age Alburnett Formation glacial deposits. Sidegradient water table wells include OW-103B and OW-104B completed in Pre-Illinoian-age Alburnett Formation glacial deposits. Downgradient water table measurement only is completed in water table well OW-102D completed in Pre-Illinoian Alburnett Formation glacial deposits.

Asbestos Cell No. 2 — Water table monitoring includes:

- Currently active.
- Downgradient water table monitoring well MW-409B completed in Quaternary loess and the underlying Pre-Illinoian-age Wolf Creek Formation glacial deposits.
- Water table measurement only wells include various wells that differ in the geology of their well screen intervals. Upgradient water table measurement only wells include OW-101B, OW-102B, and OW-102D completed in the Pre-Illinoian-age Alburnett Formation glacial deposits. Sidegradient water table measurement only wells include OW-103B and OW-104B completed in Pre-Illinoian Alburnett Formation glacial deposits.

1.3.2 Bedrock Monitoring Points

The wells comprising the uppermost bedrock monitoring program for all the waste disposal areas at the Black Hawk County Landfill are listed on Table 1 and include the following monitoring wells shown on Figure 1. The upgradient and downgradient positions of the wells within the bedrock aquifer (deep) groundwater flow system for each monitored solid waste unit is based on groundwater flow depicted on Figure 5. All the wells are completed in the uppermost bedrock aquifer beneath the facility, the Devonian-age Cedar Valley Group dolomite.

The 6 detection monitoring wells completed in the uppermost bedrock include:

- Deep monitoring well P-604C upgradient of the entire facility.
- Deep monitoring well P-703C upgradient of the entire facility
- Deep monitoring well MW-318CR upgradient of the entire facility
- Deep monitoring well P-213C downgradient Cell W-3, sidegradient of Area E and upgradient Cell X.
- Deep monitoring well P-214CR downgradient of Cell W-1, Cell W-2, Cell W-3, Area A, Area C, and Cell X.
- Deep monitoring well P-215CR downgradient of Area C, Area E, Cell W-1, Cell W-2, Cell W-3, and Cell X.
- Deep monitoring well P-216CR downgradient of Area E, Cell W-1, Cell W-2, Cell W-3, and Cell X.

The water level measurement only wells completed in the uppermost Devonian-age Cedar Valley Group dolomite bedrock include:

- Deep well P-101C downgradient of Cell W-3, sidegradient of Cell W-1 and upgradient of Asbestos Cell No. 1.
- Deep well P-102C downgradient of Cell W-3, sidegradient of Cell W-1 and downgradient Asbestos Cell No. 1.
- Deep well downgradient of Cell W-3, P-103C sidegradient of Cell W-1, downgradient Asbestos Cell No. 1, and upgradient Asbestos Cell No. 2.
- Deep wells P-106C and P-107C downgradient of Cell W-1 and Area C, and upgradient of Cell X.
- Deep wells P-108C and P-109C downgradient of Cell W-1 and Area A.
- Deep wells P-110C and P-111C sidegradient to the entire facility.
- Deep monitoring well P-114C upgradient of Area A

- Deep monitoring well P-402C upgradient of Area A and downgradient of Cell W-1
- Deep monitoring well downgradient of Cell W-3, P-104C upgradient of Area E
- Deep monitoring well P-105C downgradient of Cell W-1 and Area A
- Deep monitoring well P-113C downgradient of Area C

1.3.3 Changes or Deviations to HMSP for 2024 Monitoring

Refer to 2025 HMSP for changes submitted JANUARY 2025.

The monitoring wells comprising the water-table and bedrock, and landfill cells underdrains for the 2024 sampling program for the Black Hawk County Landfill are listed on Table 1 and are shown on Figure 1.

1.3.4 Current Site Map

The Landfill location in Black Hawk County and site map showing the current monitoring system is shown in Figure 1. Groundwater level only monitoring wells are shown on Figure 2.

1.3.5 Current Groundwater Contour Maps

Groundwater is monitored in three water-bearing units: 1) the shallow groundwater measured by the water table, 2) intermediate groundwater within localized, discontinuous sand and silt lenses encapsulated with the glacial diamicton sequence, and 3) deep groundwater measured by the potentiometric surface of the Devonian Cedar Valley Formation that is comprised of dolomitic limestone. Groundwater elevations for March and September 2024 are summarized in Table 4.

1.3.5.1 Water Table Groundwater Flow

The water table within the Quaternary deposits occurs within the thin surficial loess, alluvium and colluvium, and the underlying Wolf Creek Formation and Alburnett Formation glacial diamictons.

Figure 3 shows the March 2024 water table at the site. The water table is shallow, and gradients are primarily downward to bedrock through a sequence of fine-grained sediments composed of thin surficial loess, alluvium, and colluvium, and the underlying thick glacial diamicton sequence.

Prior to Landfill construction, the water table surface mimicked the ground surface contours with a north-south trending groundwater divide in the central area of the site, and with declining water table elevations to the southeast and northwest. During landfill construction, landfill base grades have been excavated below the water table at Area E, Cell X, and Cells W-1, W-2 and W-3, locally changing water table flow and lateral gradients. The present water table follows a pattern similar to pre-Landfill construction conditions, with a north-south trending water table divide in the central area of the site and declining elevations to the east and west; but Landfill excavation and installation of groundwater underdrain systems have altered water table flow and result in locally lowered water table elevations.

1.3.5.2 Intermediate Groundwater Flow

Intermediate wells were removed from the detection monitoring system in accordance with IDNR Permit Modification 2 (May 2001) and were retained for water level monitoring only. The intermediate wells were retained to monitor vertical groundwater flow and vertical hydraulic gradients. Figure 4 shows the intermediate well locations with water elevations obtained in March 2024. A contour map is not presented for these wells because they are screened in different localized, discontinuous sand and silt lenses within the glacial sequence. These lenses occur at various depths beneath the water table and do not form a single hydrostratigraphic unit.

1.3.5.3 Deep Groundwater Flow

Figure 5 presents the March 2024 potentiometric surface within the Cedar Valley Formation. The potentiometric surface is generally low and uniform across the site. The surface is consistent with previous

years, showing the direction of groundwater movement in the east-northeast direction. Hydraulic gradients are consistent with past years' maps.

Thus, the designated upgradient wells are adequately monitoring upgradient groundwater, and designated downgradient wells are monitoring downgradient groundwater.

1.4 Monitoring Well Maintenance and Performance Re-Evaluation Plan

The evaluation of water levels and their relationship to the well screen interval was completed throughout the year to comply with IAC 567-113.10(455B)(2)f(2). As part of this evaluation, screen depths were verified and reviewed to determine whether they are properly placed with respect to groundwater levels. To comply with IAC 567-113.10(455B)(2)(3), changes to depth-to-bottom readings were also evaluated to determine if sedimentation over time has occurred. Table 3 presents the monitoring well maintenance and performance evaluation schedule. Table 4 presents a summary of monitoring well levels and changes in recharge rates. Monitoring well inspection of the wells can be found in Appendix G.

Starting with the 2018 landfill monitoring events, the measurement of well recharge rates was initiated through use of recorded flow rates, post-sampling groundwater level recovery rates and the slug test method.

Monitoring wells at Black Hawk County Landfill occur in three separate hydrostratigraphic units: shallow (water table), intermediate, and deep (bedrock). As noted in the HMSP, there are 23 intermediate, 64 shallow, and 21 deep monitoring wells installed at the Landfill. Each of these hydrostratigraphic units has different hydraulic conductivities. An update on slug tests and well recharge rates will be presented in the 2025 AWQR.

Low-flow sampling was utilized during all 2024 sampling events. As part of low-flow sampling, stabilization data, including flow rate ml/min), groundwater level, redox potential (+/-10mv), pH (+/-10%), conductivity (+/-10%), turbidity (less than 5 NTU) and dissolved oxygen (+/-10%) parameters were monitored and provide information on changes in well chemistry and well groundwater flow. These parameters are measured using an In-Situ Aqua Troll 500 equipped with multiple water quality sensors. Low-flow sampling data for the shallow and deep wells, and groundwater layer discharge points are included in Appendix C. Calibration information is also included in Appendix C. The 2024 high and low groundwater level measurements and well depth-to-bottom readings are included in Table 4.

Annually, each well is inspected during two site-wide groundwater level measurement events for the following information:

- Condition of guard posts
- Condition of surface seal
- Condition of protective casing
- Well security
- Well cap condition
- Presence of water in protective casing
- Biological hazards (i.e., wasp nest)
- Condition of well casing
- Obstructions or bends in well casing
- Sediment in well bottom

Inspection notes are made on field forms. In addition, wells are photographed to document condition of monitoring well. Based on inspection results, maintenance is scheduled for each well which requires repairs. The monitoring well maintenance and performance re-evaluation was completed in 2024, as noted in Table 3. Overall, the monitoring wells are in good operating condition with no changes in groundwater flow rate or stabilization parameters. The data indicates no measurable degradation of the monitoring wells occurred in 2024. The next monitoring well condition assessment report will be submitted in 2025 AWQR.

2. Reporting Period Monitoring Activities

2.1 Current Detection Monitoring Activities for 2024

The detection monitoring program for the Black Hawk County Landfill has been established in accordance with the IDNR regulations in 567-113.10(5). The existing detection monitoring system consists of 47 monitoring points, including 35 shallow (water table) wells:

OW-101B	OW-105B	OW-113B	OW-114B	OW-205B	OW-209B
OW-212B	OW-213BR	OW-216BR		OW-219B	OW-220B
OW-221B	OW-222B	OW-223B	OW-224B	OW-225B	OW-226B
OW-227B	MW-319B	OW-401B	OW-402B	MW-409B	OW-410B
OW-411B	OW-412B	OW-413B	OW-414B	OW-501B	MW-602B
MW-603B	MW-604B	MW-709B	MW-710B	MW-711B	MW-712B

6 deeper wells in the uppermost bedrock:

P-213C	P-214CR	P-215CR	P-216CR	P-604C	P-703C

and 5 groundwater underdrain monitoring locations:

GUE-2	GUX-1	GUW1-1	GUW2-1	GUW3-1

A summary of the hydrologic monitoring system is provided in Table 1. Locations of detection monitoring points are shown on Figure 1.

Table 5 presents the background and GWPS summary for the shallow and deep detection monitoring wells. Table 6 presents a summary of monitoring points (groundwater wells and groundwater underdrain outlets) with detected constituent pairs for the detection monitoring locations. Appendix B presents historical summary tables for all detection monitoring locations.

2.2 Current Assessment Monitoring Activities

Currently, there are 19 wells with ongoing and newly identified statistically significant increases (SSIs). Monitoring wells OW-113B, OW-205B, OW-212B, OW-220B, OW-221B, OW-222B, OW-223B, OW-224B, OW-225B, OW-226B, OW-227B, OW-401B, OW-402B, MW-409B, OW-410B, OW-411B, OW-412B, OW-414B, and P-213C have exceedances for metals (Table 7). Wells OW-220B, OW-221B, OW-224B, OW-225B, OW-226B, OW-227B, OW-401B, OW-402B, OW-410B, OW-412B, and OW-414B have exceedances for organic compounds. At these assessment wells, comparisons to the appropriate statewide standards for a protected groundwater source were performed using either a parametric or a nonparametric confidence interval and 2024 results were also compared to both interwell and intrawell background values for trends. The groundwater protection standards used in the comparisons were obtained from the IDNR web site at:

https://programs.iowadnr.gov/riskcalc/Home/statewidestandards.

Groundwater underdrains GUE-2, GUX-1, GUW2-1, and GUW3-1 have a few organics detected and few GPS exceedances for metals. Water collected from all groundwater underdrains is being discharged to the site leachate collection system. Groundwater underdrain GUW1-1 could not be sampled in 2024 due to access restrictions and pump not working. Tables 7 and 8 present a summary of ongoing and newly identified SSIs and a summary of historic SSIs and SSLs. Wells OW-105B, OW-114B, OW-205B, OW-220B, OW-224B, OW-225B, OW-226B, OW-227B, OW-401B, OW-402B, OW-410B, OW-411B, OW-412B, OW-413B, OW-414B, P-402A, and P-402C are part of an ongoing assessment of corrective measures (ACM) and are discussed in a separate 2024 ACM report submitted in January 2025.

3. Data Evaluation and Summary

Water Quality

A system of groundwater monitoring wells and groundwater underdrain outlets monitor water quality at the Landfill. These sampling points are shown on Figure 1. Table 1 presents a summary of information on each monitoring point.

Statistical Analysis

Samples from the monitoring points were analyzed for IDNR Appendix I parameters. Several wells (OW-205B, OW-401B, OW-402B, and MW-409B) have been in assessment monitoring and have been analyzed for IDNR Appendix II parameters at least four times during 2009 through 2024. In addition, analyses of dissolved Appendix I metals were performed during 2007 through 2013. Beginning with the fall 2014 sampling event, all samples that included total metals analyses were also tested for total suspended solids (TSS) in the laboratory, and turbidity as measured by both field and laboratory methods. With changes directed by IDNR and advent of TSS and field turbidity, only total metals are tested at Black Hawk County Landfill since 2014.

Summary tables B-1, B-2 and B-3 presented in Appendix B present the historical analytical results for each sampling point from October 2007 through the beginning of 2025. The minimum detection levels for many analytes have varied between the older and more recent sampling events. This may be partially a result of a change in the laboratory testing procedures for these analytes. An additional factor in the change in detection limits is, that beginning in October 2011, all results are reported to the method detection limit. The affected data points were not adjusted for the statistical analyses.

Historical metals parameters data outliers, present in the past background datasets, are assumed attributable to sampling techniques which did not minimize turbidity during sampling. Beginning with the fall 2014 sampling event, precise low-flow sampling techniques were instituted, and qualitatively, reduced total suspended solids and turbidity have been observed.

Because of these factors, in fall 2016, the background datasets for the shallow and bedrock hydrostratigraphic units were re-evaluated to retain data that better represents samples obtained using current sampling methods and using results reported to the method detection limit. It was determined that by excluding upgradient background data obtained prior to fall 2014, the goal of representative background datasets could be achieved; and therefore, the datasets used for interwell comparisons span the period from 2014 through the end of 2023. Table 5 presents a summary of background and GWPS values for the shallow (water table) and deep (bedrock aquifer) groundwater monitoring zones for 2024 interwell comparisons. Background datasets used for 2024 and 2025 interwell comparisons will also span the period from fall 2014 through the end of 2023. Background datasets used for 2026 interwell comparisons will be updated to span the period from 2014 through the end of 2025. Table 5 provides a summary of background data, statistical test results and estimated prediction limits.

Prior to statistical analysis, the background data for parameters with less than 50 percent non-detections were examined to determine whether they were normally distributed. No tests were conducted to detect results that are artificially high or low (outliers) due to field, transportation, laboratory, or transcription error. Past testing has indicated that although some background data points meet the statistical criteria to be outliers, no justification could be found to remove them from the background data, and they remained as part of the background data. No trend testing was conducted.

Background levels of parameters detected in 2024 were established by pooling all available historical data from the upgradient wells from fall 2014 through 2023 (refer to Tables 1 and 5 for upgradient well list). For the detection monitoring program, compliance well data were statistically tested against the background data using interwell prediction limit methods. Such tests were conducted only for compliance well results noted at or above the reporting limit. The procedure used to determine the appropriate prediction limit method was as follows:

1. If background for a given parameter contained more than 50 percent non-detects, a nonparametric prediction limit was used to test the compliance data against upgradient background, and the method detection limit (MDL) was used for non-detect values to account for non-detects. An NPL is defined as maximum detected value, or MDL if 100 percent ND.

2. If background for a given parameter contained between 20 percent and 50 percent non-detects, Cohen's adjustment was used to account for non-detect values. If background for a given parameter contained less than 20 percent non-detects, one-half of the MDL was used to account for non-detect values.

3. If background for a given parameter contained less than 50 percent non-detects, the background data were tested for lognormality and normality using the Shapiro-Wilk procedure and probability plots. If background data for a given parameter were not found lognormal or normal in statistical distribution (defined as a significant result for the Shapiro-Wilk procedure at a 95 Percent Confidence Level), a distribution-free prediction limit (99 Percent Confidence Level) was used to test the compliance well data against background.

4. If background for a given parameter was lognormal or normal (defined as a non-significant result for the Shapiro-Wilk method at a 95 Percent Confidence Level) and contained less than 50 percent non-detects, a parametric prediction limit (USEPA Unified Guidance 99% Confidence One-Sided) was used to test the compliance data against background.

5. If background data for a given parameter were neither lognormal nor normal in statistical distribution (defined as a significant result for the Shapiro-Wilk procedure at a 95 percent confidence level) and contained less than 50 percent non-detects, a distribution-free prediction limit (99 percent confidence level) was used to test the compliance well data against background. Table 6 presents a background and GWPS summary.

Interwell comparisons were not conducted for detected downgradient analytes with estimated (J-flagged) concentrations.

A pass 1-of-2 verification resampling scheme was utilized for wells which statistically exceeded the background prediction limit. For current year compliance data, an exceedance of the appropriate interwell prediction limit for a given Appendix I inorganic constituent, or the reporting limit (RL) for an organic compound, triggered a retest for that constituent within 90 days of the original sampling date. If the retest results also exceeded the prediction limit or an organic RL, a statistically significant increase (SSI) over background levels at that well was considered to have occurred. If it could not be demonstrated that a source other than a landfill unit caused the contamination or that the SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality, the well then entered assessment monitoring.

3.1 Detection, Assessment, and Corrective Measures Monitoring

The Spring 2024 semi-annual sampling event commenced on April 23, 2024, and was completed on May 23, 2024. AECOM received the last of the laboratory data on June 10, 2024; and statistical analyses were completed on July 13, 2024.

The Fall 2024 semi-annual event commenced on September 25, 2024, and was completed on October 30, 2024. AECOM received the last of the laboratory data on November 12, 2024; and statistical analyses were completed on January 8, 2025.

Two re-sampling events were completed: July/August 2024 and January 2025. These events were completed to confirm or reject SSIs and/or GWPS exceedances.

Sample turbidity measurements using field methods were recorded for all low-flow samples. All groundwater samples were analyzed for total suspended solids (TSS) by Eurofins lab. Field turbidity and TSS measurements were also recorded for the groundwater underdrain outlet samples.

Table 6 provides a summary of wells with the Appendix I parameters detected in the results for the spring semi-annual, August re-sample, fall semi-annual sampling 2024 events and January 2025 re-sampling event. The results of the interwell compliance to background comparisons are also presented in Table 6.

Wells OW-101B, OW-114B, OW-213BR, OW-216BR, OW-217B, OW-218B, OW-219B, MW-304B, MW-308B, MW-319B, OW-403B, OW-405B, MW-701B, MW-702B, MW-703B, MW-704B, MW-705B, MW-706B, MW-707B, MW-708B, MW-709B and MW-710B serve as the shallow background monitoring points for Landfill Areas A, C and E, Cells X, W1, W2, W3 and W4.
(Table 5). Samples from monitoring wells MW-318CR, P-604C, and P-703C were used to represent deep groundwater in the underlying bedrock. These wells serve as the basis of comparison to determine the impact the Landfill may have on water quality.

J-flagged organic detections in the shallow and deep upgradient wells occurred very rarely in 2024.

3.1.1 Detection Monitoring

Downgradient Monitoring Points

Comparisons between downgradient sampling points and their upgradient counterparts are intended to detect any possible impact from the Landfill on water quality downgradient of the Landfill. Upgradient and downgradient sampling points are sampled concurrently.

Shallow Monitoring Points

Monitoring wells OW-105B, OW-113B, OW-205B, OW-209B, OW-212B, OW-220B, OW-221B, OW-222B, OW-223B, OW-224B, OW-225B, OW-226B, OW-227B, OW-401B, OW-402B, MW-409B, OW-410B, OW-411B, OW-412B, OW-413B, OW-414B, and MW-501B, and underdrain outlets GUE-2 and GUX-1 are located and screened to intercept shallow groundwater in the eastern part of the Landfill monitoring closed landfill cells Area A, Area C, Area E, Cell X, and Asbestos Cell 1.

Monitoring wells MW-602B, MW-603B, and MW-604B, underdrains GUW1-1 and GUW2-1 are located and screened to intercept shallow groundwater in the western part of the Landfill monitoring Cells W-1 and W-2.

Monitoring wells MW-711B, and MW-712B, and underdrain outlet GUW3-1 are located and screened to intercept shallow groundwater in the eastern and western parts of the Landfill monitoring currently active Cell W-3.

Table 6 presents the results of the interwell comparisons for all inorganic parameters detected in the shallow downgradient detection monitoring points not currently in assessment monitoring.

OW-101B:
Shallow well OW-101B had no verified prediction limit or GPS exceedances for Spring and Fall 2024.

OW-105B:
Shallow well OW-105B had no verified prediction limit or GPS exceedances for Spring and Fall 2024.

MW-501B:
Shallow well MW-501B had no verified prediction limit or GPS exceedances for Spring and Fall 2024.

OW-209B:
Shallow well OW-209B had no verified prediction limit or GPS exceedances for Spring and Fall 2024.

MW-602B:
Shallow well MW-602B had no verified prediction limit or GPS exceedances for Spring and Fall 2024.

MW-603B:
Shallow well MW-603B had no verified prediction limit or GPS exceedances for Spring and Fall 2024.

MW-604B:
Shallow well MW-604B had no verified prediction limit or GPS exceedances for Spring and Fall 2024.

MW-711B:
Shallow well MW-711B had no verified prediction limit or GPS exceedances for Spring and Fall 2024.

MW-712B:
Shallow well MW-712B had no verified prediction limit or GPS exceedances for Spring and Fall 2024.

Bedrock Monitoring Points

P-214CR:
Deep well P-214C had no verified prediction limit or GPS exceedances for Spring and Fall 2024.

P-215CR:
Deep well P-215C had no verified prediction limit or GPS exceedances for Spring and Fall 2024.

P-216CR:
Deep well P-216C had no verified prediction limit or GPS exceedances for Spring and Fall 2024.

Underdrain Monitoring Points

GUE-2:
Monitoring point GUE-2 had detections of arsenic, barium, cobalt, and nickel, all below corresponding GPSs. Appendix I organic detections included benzene and cis-1,2-Dichloroethylene. The GUE-2 effluent will continue to be diverted to the BHCL leachate gravity sewer through 2025, according to the approved GUE-2 ACM.

GUW1-1:
GUW1-1 was not sampled in 2024 due to limited access during the construction of MSW Cell W-3, Phase II.

GUW2-1:
Monitoring point GUW2-1 had detections of arsenic, barium and cobalt during Spring and Fall 2024. There were no Appendix I organic detections. The GUW2-1 effluent will continue to be diverted to the western drainage ditch.

GUX-1 (includes GUE-1):
Monitoring point GUX-1 had detections of barium which were below corresponding GPS. There were no Appendix I organic detections for Spring and Fall 2024.

GUW3-1:
Monitoring point GUW3-1 had detections of arsenic, barium, cobalt, copper, nickel, and thallium, for Spring and Fall 2024. There were no Appendix I organic detections. The GUW3-1 effluent is diverted to the eastern drainage ditch.

3.1.2 Assessment Monitoring

Assessment Points

Tables 7 and 8 present a summary of ongoing and newly identified SSIs and SSLs detected in 2024 at assessment monitoring locations OW-113B, OW-212B, OW-221B, OW-222B, OW-223B, MW-409B, and P-213C. Tables 7 and 8 also include background interwell prediction limits, lower confidence limits (LCL), upper confidence limits (UCL), GWPSs, initial exceedance, resampling, and background sample dates.

Analyses were done only for analytes with at least one quantified detection above the respective reporting limits.

As previously stated, wells OW-205B, OW-220B, OW-224B, OW-225B, OW-226B, OW-227B, OW-401B, OW-402B, OW-410B, OW-411B, OW-412B, OW-413B, AND OW-414B are being investigated as part of the ACM for Areas A and C which began in 2016. Results for these wells are discussed in a separate report submitted in January 2025.

OW-113B:
An exceedance of the cobalt prediction limit and the cobalt site-specific GPS of 9.83 µg/L occurred in Spring and Fall 2024 sampling. Well OW-113B, located east of Area C and south of Area E, was sampled for Appendix II in November 2022. Well OW-113B had no detected Appendix II only parameters in 2021 and 2022. The elevated cobalt at this location is considered naturally occurring. Site-specific limits are provided in an updated HMSP for 2025 monitoring.

This well will be sampled for Appendix II again in April 2027.

OW-212B:
An exceedance of the cobalt prediction limit and the site-specific cobalt GPS of 9.83 µg/L occurred in Spring and Fall 2024 sampling. The UCL is above the cobalt site-specific GPS of 9.83 µg/L, which indicates an SSL (Table 8).

Well OW-212B, located downgradient of Area E, was sampled for Appendix II in 2020, 2021 and 2022. Well OW-212B had no detected Appendix II only parameters in 2020, 2021 and 2022. The elevated cobalt at this location is considered naturally occurring. This well will be sampled for Appendix II again in Spring 2027.

OW-221B:
Results for monitoring well OW-221B show prediction limit exceedances for arsenic and barium during Spring and Fall 2024 sampling. The well also had an organic detection above RL for Benzene.

Monitoring well OW-221B was sampled for Appendix II in September 2020, October 2021, and October 2022. Well OW-221B had no detected Appendix II only parameters in 2020, 2021 and 2022. Arsenic and barium have been compliant for 3 years and are no longer considered SSLs (Table 8) but remain SSIs (Table 7). Cobalt currently remains an SSL until it has been compliant for 3 consecutive years (Table 8). This well will be sampled for Appendix II again in Spring 2027.

OW-222B:
Results for monitoring well OW-222B show no verified prediction limit or GPS exceedances during Spring and Fall 2024 sampling.

Cobalt currently remains an SSL until it has been compliant for 3 consecutive years (Table 8). Monitoring well OW-222B was sampled for Appendix II in October 2021 and October 2022. The well had no organic or non-Appendix I detections. This well will be sampled for Appendix II again in Spring 2027.

OW-223B:
Results for monitoring well OW-223B show no verified prediction limit or GPS exceedances during Spring and Fall 2024 sampling.

Monitoring well OW-223B was sampled for Appendix II in September 2020, October 2021 and October 2022. The well had no organic or non-Appendix I detections. Copper has been compliant for 3 years and is no longer considered an SSI or SSL (Table 8). This well will be sampled again for Appendix II again in Spring 2027.

MW-409B:
An exceedance of the cobalt prediction limit and the cobalt site-specific GPS of 9.83 µg/L occurred in Spring 2024 sampling, The Fall 2024 sampling result and LCL show cobalt below the site-specific GPS (Table 7). The UCL is above the cobalt site-specific GPS of 9.83 µg/L, which indicates an SSL (Table 8).

Well MW-409B, located downgradient of Area E, was initially placed in assessment monitoring in 2013 due to low level detections of benzene (<5 µg/L) in 2012. This well has been sampled for the full list of Appendix II constituents in 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021 and 2022. There have been no confirmed detections of Appendix II parameters, not in Appendix I, since 2013. There have been no confirmed detections of Appendix I organic parameters since 2013. The elevated cobalt level at this location is considered naturally occurring and, given no Appendix I or Appendix II organic detections, this well will remain in assessment monitoring with the next Appendix I sampling in Spring 2025.

This well will be sampled for Appendix II again in Spring 2027.

P-213C:
Bedrock well P-213C had a verified prediction limit or GPS exceedance for chromium in Fall 2024. This well is located sidegradient to Area E and is not located directly downgradient of Cells W-1 and W-2 or any other existing closed landfill cells. The Fall 2024 and January 2025 resampling results for chromium are above the current background prediction limit of 11.4034 µg/L, but below the GPS of 100 µg/L. The UCL for chromium remains below the GPS. Cobalt currently remains an SSL until it has been compliant for 3 consecutive years (Table 8).

This well was sampled for Appendix II in Spring 2024 and there were no detections for Appendix II only parameters. This well will remain in assessment monitoring with the next Appendix I sampling in Spring 2025. This well will be sampled for Appendix II again in Fall 2029.

Of all the assessment wells, exceedances of the groundwater protection standard (GPS) were noted for cobalt at shallow wells (Table 7) OW-113B, OW-212B, MW-409B and deep well P-213C; and for arsenic in shallow well OW-221B. Table 8 presents a qualitative summary of historic SSIs and SSLs for shallow wells OW-113B, OW-212B, OW-221B, OW-222B, OW-223B, MW-409B, and bedrock well P-213C.

The World Health Organization (2006) provided references noting background surface water and groundwater concentrations of cobalt ranged between 1 – 10 µg/L. Natural sources include erosion (wind-blown continental dusts, such as loess), weathering of rocks and soil, seawater spray, volcanoes, forest fires, extraction by plants, and continental and marine biogenic emissions. The major anthropogenic sources of environmental cobalt include mining and processing (smelting) of cobalt-bearing ores, the use of cobalt-containing sludge or phosphate fertilizers on soil, the disposal of cobalt containing waste, and atmospheric deposition from activities such as the burning of fossil fuels and smelting and refining of metals (Smith & Carson, 1981). The Black Hawk County Landfill area was farmed in the past; hence, the most likely source for cobalt is phosphate fertilizers. Another possible source may be due to deposition of wind-blown silts in the form of loess during the last glaciation which occurred in the Black Hawk County area. As such, cobalt levels at this location below 10 µg/L are considered to be naturally occurring, and no resampling is planned. Black Hawk County Landfill will continue to monitor cobalt concentrations in groundwater over time.

3.2 Quality Assurance/Quality Control Plan

To monitor the quality of sampling in the field and the quality of the laboratory processing and analysis, equipment blanks, trip blanks and field duplicate samples were collected during the April/May, July/August, October/November, and January (2025) sampling events at the Black Hawk County Landfill (Landfill). The April/May and October/November events were semi-annual sampling events, and the July/August and January (2025) event were re-sampling events to monitor for select parameters. A description of the quality control samples collected is provided below.

3.2.1 Trip Blanks

The primary purpose of a blank sample (“blank”) is to measure the magnitude of contaminant concentration (for analyte(s) of specific interest) that might have been introduced into the sample as a result of sampling-related and transport activities. A definition of trip blanks is as follows:

- A sample collected at the laboratory using analyte-free water in the appropriate sample container with the proper preservative, taken out to the field, and returned to the laboratory for analysis without being

opened. Trip blanks are generally for volatile organic compounds, low-level metals, and gasoline range hydrocarbon samples. The sample is used to assess contamination introduced during sample transport.

To assess the degree and type of accidental contamination by volatile organics during the sample collection and shipment procedures, one 40-ml volatile trip blank sample per cooler were filled completely with distilled water prior to mobilization to the site and stored with the sample volatile vials to be used during field sample collection.

3.2.2 Field Duplicates

The primary purpose of replicate samples is to identify and (or) quantify the variability in all or part of the sampling and analysis system. Replicates -- environmental samples collected in duplicate, triplicate, or greater multiples -- are considered identical or nearly identical in composition and are analyzed for the same chemical properties.

A definition of field duplicates is as follows:

- Two or more samples collected at the same sampling location. Field replicates should be samples collected side-by-side or by collecting one sample and immediately collecting the second sample. Field replicates represent the precision of the whole method, site heterogeneity, field sampling and the laboratory analysis.

Sequential replicates or field duplicates are samples of environmental water -- commonly groundwater -- that are collected consecutively (one after the other) from the same sampling site and that are subjected to identical laboratory analysis. The sequential replicate can be collected, for example, as a sample pumped from a well or stream. Sequential replicates are used to assess variability among samples that results from field activities (collection, processing, and shipping procedures). Because sequential replicates are not collected simultaneously, inhomogeneities in the water resource are incorporated into the variability measured. Also included is the variability inherent in laboratory handling and analysis of the samples.

3.2.3 Field Blanks

The primary purpose of field (rinsate or equipment) blank samples is to verify the effectiveness of the decontamination procedures on non-dedicated or reusable sampling equipment.

A definition of field blanks is as follows:

- A field (equipment or rinsate) blank is a volume of solution (in this case, laboratory-grade deionized water) used to rinse a sampling tool before sample collection. The rinse water is collected and tested to verify that the sampling tool is not contaminated.

For groundwater monitoring, 1 field blank is collected for every 20 samples, or 1 per sampling round, whichever is more frequent.

3.2.4 Field Duplicate, Field Blank, and Trip Blank Sample Results

Sample results for trip blanks, field blanks, and field duplicate samples were reviewed, and results of the analysis are summarized in Tables 9 and 10. A descriptive summary is provided below.

Trip Blanks

Trip blanks in 2024 had no detections above the RL.

Field Blanks

Field (equipment) blanks in 2024 had detections of inorganic parameter, barium, above the RL. Bromodichloromethane and trichloromethane were organic parameters detected above the RL.

Field Duplicates

Field duplicate results were compared to determine the precision between sampling results. The precision was based on a calculation of Relative Percent Difference (RPDs) between detected concentrations. RPDs within 20 percent limit for groundwater or within ±2x the reporting limit (RL) were considered acceptable. Field duplicates for detected results are summarized in Table 10.

Most of the duplicate results for all inorganics were all within 20 percent or ±2x the reporting limit (RL).

Conclusions

A review of detections in trip blanks and field blanks indicates sampling, decontamination, and sample storage/transport were generally conducted adequately. Results of field blank samples indicate there may have been some issues with inadequate decontamination; however, the field blank detections in 2024 were few, detected concentrations were generally estimated below the reporting limit, and several detected parameters were common laboratory contaminants. Decontamination procedures will continue to be reviewed to be sure all equipment is being adequately decontaminated between wells.

4. Recommendations

The Landfill is affecting local shallow groundwater quality at the west edge of unlined Area A and Area C and north side of Area C. An Assessment of Corrective Measures is underway for these areas, detailed results of the assessment were submitted to IDNR at the end of June 2018. An updated, standalone ACM report will be provided by January 31, 2025. The current assessment monitoring wells listed in Tables 7 and 8 will remain in assessment monitoring. Low-level releases also appear to be occurring to the groundwater underdrain dewatering layers of Area E and Cell X. Releases to the groundwater underdrain dewatering layers is being treated as leachate and is incorporated into the leachate discharge to the City of Waterloo wastewater treatment plant. Water quality at the deep monitoring wells located at the east edge of the landfill is not significantly impacted by Landfill activities.

Currently, monitoring wells OW-113B, OW-205B, OW-212B, OW-220B, OW-221B, OW-222B, OW-223B, OW-224B, OW-225B, OW-226B, OW-227B, OW-401B, OW-402B, and MW-409B have been sampled for Appendix II each year, for the past five years, with last full Appendix II sampling occurring in Fall 2024. All pass 1-of-2 Appendix II only detected parameters above RL have been added to the individual wells' semi-annual monitoring parameter list and are sampled at each semi-annual event. BHCL has modified the frequency of the complete list of Appendix II parameters from annual to once every five years for these wells. The HMSP has been revised to note this schedule. Analysis of sampling data will continue to be conducted in accordance with Chapter 113 of the IAC.

IDNR will be provided a copy of the RCRA Annual Report which provides results for all wells included in the RCRA permit.

5. References

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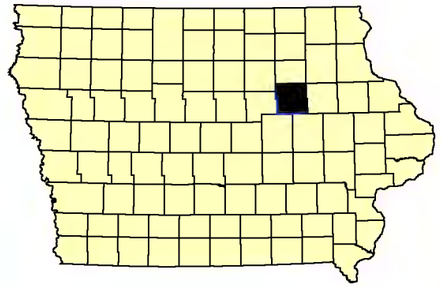
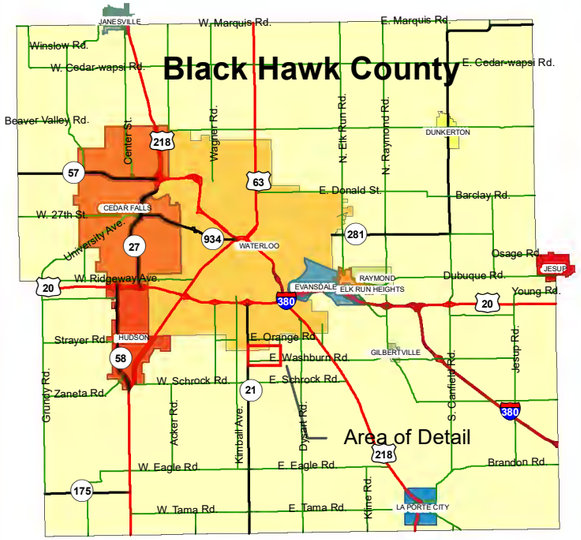
Rust Environment & Infrastructure, July 1997, Hydrogeologic Investigation Report for Landfill Expansion, Black Hawk County Landfill.

Figures





Leachate Collection

- Shallow Detection Well
- Intermediate Detection Well
- Deep Detection Well
- Surface Water Point
- Leachate Cleanout
- Manhole
- Tank
- Collection Line
- Sideslope Riser
- Force Main

0 250 500 750 1,000

Feet

N W E S

Basemap: Black Hawk County, IA Assessor, Spring 2024

Hammond Avenue

Hess Road

Washburn Road

NEUTRAL TRENCH

ASBESTOS CELL NO. 1

ASBESTOS CELL NO. 2

CELL W4

CELL W3

CELL W2

CELL W1

AREA E

AREA C

AREA A

CELL X

CODISPOSAL AREA

Scale House

MW-703B, MW-704B, MW-705B, MW-702B, MW-701B, MW-604B, MW-603B, MW-602B, MW-606B, MW-319B, SW-1, SW-4, P-703C, P-604C, GUW2-1, MW-706B, MW-707B, MW-708B, MW-709B, MW-710B, GUW1-1, OW-412B, OW-411B, OW-410B, MW-711B, MW-712B, OW-205B, OW-413B, OW-402B, P-402C, P-402A, OW-414B, OW-401B, OW-114B, MW-501B, MW-409B, OW-219B, OW-213BR, P-213C, OW-216BR, P-216CR, OW-212B, GUE-1, OW-226B, OW-113B, OW-224B, OW-225B, OW-220B, OW-227B, OW-221B, OW-105B, SW-5, GUX-1, GUE-2, OW-222B, OW-214BR, P-214CR, OW-223B, OW-209B, OW-215BR, P-215CR, SW-3, SW-2

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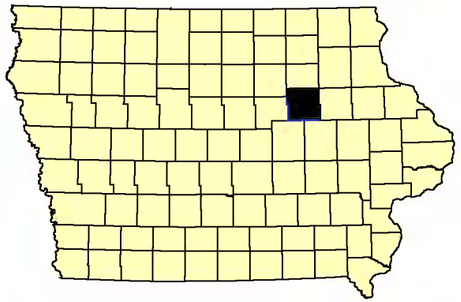
Figure 1
Site Map of IDNR Detection Monitoring Locations and Leachate Collection Features

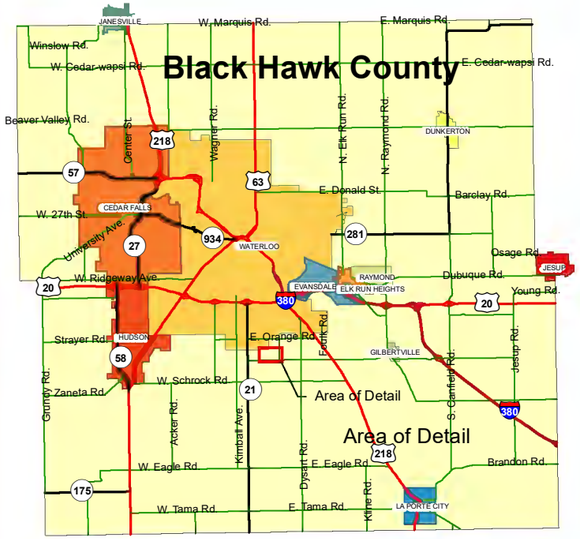
Annual Water Quality Report
Black Hawk County Solid Waste Commision
Waterloo, Iowa

Jan. 2025

60746421

\\na.aecomnet.com\LFS\AMER\Waterloo-USWAT1\DCS\Projects\TRN\60722882_2024_BH_SWMC_Eng_Services\400_Technical\435 Water Quality\01-IDNR\2024 AWQR\04-GIS Figures\Fig 01 Detection_HMSP_for_DNR_AWQR.mxd





Legend to Monitoring Points

- Shallow
- Intermediate
- Deep

0 250 500 750 1,000

Feet

N

W E

S

Basemap: Black Hawk County, IA Assessor, Spring 2024

ASBESTOS CELL NO. 1

ASBESTOS CELL NO. 2

CELL W4

CELL W4

CELL W3

CELL W2

CELL W2

CELL W1

AREA E

CELL X

AREA C

AREA A

CODISPOSAL AREA

Scale House

Hammond Avenue

Hammond Avenue

Hess Road

Hess Road

Washburn Road

SG-4 SG-1 SG-5 SG-3 SG-2

MW-304B MW-318CR MW-318BR MW-320B

OW-101B OW-102B OW-102D OW-103B OW-104B OW-107B OW-108B OW-109B OW-110B OW-111B OW-115B OW-116B OW-117B OW-207B OW-208B OW-217B OW-218B OW-407B OW-408B

P-101A P-101C P-102A P-102C P-102E P-103A P-103C P-104A P-104C P-105A P-105C P-106AR P-106B P-106C P-107A P-107C P-108A P-108C P-109A P-109C P-110A P-110C P-111A P-111C P-113A P-113C P-114A P-114C P-207A P-208A P-212A OW-107BR

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Figure 2
Site Map of Water Level Only Monitoring Locations

Annual Water Quality Report
Black Hawk County Solid Waste Commision
Waterloo, Iowa

Jan. 2024

60746421

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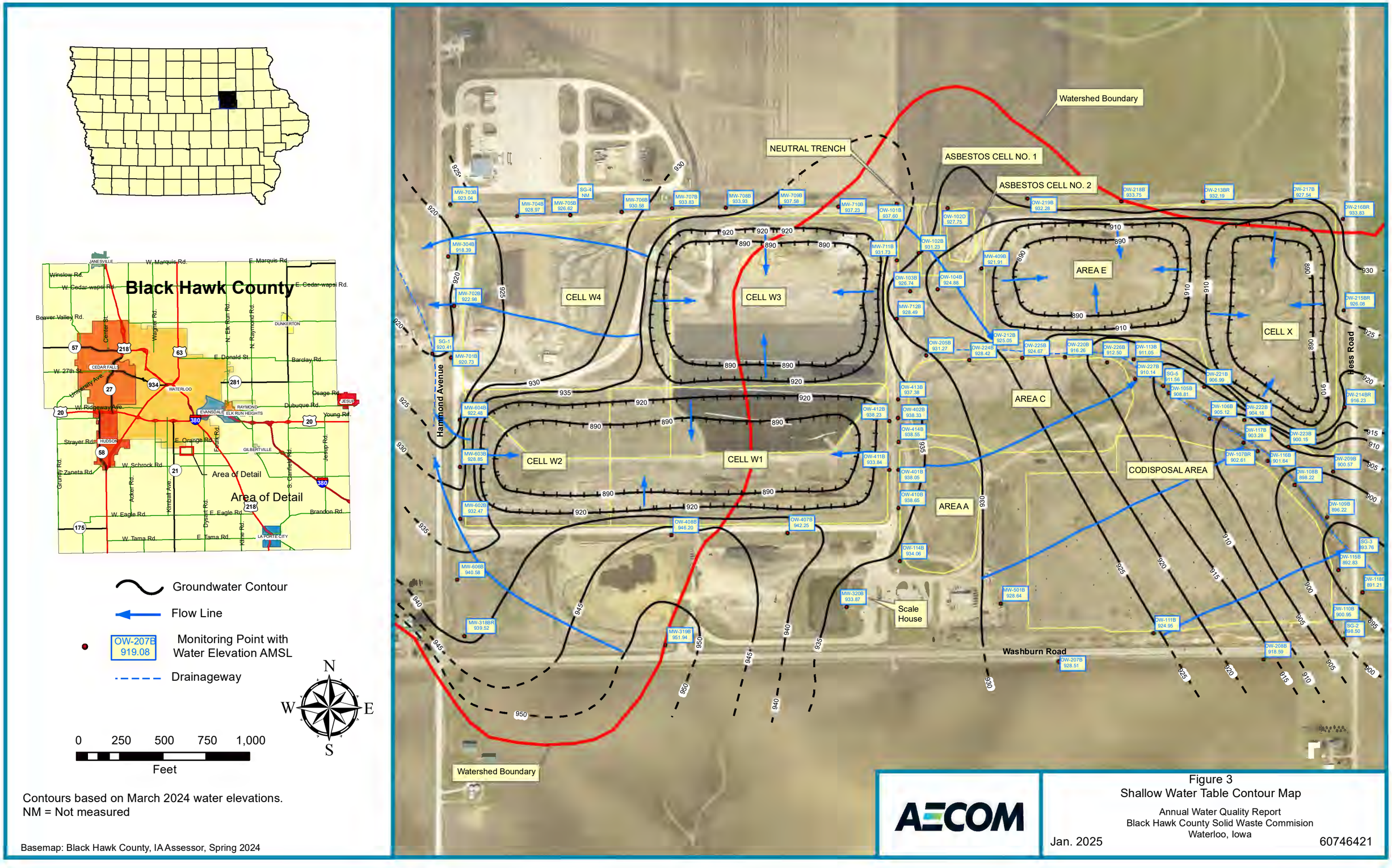


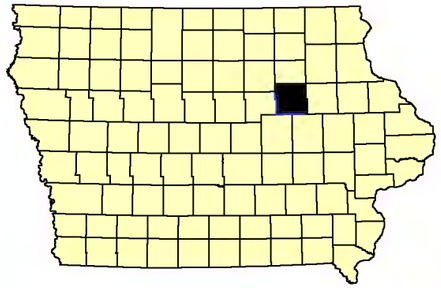
Figure 3
Shallow Water Table Contour Map

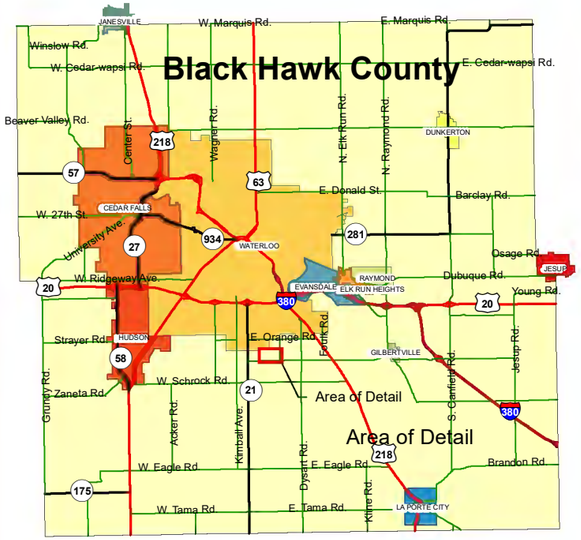
Annual Water Quality Report
Black Hawk County Solid Waste Commision
Waterloo, Iowa

Jan. 2025

60746421

\\na.aecomnet.com\LFS\AMER\Waterloo-USWAT1\DCS\Projects\TRN\60722882_2024_BH_SWMC_Eng_Services\400_Technical\435 Water Quality\01-IDNR\2024 AWQR\04-GIS Figures\Fig 03 Shallow_GW_for_DNR_AWQR.mxd





P-102A 892.85 Monitoring Point with Water Elevation AMSL

0 250 500 750 1,000

Feet

N

W E

S

Water elevations from March 2024
NM = Not measured

Basemap: Black Hawk County, IA Assessor, Spring 2024

AECOM

Figure 4
Intermediate Well Water Elevation Map

Annual Water Quality Report
Black Hawk County Solid Waste Commision
Waterloo, Iowa

Jan. 2025

60746421

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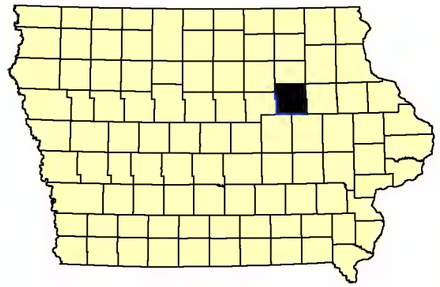
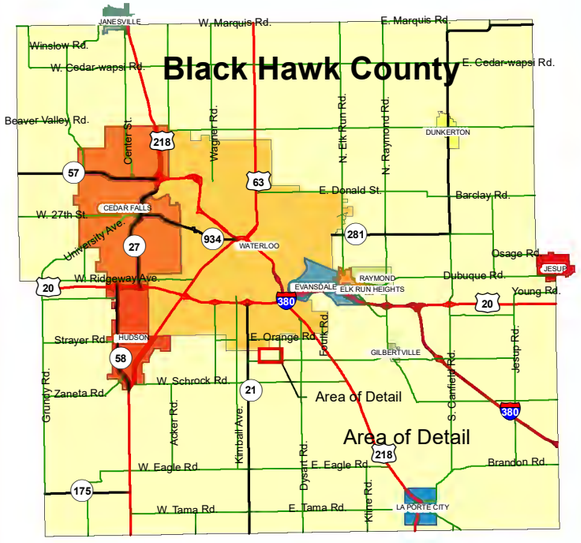




Groundwater Contours

Flow Line

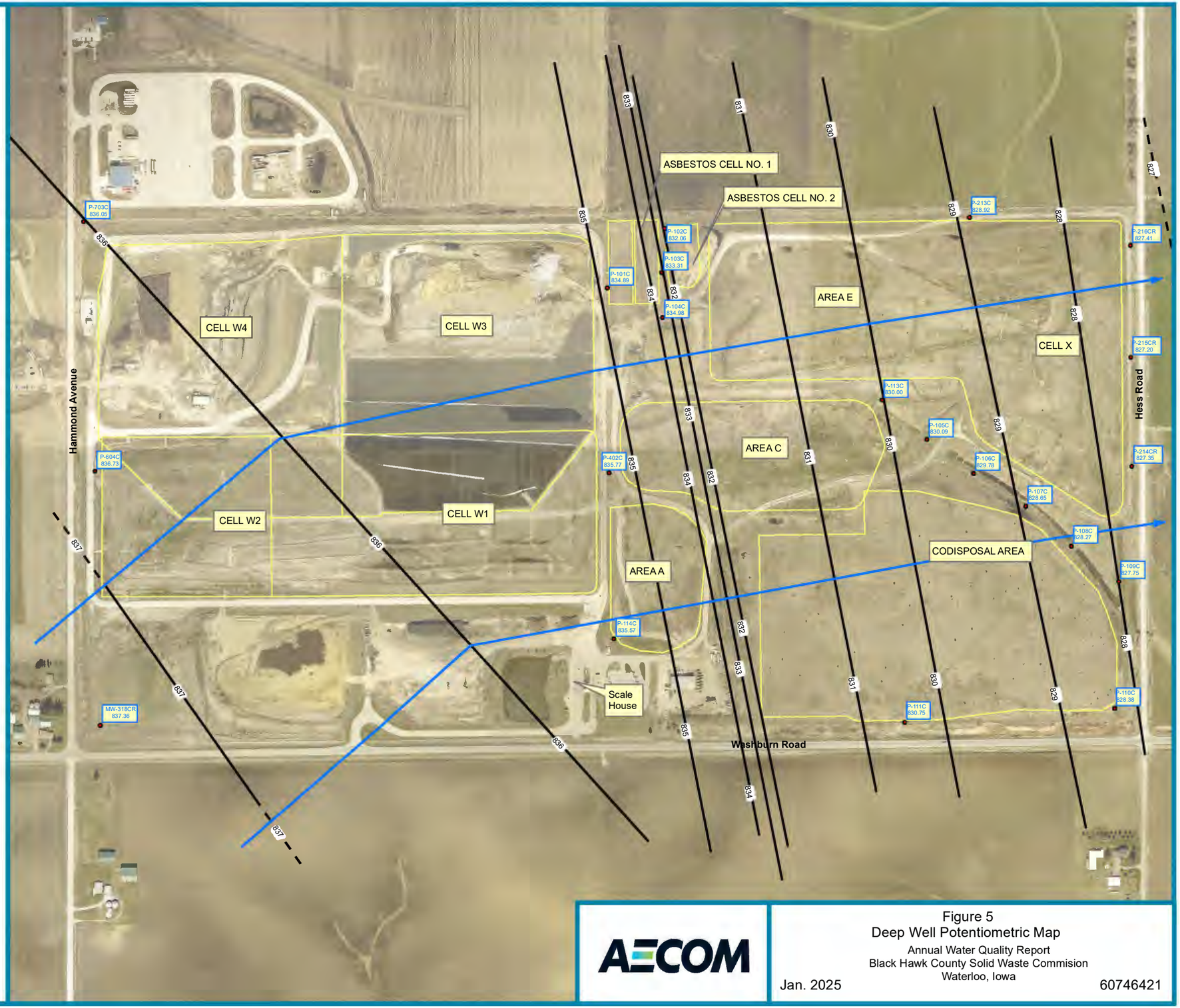
OW-207B
919.08
Monitoring Point with
Water Elevation AMSL

0 250 500 750 1,000
Feet

N
W E
S

Contours based on March 2024 water elevations.
NM = Not Measured

Basemap: Black Hawk County, IA Assessor, Spring 2024



AECOM

Figure 5
Deep Well Potentiometric Map
Annual Water Quality Report
Black Hawk County Solid Waste Commision
Waterloo, Iowa

Jan. 2025 60746421

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Tables

Table 1
Monitoring Program Summary Table
2024 Annual Water Quality Report
Black Hawk County Landfill
Permit No. 7-SDP-1-75P

Monitoring Well	Monitored Landfill Unit	Formation	Groundwater System	Gradient	Current Monitoring Program (January 2024)	Change for Next Sampling Event	Constituents With SSI	Constituents With SSL	Total Number of Sampling Events in Each Monitoring Program		
									Detection	Assessment	Corrective Action
HMSP Monitoring Points											
OW-101B	Cell W3	QAT	Water Table	Downgradient	Background	NC	None	None	7	--	--
OW-105B	Area C	QAT	Water Table	Downgradient	Detection	NC	None	None	13	--	--
OW-113B	Area E	QAT	Water Table	Downgradient	Assessment	NC	Cobalt	Cobalt	24	3	--
OW-114B	Area A	QWT	Water Table	Upgradient	Background	NC	None	None	22	7	--
OW-205B	Area C	QWT/QAT	Water Table	Downgradient	Corrective Action	NC	SSL	Arsenic	21	6	20
OW-209B	Cell X	QAT	Water Table	Downgradient	Detection	NC	None	None	24	3	--
OW-212B	Area E	QAT	Water Table	Downgradient	Assessment	NC	Cobalt	Cobalt	14	3	--
OW-213BR	Area E/Cell X	QAT	Water Table	Upgradient	Background	NC	None	None	13	--	--
OW-216BR	Cell X	QWT/QAT	Water Table	Upgradient	Background	NC	None	None	21	--	--
OW-217B	Cell X	QAT	Water Table	Upgradient	Background	NC	None	None	4	--	--
OW-218B	Area E	QAT	Water Table	Upgradient	Background	NC	None	None	4	--	--
OW-219B	Area E/Cell X	QAT	Water Table	Upgradient	Background	NC	None	None	12	--	--
OW-220B	Area C	QAT	Water Table	Downgradient	Corrective Action	NC	Arsenic, Barium, Benzene, Nickel	Arsenic, Benzene, Cobalt, Nickel	12	3	--
OW-221B	Cell X	QAT	Water Table	Downgradient	Assessment	NC	Arsenic, Barium, Benzene	Cobalt	12	3	--
OW-222B	Cell X	QAT	Water Table	Downgradient	Assessment	NC	None	None	12	3	--
OW-223B	Cell X	QAT	Water Table	Downgradient	Assessment	NC	None	None	12	3	--
OW-224B	Area C	QWT	Water Table	Downgradient	Corrective Action	NC	Barium, Cobalt, Nickel, 1,4-Dichlorobenzene, Benzene	Barium, Cobalt, Nickel	7	2	--
OW-225B	Area C	QWT	Water Table	Downgradient	Corrective Action	NC	Arsenic, Barium, Cobalt, Nickel, Benzene	Cobalt, Nickel	8	2	--
OW-226B	Area C	QWT	Water Table	Downgradient	Corrective Action	NC	Arsenic, Barium, Cobalt, Nickel, Benzene	Cobalt	8	2	--
OW-227B	Area C	QWT	Water Table	Downgradient	Corrective Action	NC	Arsenic, Barium, Chromium, Cobalt, Nickel, Benzene	Arsenic, Barium, Cobalt	8	2	--
MW-304B	Cell W4	QWT	Water Table	Downgradient	Background	NC	None	None	5	--	--
MW-319B	Cell W1/W2	QWT	Water Table	Upgradient	Background	NC	None	None	22	--	--
OW-401B	Area A	QI/QWT	Water Table	Downgradient	Corrective Action	NC	Barium, Benzene	Arsenic, Cobalt, beta-BHC	23	8	19
OW-402B	Area C	QI/QWT/QAT	Water Table	Downgradient	Corrective Action	NC	Barium, Cobalt, Nickel, Benzene, cis-1,2-Dichloroethylene, Vinyl Chloride	Cobalt, Nickel, Vinyl Chloride	22	8	20
MW-409B	Area E	QI/QWT	Water Table	Downgradient	Assessment	NC	Cobalt	Cobalt	23	8	--
OW-410B	Area A	QI/QWT/QAT	Water Table	Downgradient	Corrective Action	NC	Barium, Cobalt	Barium, Cobalt	--	--	15
OW-411B	Area A	QI/QWT/QAT	Water Table	Downgradient	Corrective Action	NC	SSL	Cobalt	--	--	15
OW-412B	Area C	QI/QWT/QAT	Water Table	Downgradient	Corrective Action	NC	SSL	Vinyl Chloride	--	--	15
OW-413B	Area C	QI/QWT/QAT	Water Table	Upgradient	Corrective Action	NC	None	None	19	0	15
OW-414B	Area A	QI/QWT/QAT	Water Table	Downgradient	Corrective Action	NC	SSL	Cobalt, Vinyl Chloride	--	--	15
MW-501B	Area A	QWT/QAT	Water Table	Downgradient	Detection	NC	None	None	23	1	--

Table 1
Monitoring Program Summary Table
2024 Annual Water Quality Report
Black Hawk County Landfill
Permit No. 7-SDP-1-75P

Monitoring Well	Monitored Landfill Unit	Formation	Groundwater System	Gradient	Current Monitoring Program (January 2024)	Change for Next Sampling Event	Constituents With SSI	Constituents With SSL	Total Number of Sampling Events in Each Monitoring Program		
									Detection	Assessment	Corrective Action
MW-602B	Cell W1/W2	QWT/QAT	Water Table	Downgradient	Detection	NC	None	None	23	--	--
MW-603B	Cell W1/W2	QWT/QAT	Water Table	Downgradient	Detection	NC	None	None	24	--	--
MW-604B	Cell W1/W2	QWT/QAT	Water Table	Downgradient	Detection	NC	None	None	24	--	--
MW-701B	Cell W4	QWT/QAT	Water Table	Downgradient	Background	NC	None	None	5	--	--
MW-702B	Cell W4	QWT/QAT	Water Table	Downgradient	Background	NC	None	None	5	--	--
MW-703B	Cell W4	QWT/QAT	Water Table	Downgradient	Background	NC	None	None	5	--	--
MW-704B	Cell W3/W4	QWT/QAT	Water Table	Upgradient	Background	NC	None	None	4	--	--
MW-705B	Cell W3/W4	QWT/QAT	Water Table	Upgradient	Background	NC	None	None	4	--	--
MW-706B	Cell W3/W4	QWT/QAT	Water Table	Upgradient	Background	NC	None	None	4	--	--
MW-707B	Cell W3/W4	QWT/QAT	Water Table	Upgradient	Background	NC	None	None	4	--	--
MW-708B	Cell W3/W4	QWT/QAT	Water Table	Upgradient	Background	NC	None	None	4	--	--
MW-709B	Cell W4	QWT/QAT	Water Table	Upgradient	Background	NC	None	None	9	--	--
MW-710B	Cell W3	QWT/QAT	Water Table	Upgradient	Background	NC	None	None	9	--	--
MW-711B	Cell W3	QWT/QAT	Water Table	Downgradient	Detection	NC	None	None	10	--	--
MW-712B	Cell W3	QWT/QAT	Water Table	Downgradient	Detection	NC	None	None	11	--	--
P-213C	Areas E; Cell W1, W2, W3, W4	Dcv	Uppermost Bedrock	Downgradient	Assessment	NC	Chromium	None	25	2	--
P-214CR	Areas A, C, E; Cell X, W1, W2, W3, W4	Dcv	Uppermost Bedrock	Downgradient	Detection	NC	None	None	25	4	--
P-215CR	Areas A, C, E; Cell X, W1, W2, W3, W4	Dcv	Uppermost Bedrock	Downgradient	Detection	NC	None	None	25	4	--
P-216CR	Areas A, C, E; Cell X, W1, W2, W3, W4	Dcv	Uppermost Bedrock	Downgradient	Detection	NC	None	None	24	4	--
MW-318CR	Cell W1/W2	Dcv	Uppermost Bedrock	Upgradient	Background	NC	None	None	17	--	--
P-604C	Areas A, C, E; Cell X, W1, W2, W3, W4	Dcv	Uppermost Bedrock	Upgradient	Background	NC	None	None	25	--	--
P-703C	Areas A, C, E; Cell X, W1, W2, W3, W4	Dcv	Uppermost Bedrock	Upgradient	Background	NC	None	None	8	--	--
Other Groundwater Monitoring Points											
OW-102B	Neutral Trench	QAT	Water Table	Downgradient	Groundwater Level	NC	None	Not Applicable	--	--	--
OW-102D	Neutral Trench	QAT	Water Table	Downgradient	Groundwater Level	NC	None	Not Applicable	--	--	--
OW-103B	Neutral Trench	QAT	Water Table	Downgradient	Groundwater Level	NC	None	Not Applicable	--	--	--
OW-104B	Neutral Trench	QAT	Water Table	Downgradient	Groundwater Level	NC	None	Not Applicable	--	--	--
OW-106B	Co-Disposal Area	QAT	Water Table	Downgradient	Groundwater Level	NC	None	Not Applicable	--	--	--
OW-107BR	Co-Disposal Area	QAT	Water Table	Downgradient	Groundwater Level	NC	None	Not Applicable	--	--	--
OW-108B	Co-Disposal Area	QWT/QAT	Water Table	Downgradient	Groundwater Level	NC	None	Not Applicable	--	--	--
OW-109B	Co-Disposal Area	QWT	Water Table	Downgradient	Groundwater Level	NC	None	Not Applicable	--	--	--
OW-110B	Co-Disposal Area	QWT/QAT	Water Table	Downgradient	Groundwater Level	NC	None	Not Applicable	--	--	--
OW-111B	Co-Disposal Area	QWT	Water Table	Downgradient	Groundwater Level	NC	None	Not Applicable	--	--	--
OW-115B	Co-Disposal Area	Qal	Water Table	Downgradient	Groundwater Level	NC	None	Not Applicable	--	--	--
OW-116B	Co-Disposal Area	QAT	Water Table	Downgradient	Groundwater Level	NC	None	Not Applicable	--	--	--
OW-117B	Co-Disposal Area	QAT	Water Table	Downgradient	Groundwater Level	NC	None	Not Applicable	--	--	--
OW-118B	Co-Disposal Area	Qal	Water Table	Downgradient	Groundwater Level	NC	None	Not Applicable			
OW-207B	Co-Disposal Area	QWT/QAT	Water Table	Downgradient	Groundwater Level	NC	None	Not Applicable	--	--	--
OW-208B	Co-Disposal Area	QWT/QAT	Water Table	Downgradient	Groundwater Level	NC	None	Not Applicable	--	--	--
OW-214BR	Cell X	QAT	Water Table	Upgradient	Groundwater Level	NC	None	Not Applicable	--	--	--
OW-215BR	Cell X	QAT	Water Table	Upgradient	Groundwater Level	MC	None	Not Applicable	--	--	--
MW-318BR	Cell W1/W2	QWT	Water Table	Upgradient	Groundwater Level	NC	None	Not Applicable	--	--	--
MW-320B	Cell W1/W2	QWT/QAT	Water Table	Upgradient	Groundwater Level	NC	None	Not Applicable	--	--	--
OW-407B	Cell W1/W2	QWT/QAT	Water Table	Upgradient	Groundwater Level	NC	None	Not Applicable	--	--	--

Table 1
Monitoring Program Summary Table
2024 Annual Water Quality Report
Black Hawk County Landfill
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Monitoring Well	Monitored Landfill Unit	Formation	Groundwater System	Gradient	Current Monitoring Program (January 2024)	Change for Next Sampling Event	Constituents With SSI	Constituents With SSL	Total Number of Sampling Events in Each Monitoring Program		
									Detection	Assessment	Corrective Action
OW-408B	Cell W1/W2	QWT	Water Table	Upgradient	Groundwater Level	NC	None	Not Applicable	--	--	--
MW-606B	Cell W1/W2	QWT/QAT	Water Table	Upgradient	Groundwater Level	NC	None	Not Applicable	--	--	--
P-101A	Neutral Trench	QAT	Intermediate	Downgradient	Groundwater Level	NC	None	Not Applicable	--	--	--
P-102A	Neutral Trench	QAT	Intermediate	Downgradient	Groundwater Level	NC	None	Not Applicable	--	--	--
P-102E	Neutral Trench	QAT	Intermediate	Downgradient	Groundwater Level	NC	None	Not Applicable	--	--	--
P-103A	Neutral Trench	QAT	Intermediate	Downgradient	Groundwater Level	NC	None	Not Applicable	--	--	--
P-104A	Neutral Trench	QAT	Intermediate	Downgradient	Groundwater Level	NC	None	Not Applicable	--	--	--
P-105A	Co-Disposal Area	QAT	Intermediate	Downgradient	Groundwater Level	NC	None	Not Applicable	--	--	--
P-106AR	Co-Disposal Area	QAT	Intermediate	Downgradient	Groundwater Level	NC	None	Not Applicable	--	--	--
P-107A	Co-Disposal Area	QAT	Intermediate	Downgradient	Groundwater Level	NC	None	Not Applicable	--	--	--
P-108A	Co-Disposal Area	QAT	Intermediate	Downgradient	Groundwater Level	NC	None	Not Applicable	--	--	--
P-109A	Co-Disposal Area	QAT	Intermediate	Downgradient	Groundwater Level	NC	None	Not Applicable	--	--	--
P-110A	Co-Disposal Area	QAT	Intermediate	Downgradient	Groundwater Level	NC	None	Not Applicable	--	--	--
P-111A	Co-Disposal Area	QAT	Intermediate	Downgradient	Groundwater Level	NC	None	Not Applicable	--	--	--
P-113A	Area E	QAT	Intermediate	Downgradient	Groundwater Level	NC	None	Not Applicable	--	--	--
P-114A	Co-Disposal Area	QAT	Intermediate	Upgradient	Groundwater Level	NC	None	Not Applicable	6	--	6
P-207A	Co-Disposal Area	QAT	Intermediate	Downgradient	Groundwater Level	NC	None	Not Applicable	--	--	--
P-208A	Co-Disposal Area	QAT	Intermediate	Downgradient	Groundwater Level	NC	None	Not Applicable	--	--	--
P-212A	Area E	QAT	Intermediate	Downgradient	Groundwater Level	NC	None	Not Applicable	--	--	--
P-402A	Area A	QAT	Intermediate	Upgradient	Groundwater Level	NC	None	Not Applicable	8	--	8
P-101C	Neutral Trench	Dcv	Uppermost Bedrock	Downgradient	Groundwater Level	NC	None	Not Applicable	--	--	--
P-102C	Neutral Trench	Dcv	Uppermost Bedrock	Downgradient	Groundwater Level	NC	None	Not Applicable	--	--	--
P-103C	Neutral Trench	Dcv	Uppermost Bedrock	Downgradient	Groundwater Level	NC	None	Not Applicable	--	--	--
P-104C	Neutral Trench	Dcv	Uppermost Bedrock	Downgradient	Groundwater Level	NC	None	Not Applicable	15	--	--
P-105C	Co-Disposal Area	Dcv	Uppermost Bedrock	Downgradient	Groundwater Level	NC	None	Not Applicable	2	--	--
P-106C	Co-Disposal Area	Dcv	Uppermost Bedrock	Downgradient	Groundwater Level	NC	None	Not Applicable	--	--	--
P-107C	Co-Disposal Area	Dcv	Uppermost Bedrock	Downgradient	Groundwater Level	NC	None	Not Applicable	--	--	--
P-108C	Co-Disposal Area	Dcv	Uppermost Bedrock	Downgradient	Groundwater Level	NC	None	Not Applicable	--	--	--
P-109C	Co-Disposal Area	Dcv	Uppermost Bedrock	Downgradient	Groundwater Level	NC	None	Not Applicable	--	--	--
P-110C	Co-Disposal Area	Dcv	Uppermost Bedrock	Downgradient	Groundwater Level	NC	None	Not Applicable	--	--	--
P-111C	Co-Disposal Area	Dcv	Uppermost Bedrock	Downgradient	Groundwater Level	NC	None	Not Applicable	--	--	--
P-113C	Cell X	Dcv	Uppermost Bedrock	Upgradient	Groundwater Level	NC	None	Not Applicable	4	--	--
P-114C	Co-Disposal Area	Dcv	Uppermost Bedrock	Upgradient	Groundwater Level	NC	None	Not Applicable	18	--	--
P-402C	Area A	Dcv	Uppermost Bedrock	Upgradient	Groundwater Level	NC	None	Not Applicable	8	--	8

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Monitoring Program Summary Table
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Black Hawk County Landfill
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									Detection	Assessment	Corrective Action
Groundwater Underdrains											
GUW1-1	Cell W1	Underdrain System	Water Table	Downgradient	Detection	Discharged to Leachate Collection System	Not Sampled due to access	Not Applicable	15	--	--
GUW2-1	Cell W2	Underdrain System	Water Table	Downgradient	Detection	Discharged to Leachate Collection System	Arsenic, Barium, Cobalt	Not Applicable	22	--	--
GUW3-1	Cell W3	Underdrain System	Water Table	Downgradient	Detection	Discharged to Leachate Collection System	Arsenic, Barium, Cobalt, Copper, Nickel, Thallium	Not Applicable	8	--	--
GUX-1/GUE-1	Cell X	Underdrain System	Water Table	Downgradient	Detection	Discharged to Leachate Collection System	Barium	Not Applicable	19	--	--
SW-1/GUE-2	Area E	Underdrain System	Water Table	Downgradient	Detection	Discharged to Leachate Collection System	Arsenic, Barium, Cobalt, Nickel, Benzene, Cis-1,2-Dichloroethylene	Not Applicable	20	--	--

Notes:
ACM = monitoring wells used for Assessment of Corrective Meassures
SSI = Statistically Significant Increase above background
Detection = Number (count) of sampling events since 2014 including resampling
Assessment = Number (count) of assessment sampling events since 2014
Corrective Action = Number (count) of corrective actions sampling events since 2014
SSL = Statistically Significant Level above groundwater protection standard
NC = No Change for next sampling event

Geological Unit Symbols:
Qal = Quaternary Alluvium
Ql = Quaternary Loess
QWT = Quaternary Pre-Illinoian Till Unit - Wolf Creek Formation
QAT = Quaternary Pre-Illinoian Till Unit - Alburnett Formation Unit A
Dcv= Devonian, Cedar Valley Formation Dolomite

Table 2
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	Recent Samples				Upcoming Sampling Dates and Constituents			Full Appendix II Sample Dates	
Monitoring Well	May/June 2024	Aug 2024	Oct/Nov 2024	Jan 2025	Spring 2025	Summer 2025	Fall 2025	Previously Collected	Next Event
OW-101B	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	--	--
OW-105B	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	--	--
OW-113B	Appendix I, TSS Sulfide	--	Appendix I, TSS Sulfide	--	Appendix I, TSS Sulfide	--	Appendix I, TSS Sulfide	10/1/2020, 11/9/2021, 11/3/2022	2027
OW-114B	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	5/18/2009, 3/16/2010, 3/18/2014, 8/27/2015, 10/11/2016, 9/27/2017, 9/20/2018, 9/30/2019, 10/1/2020, 3/26/2021	--
OW-205B	Appendix I, TSS, Sulfide, 4,4'-DDD, Endosulfan I	--	NS	--	Appendix I, TSS, Sulfide, 4,4'-DDD, Endosulfan I	--	Appendix I, TSS, Sulfide, 4,4'-DDD, Endosulfan I	12/18/2017, 9/24/2018, 10/3/2019, 10/1/2020, 11/1/2021, 11/8/2022	2027
OW-209B	Appendix I, TSS	--	Appendix I, TSS	--	Appendix II, TSS	--	Appendix I, TSS	6/1/2011, 5/1/2012, 7/1/2012, 12/1/2012, 2/1/2013, 4/1/2013, 3/1/2015, 8/1/2015, 9/1/2016, 10/1/2020	2025
OW-212B	Appendix I, TSS	TSS, Cobalt	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	10/1/2020, 11/9/2021, 11/8/2022	2027
OW-213BR	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	--	--
OW-216BR	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	--	--
OW-219B	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	--	--
OW-220B	Appendix I, TSS, 2,4-D, Silvex	--	Appendix I, TSS, 2,4-D, Silvex	--	Appendix I, TSS, 2,4-D, Silvex	--	Appendix I, TSS, 2,4-D, Silvex	10/1/2020; 10/27/2021; 11/3/2022	2027
OW-221B	Appendix I, TSS	--	Appendix I, TSS	Benzene, Cis-1,2-Dichloroethylene	Appendix I, TSS	--	Appendix I, TSS	10/1/2020; 10/26/2021; 10/26/2022	2027
OW-222B	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	10/1/2020; 10/26/2021; 10/27/2022	2027
OW-223B	Appendix I, TSS	--	Appendix I, TSS	TSS, Thallium	Appendix I, TSS	--	Appendix I, TSS	10/1/2020; 11/3/2021; 10/25/2022	2027
OW-224B	Appendix I, TSS	--	Appendix II, TSS	--	Appendix II, TSS	--	--	9/7/2023, 10/7/2024	2025
OW-225B	Appendix I, TSS	TSS, Arsenic	Appendix II, TSS	--	Appendix II, TSS	--	--	9/18/2023, 10/8/2024	2025
OW-226B	Appendix I, TSS Sulfide	TSS, Arsenic, Sulfide	Appendix II, TSS	--	Appendix II, TSS Sulfide	--	--	9/18/2023, 10/9/2024	2025
OW-227B	Appendix I, TSS Sulfide	Sulfide	Appendix II, TSS	--	Appendix II, TSS Sulfide	--	--	9/20/2023, 10/9/2024	2025
MW-319B	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	--	--
MW-320B	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	--	--
OW-401B	Appendix I, TSS, 2,4-D, Silvex, Sulfide, beta-BHC, delta BHC, Endosulfan sulfate, Endrin aldehyde	TSS, Arsenic	Appendix I, TSS, 2,4-D, Silvex, Sulfide, beta-BHC, delta BHC, Endosulfan sulfate, Endrin aldehyde	--	Appendix I, TSS, 2,4-D, Silvex, Sulfide, beta-BHC, delta BHC, Endosulfan sulfate, Endrin aldehyde	--	--	6/23/2011, 5/11/2012, 8/26/2015, 10/3/16, 9/29/2017, 9/20/2018, 10/03/2019, 10/01/2020, 11/9/2021, 11/9/2022	2027
OW-402B	Appendix I, TSS	--	Appendix I, TSS, 2,4-D, Silvex, Sulfide, beta-BHC, Endosulfan sulfate, 2,4,5-T, Bis(2-ethylhexyl)phthalate	--	Appendix I, TSS	--	--	6/23/2011, 5/11/2012, 8/26/15, 9/30/16, 9/18/17, 9/14/2018, 10/07/2019, 10/01/2020, 11/22/2021, 11/9/2022	2027
MW-409B	Appendix I, TSS	--	Appendix I, TSS	TSS, Arsenic	Appendix I, TSS	--	Appendix I, TSS	4/26/2013, 3/20/2014, 8/20/2015/, 9/27/2016, 9/11/2017, 9/11/2018, 9/23/2019, 11/10/2021, 11/9/2022	2027
OW-410B	Appendix I, TSS	--	--	--	Appendix I, TSS	--	--	--	--
OW-411B	Appendix I, TSS	--	--	--	Appendix I, TSS	--	--	--	--
OW-412B	Appendix I, TSS	--	--	--	Appendix I, TSS	--	--	--	--
OW-413B	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	--	--	--	--
OW-414B	Appendix I, TSS	--	--	--	Appendix I, TSS	--	--	--	--
MW-501B	Appendix I, TSS	--	Appendix I, TSS	--	Appendix II, TSS	--	Appendix I, TSS	9/22/2020	2025
MW-602B	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	--	--
MW-603B	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	--	--
MW-604B	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	--	--
MW-709B	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	--	--
MW-710B	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	--	--
MW-711B	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	--	--
MW-712B	Appendix I, TSS	TSS, Cobalt	Appendix I, TSS	TSS, Cobalt	Appendix I, TSS	--	Appendix I, TSS	--	--

Table 2
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	Recent Samples				Upcoming Sampling Dates and Constituents			Full Appendix II Sample Dates	
Monitoring Well	May/June 2024	Aug 2024	Oct/Nov 2024	Jan 2025	Spring 2025	Summer 2025	Fall 2025	Previously Collected	Next Event
GUE-1	NS	--	--	--	Appendix I, TSS	--	Appendix I, TSS	--	--
GUE-2	Appendix I, TSS	--	NS	--	Appendix I, TSS	--	Appendix I, TSS	--	--
GUW1-1	NS	--	NS	--	Appendix I, TSS	--	Appendix I, TSS	--	--
GUW2-1	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	--	--
GUW3-1	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	--	--
GUX-1	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	--	--
P-213C	Appendix II, TSS	--	Appendix I, TSS	TSS, Chromium	Appendix I, TSS	--	Appendix I, TSS	5/10/2022, 5/23/2024	2029
P-214CR	Appendix I, TSS	Appendix I, TSS	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	--	--
P-215CR	Appendix I, TSS	Appendix I, TSS	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	--	--
P-216CR	Appendix I, TSS	Appendix I, TSS	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	--	--
P-604C	Appendix I, TSS	Appendix I VOCs	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	--	--
P-703C	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	--	--
SW-5	--	--	--	--	Appendix I, TSS	--	--	--	--
SW-3	--	--	--	--	Appendix I, TSS	--	--	--	--

Notes:
Appendix I - IAC 567.113 Constituents for Detection Monitoring
Appendix II - IAC 567.113 List of Hazardous Inorganic and Organic Constituents
TSS - Total Suspended Solids
NS = No sample; pump failure

Table 3
Monitoring Well Maintenance and Performance Revaluation Schedule
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Compliance with:	Monitoring Calendar Years											
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
567 IAC 113.10(2)"f"(1) high and low water levels (add required frequency)	Completed	Completed	Completed	Completed	Completed	Completed	Completed	Completed	Completed	Completed	Completed	Scheduled
567 IAC 113.10(2)"f"(2) changes in the hydrologic setting and flow paths	Completed	Completed	Completed	Completed	Completed	Completed	Completed	Completed	Completed	Completed	Completed	Scheduled
567 IAC 113.10(2)"f"(3) well depths	Completed	Completed	Completed	Completed	Completed	Completed	Completed	Completed	Completed	Completed	Completed	Scheduled
567 IAC 113.10(2)"f"(4) well recharge rates and chemistry	Completed	--	Completed	--	30% Complete	60% Complete	Completed	Completed	Completed	Completed	Completed	Scheduled
Waste separation from ground water 113.6(2)i	Completed	Completed	Completed	Completed	Completed	Completed	Completed	Completed	Completed	Completed	Completed	Scheduled

Notes:

Analysis of well recharge rates using slug tests began in 2018 and completed in 2020.

Analysis of well recharge rates using flow during low-flow sampling and groundwater chemistry completed in 2023

Table 4
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Well	Top of casing	Top of Screen	Total Depth		Date of Measurements		Maximum Depth Discrepancy (ft)	Baseline Recharge (cm/s)/Date	Current Recharge Rate	
					March 2024	September 2024			(cm/s)/Date	% Change
P-101A	943.98	897.30	48.32	Groundwater Level (ft)	21.96	20.86	-3.96	3.90E-07	9.82E-07	152%
				Groundwater Elevation (Ft MSL)	922.02	923.12				
				Measured Well Depth (ft)	52.27	52.28		10/20/1986	7/31/2018	
				Submerged Screen	Y	Y				
OW-101B	946.50	924.18	33.00	Groundwater Level (ft)	8.90	8.52	-5.09	2.40E-06	6.63E-05	2663%
				Groundwater Elevation (Ft MSL)	937.60	937.98				
				Measured Well Depth (ft)	33.08	38.09		10/20/1986	9/7/2019	
				Submerged Screen	Y	Y				
P-101C	942.45	835.60	113.80	Groundwater Level (ft)	107.56	105.60	-3.95	NM	6.95E-04	NC
				Groundwater Elevation (Ft MSL)	834.89	836.85				
				Measured Well Depth (ft)	117.75	117.74		10/23/1986	9/7/2019	
				Submerged Screen	N	Y				
P-102A	950.71	885.50	71.00	Groundwater Level (ft)	58.20	57.66	-0.35	NM	2.40E-08	NC
				Groundwater Elevation (Ft MSL)	892.51	893.05				
				Measured Well Depth (ft)	71.34	71.35		10/15/1986	7/31/2018	
				Submerged Screen	Y	Y				
OW-102B	951.23	915.43	46.50	Groundwater Level (ft)	20.00	19.98	-0.06	8.40E-06	Scheduled for 2025	NC
				Groundwater Elevation (Ft MSL)	931.23	931.25				
				Measured Well Depth (ft)	46.56	46.56		10/15/1986		
				Submerged Screen	Y	Y				
P-102C	940.48	838.16	113.71	Groundwater Level (ft)	108.42	106.63	0.03	NM	3.88E-04	NC
				Groundwater Elevation (Ft MSL)	832.06	833.85				
				Measured Well Depth (ft)	113.68	113.70		10/23/1986	12/19/2018	
				Submerged Screen	N	N				
OW-102D	941.17	918.70	33.00	Groundwater Level (ft)	13.42	11.92	0.39	2.60E-05	1.53E-04	488%
				Groundwater Elevation (Ft MSL)	927.75	929.25				
				Measured Well Depth (ft)	32.61	32.84		3/23/1990	9/7/2019	
				Submerged Screen	Y	Y				
P-102E	940.56	884.67	61.50	Groundwater Level (ft)	10.30	10.91	0.12	NM	7.35E-05	NC
				Groundwater Elevation (Ft MSL)	930.26	929.65				
				Measured Well Depth (ft)	61.41	61.38		3/23/1990	9/7/2019	
				Submerged Screen	Y	Y				
P-103A	938.85	888.46	55.83	Groundwater Level (ft)	25.07	24.50	-0.19	3.00E-07	2.27E-08	-92%
				Groundwater Elevation (Ft MSL)	913.78	914.35				
				Measured Well Depth (ft)	56.00	56.02		10/20/1986	12/19/2018	
				Submerged Screen	Y	Y				
OW-103B	937.44	917.52	29.80	Groundwater Level (ft)	10.70	10.14	-0.90	1.10E-05	1.55E-06	-86%
				Groundwater Elevation (Ft MSL)	926.74	927.30				
				Measured Well Depth (ft)	30.69	30.70		10/20/1986	9/7/2019	
				Submerged Screen	Y	Y				

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Well	Top of casing	Top of Screen	Total Depth		Date of Measurements		Maximum Depth Discrepancy (ft)	Baseline Recharge (cm/s)/Date	Current Recharge Rate	
					March 2024	September 2024			(cm/s)/Date	% Change
P-103C	939.22	838.01	111.68	Groundwater Level (ft)	105.91	103.99	-0.16	<1.00E-3	5.54E-06	-99%
				Groundwater Elevation (Ft MSL)	833.31	835.23				
				Measured Well Depth (ft)	111.84	111.84		10/20/1986	9/7/2019	
				Submerged Screen	N	N				
P-104A	932.55	873.30	65.00	Groundwater Level (ft)	52.63	51.50	-0.57	NM	4.81E-07	NC
				Groundwater Elevation (Ft MSL)	879.92	881.05				
				Measured Well Depth (ft)	65.57	65.57		10/15/1986	4/17/2019	
				Submerged Screen	Y	Y				
OW-104B	933.23	914.04	28.84	Groundwater Level (ft)	8.35	9.24	-1.17	1.10E-05	1.36E-06	-88%
				Groundwater Elevation (Ft MSL)	924.88	923.99				
				Measured Well Depth (ft)	30.01	30.00		10/15/1986	12/19/2018	
				Submerged Screen	Y	Y				
P-104C	932.33	833.75	108.70	Groundwater Level (ft)	97.35	95.09	-0.80	<1.00E-3	1.94E-03	94%
				Groundwater Elevation (Ft MSL)	834.98	837.24				
				Measured Well Depth (ft)	109.49	109.50		10/15/1986	12/19/2018	
				Submerged Screen	Y	Y				
P-105A	926.77	883.67	48.24	Groundwater Level (ft)	19.20	19.73	-0.05	6.60E-06	2.78E-06	-58%
				Groundwater Elevation (Ft MSL)	907.57	907.04				
				Measured Well Depth (ft)	48.22	48.29		9/24/1986	7/31/2018	
				Submerged Screen	Y	Y				
OW-105B	925.58	901.96	34.37	Groundwater Level (ft)	16.77	17.40	-0.03	6.90E-06	2.79E-07	-96%
				Groundwater Elevation (Ft MSL)	908.81	908.18				
				Measured Well Depth (ft)	34.35	34.40		9/24/1986	9/7/2019	
				Submerged Screen	Y	Y				
P-105C	924.98	811.46	124.18	Groundwater Level (ft)	94.89	92.48	0.22	<1.00E-03	2.07E-06	-100%
				Groundwater Elevation (Ft MSL)	830.09	832.50				
				Measured Well Depth (ft)	123.96	124.19		9/24/1986	7/31/2018	
				Submerged Screen	Y	Y				
P-106AR	916.25	880.30	41.90	Groundwater Level (ft)	11.42	11.62	-0.21	4.75E-07	2.10E-08	-96%
				Groundwater Elevation (Ft MSL)	904.83	904.63				
				Measured Well Depth (ft)	42.05	42.11		10/16/2013	7/31/2018	
				Submerged Screen	Y	Y				
OW-106B	914.61	898.98	26.20	Groundwater Level (ft)	9.49	9.96	-0.13	1.90E-04	1.90E-03	900%
				Groundwater Elevation (Ft MSL)	905.12	904.65				
				Measured Well Depth (ft)	26.29	26.33		9/24/1986	9/7/2019	
				Submerged Screen	Y	Y				
P-106C	914.35	810.21	114.92	Groundwater Level (ft)	84.57	80.42	0.19	<1.00E-03	1.04E-02	940%
				Groundwater Elevation (Ft MSL)	829.78	833.93				
				Measured Well Depth (ft)	114.73	114.92		9/24/1986	9/7/2019	
				Submerged Screen	Y	Y				

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Well	Top of casing	Top of Screen	Total Depth		Date of Measurements		Maximum Depth Discrepancy (ft)	Baseline Recharge (cm/s)/Date	Current Recharge Rate	
					March 2024	September 2024			(cm/s)/Date	% Change
P-107A	910.60	843.30	73.61	Groundwater Level (ft)	73.45	73.54	0.11	NM 10/7/1986	NA	NC
				Groundwater Elevation (Ft MSL)	837.15	837.06				
				Measured Well Depth (ft)	73.50	73.60				
				Submerged Screen	N	N				
OW-107BR	910.99	900.50	20.50	Groundwater Level (ft)	8.38	8.52	0.55	1.42E-04 10/16/2013	9.87E-05 8/8/2019	-30%
				Groundwater Elevation (Ft MSL)	902.61	902.47				
				Measured Well Depth (ft)	19.95	19.97				
				Submerged Screen	Y	Y				
P-107C	910.70	810.30	110.79	Groundwater Level (ft)	82.05	79.28	0.23	<1.00E-03 10/7/1986	3.88E-02 9/7/2019	3780%
				Groundwater Elevation (Ft MSL)	828.65	831.42				
				Measured Well Depth (ft)	110.56	110.74				
				Submerged Screen	Y	Y				
P-108A	909.03	869.86	44.30	Groundwater Level (ft)	11.60	11.80	-0.30	4.90E-06 9/5/1986	4.66E-06 7/31/2018	-5%
				Groundwater Elevation (Ft MSL)	897.43	897.23				
				Measured Well Depth (ft)	44.59	44.60				
				Submerged Screen	Y	Y				
OW-108B	907.95	891.96	26.61	Groundwater Level (ft)	9.73	10.58	-0.19	2.70E-05 9/5/1986	9.97E-06 9/7/2019	-63%
				Groundwater Elevation (Ft MSL)	898.22	897.37				
				Measured Well Depth (ft)	26.80	26.80				
				Submerged Screen	Y	Y				
P-108C	908.41	816.62	102.22	Groundwater Level (ft)	80.14	77.19	0.03	<1.00E-03 9/5/1986	1.11E-02 9/7/2019	1010%
				Groundwater Elevation (Ft MSL)	828.27	831.22				
				Measured Well Depth (ft)	102.19	102.22				
				Submerged Screen	Y	Y				
P-109A	903.20	868.92	40.04	Groundwater Level (ft)	7.18	7.60	0.04	3.50E-06 9/5/1986	2.17E-06 12/19/2018	-38%
				Groundwater Elevation (Ft MSL)	896.02	895.60				
				Measured Well Depth (ft)	40.00	40.00				
				Submerged Screen	Y	Y				
OW-109B	902.65	890.79	22.56	Groundwater Level (ft)	6.43	6.96	0.01	1.50E-03 9/5/1986	Scheduled for 2025	NC
				Groundwater Elevation (Ft MSL)	896.22	895.69				
				Measured Well Depth (ft)	22.56	22.55				
				Submerged Screen	Y	Y				
P-109C	903.64	819.34	94.95	Groundwater Level (ft)	75.89	72.80	0.03	<1.00E-03 9/5/1986	Scheduled for 2025	NC
				Groundwater Elevation (Ft MSL)	827.75	830.84				
				Measured Well Depth (ft)	94.92	94.94				
				Submerged Screen	Y	Y				
P-110A	908.78	858.67	55.54	Groundwater Level (ft)	14.95	14.40	0.04	1.60E-06 9/11/1986	2.34E-08 12/19/2018	-99%
				Groundwater Elevation (Ft MSL)	893.83	894.38				
				Measured Well Depth (ft)	55.50	55.52				
				Submerged Screen	Y	Y				

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Well	Top of casing	Top of Screen	Total Depth		Date of Measurements		Maximum Depth Discrepancy (ft)	Baseline Recharge (cm/s)/Date	Current Recharge Rate	
					March 2024	September 2024			(cm/s)/Date	% Change
OW-110B	908.45	890.40	28.70	Groundwater Level (ft)	7.50	9.58	0.30	4.30E-06	2.24E-06	-48%
				Groundwater Elevation (Ft MSL)	900.95	898.87				
				Measured Well Depth (ft)	28.41	28.40		9/11/1986	9/7/2019	
				Submerged Screen	Y	Y				
P-110C	908.80	829.84	89.70	Groundwater Level (ft)	80.42	77.41	-0.03	<1.00E-03	2.79E-04	-72%
				Groundwater Elevation (Ft MSL)	828.38	831.39				
				Measured Well Depth (ft)	89.73	89.73		9/11/1986	9/7/2019	
				Submerged Screen	N	Y				
P-111A	945.02	877.95	72.80	Groundwater Level (ft)	47.35	46.10	-0.16	9.10E-04	8.25E-04	-9%
				Groundwater Elevation (Ft MSL)	897.67	898.92				
				Measured Well Depth (ft)	72.94	72.96		8/27/1986	7/31/2018	
				Submerged Screen	Y	Y				
OW-111B	945.50	930.62	25.50	Groundwater Level (ft)	20.55	19.04	-0.86	4.30E-05	9.99E-06	-77%
				Groundwater Elevation (Ft MSL)	924.95	926.46				
				Measured Well Depth (ft)	26.36	26.36		8/27/1986	9/7/2019	
				Submerged Screen	N	N				
P-111C	946.10	832.00	124.80	Groundwater Level (ft)	115.35	112.73	0.05	<1.00E-03	4.11E-02	4010%
				Groundwater Elevation (Ft MSL)	830.75	833.37				
				Measured Well Depth (ft)	124.76	124.75		8/27/1986	9/7/2019	
				Submerged Screen	N	Y				
P-113A	917.70	890.50	32.70	Groundwater Level (ft)	7.04	7.89	-0.42	7.20E-06	1.58E-06	-78%
				Groundwater Elevation (Ft MSL)	910.66	909.81				
				Measured Well Depth (ft)	33.09	33.12		10/20/1986	7/31/2018	
				Submerged Screen	Y	Y				
OW-113B	918.42	907.06	22.00	Groundwater Level (ft)	7.37	8.33	0.03	1.20E-04	4.02E-04	235%
				Groundwater Elevation (Ft MSL)	911.05	910.09				
				Measured Well Depth (ft)	21.97	22.00		10/20/1986	10/7/2020	
				Submerged Screen	Y	Y				
P-113C	918.55	819.56	109.70	Groundwater Level (ft)	88.55	98.13	0.13	<1.00E-03	2.59E-02	2490%
				Groundwater Elevation (Ft MSL)	830.00	820.42				
				Measured Well Depth (ft)	109.57	109.74		10/20/1986	10/7/2020	
				Submerged Screen	Y	Y				
P-114A	942.72	899.69	48.35	Groundwater Level (ft)	12.08	11.14	-0.09	8.90E-07	1.08E-07	-88%
				Groundwater Elevation (Ft MSL)	930.64	931.58				
				Measured Well Depth (ft)	48.39	48.44		9/11/1986	7/31/2018	
				Submerged Screen	Y	Y				
OW-114B	943.22	931.06	22.70	Groundwater Level (ft)	9.16	9.44	-0.14	5.70E-05	9.42E-05	65%
				Groundwater Elevation (Ft MSL)	934.06	933.78				
				Measured Well Depth (ft)	22.82	22.84		9/11/1986	7/31/2018	
				Submerged Screen	Y	Y				

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					March 2024	September 2024			(cm/s)/Date	% Change
P-114C	942.29	815.31	137.50	Groundwater Level (ft)	106.72	104.80	-0.20	<1.00E-03 9/11/1986	3.58E-03 7/31/2018	258%
				Groundwater Elevation (Ft MSL)	835.57	837.49				
				Measured Well Depth (ft)	137.45	137.70				
				Submerged Screen	Y	Y				
OW-115B	904.72	892.10	23.24	Groundwater Level (ft)	11.89	11.87	0.05	NM 7/31/2018	Scheduled for 2025	NC
				Groundwater Elevation (Ft MSL)	892.83	892.85				
				Measured Well Depth (ft)	23.19	23.20				
				Submerged Screen	Y	Y				
OW-116B	911.06	901.00	20.23	Groundwater Level (ft)	9.42	10.44	0.06	NM 7/31/2018	Scheduled for 2025	NC
				Groundwater Elevation (Ft MSL)	901.64	900.62				
				Measured Well Depth (ft)	20.17	20.20				
				Submerged Screen	Y	N				
OW-117B	913.51	900.40	23.26	Groundwater Level (ft)	10.23	10.52	0.07	NM 7/31/2018	Scheduled for 2025	NC
				Groundwater Elevation (Ft MSL)	903.28	902.99				
				Measured Well Depth (ft)	23.19	23.20				
				Submerged Screen	Y	Y				
OW-118B	900.59	890.49	21.10	Groundwater Level (ft)	9.36	9.41	-0.03	7.64E-03 12/5/2023	Scheduled for 2028	NC
				Groundwater Elevation (Ft MSL)	891.23	891.18				
				Measured Well Depth (ft)	21.08	21.13				
				Submerged Screen	N	N				
OW-205B	940.17	927.08	23.70	Groundwater Level (ft)	8.90	NM	0.09	2.50E-04 12/19/1990	1.23E-04 9/7/2019	-51%
				Groundwater Elevation (Ft MSL)	931.27	NM				
				Measured Well Depth (ft)	23.61	NM				
				Submerged Screen	Y	NM				
P-207A	936.10	873.63	67.80	Groundwater Level (ft)	41.90	39.62	-0.05	6.30E-07 12/20/1989	Scheduled for 2025	NC
				Groundwater Elevation (Ft MSL)	894.20	896.48				
				Measured Well Depth (ft)	67.78	67.85				
				Submerged Screen	Y	Y				
OW-207B	936.36	918.65	28.20	Groundwater Level (ft)	7.85	7.88	0.20	2.10E-05 12/20/1989	Scheduled for 2025	NC
				Groundwater Elevation (Ft MSL)	928.51	928.48				
				Measured Well Depth (ft)	28.09	28.00				
				Submerged Screen	Y	Y				
P-208A	928.63	879.02	55.20	Groundwater Level (ft)	30.84	29.80	0.10	2.10E-03 12/28/1989	Scheduled for 2025	NC
				Groundwater Elevation (Ft MSL)	897.79	898.83				
				Measured Well Depth (ft)	55.03	55.10				
				Submerged Screen	Y	Y				
OW-208B	929.00	914.45	25.20	Groundwater Level (ft)	10.41	9.48	-0.05	1.80E-05 12/28/1989	Scheduled for 2025	NC
				Groundwater Elevation (Ft MSL)	918.59	919.52				
				Measured Well Depth (ft)	25.22	25.25				
				Submerged Screen	Y	Y				

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					March 2024	September 2024			(cm/s)/Date	% Change
OW-209B	910.90	895.14	25.96	Groundwater Level (ft)	10.33	10.61	-0.37	4.80E-05 12/18/1989	Scheduled for 2025	NC
				Groundwater Elevation (Ft MSL)	900.57	900.29				
				Measured Well Depth (ft)	26.33	26.33				
				Submerged Screen	Y	Y				
P-212A	934.91	882.00	57.87	Groundwater Level (ft)	35.64	34.96	-0.13	NM 5/15/1992	3.90E-08 9/7/2019	NC
				Groundwater Elevation (Ft MSL)	899.27	899.95				
				Measured Well Depth (ft)	57.99	58.00				
				Submerged Screen	Y	Y				
OW-212B	935.24	924.23	21.60	Groundwater Level (ft)	10.19	11.80	0.60	NM 5/15/1992	5.67E-06 9/7/2019	NC
				Groundwater Elevation (Ft MSL)	925.05	923.44				
				Measured Well Depth (ft)	21.04	21.00				
				Submerged Screen	Y	N				
OW-213BR	945.32	932.10	23.25	Groundwater Level (ft)	13.13	12.35	0.05	NM 7/31/2018	7.66E-05 10/7/2020	NC
				Groundwater Elevation (Ft MSL)	932.19	932.97				
				Measured Well Depth (ft)	23.20	23.20				
				Submerged Screen	Y	Y				
P-213C	943.29	823.95	129.43	Groundwater Level (ft)	114.37	111.87	-0.92	NM 5/22/1992	2.33E-02 7/31/2018	NC
				Groundwater Elevation (Ft MSL)	828.92	831.42				
				Measured Well Depth (ft)	130.33	130.35				
				Submerged Screen	Y	Y				
OW-214BR	925.36	913.89	21.47	Groundwater Level (ft)	9.13	10.52	-0.27	NM 1/1/2023	Scheduled for 2025	NC
				Groundwater Elevation (Ft MSL)	916.23	914.84				
				Measured Well Depth (ft)	21.70	21.74				
				Submerged Screen	Y	Y				
P-214CR	924.65	826.17	108.48	Groundwater Level (ft)	97.30	94.20	-0.08	NM 1/1/2023	Scheduled for 2025	NC
				Groundwater Elevation (Ft MSL)	827.35	830.45				
				Measured Well Depth (ft)	108.43	108.56				
				Submerged Screen	Y	Y				
OW-215BR	935.64	924.13	21.51	Groundwater Level (ft)	9.56	10.35	-0.32	NM 1/1/2023	Scheduled for 2025	NC
				Groundwater Elevation (Ft MSL)	926.08	925.29				
				Measured Well Depth (ft)	21.83	21.80				
				Submerged Screen	Y	Y				
P-215CR	934.53	824.26	120.27	Groundwater Level (ft)	107.33	104.21	0.17	NM 1/1/2023	Scheduled for 2025	NC
				Groundwater Elevation (Ft MSL)	827.20	830.32				
				Measured Well Depth (ft)	120.10	120.10				
				Submerged Screen	Y	Y				
OW-216BR	943.03	931.66	21.37	Groundwater Level (ft)	9.20	9.34	-0.21	NM 1/1/2023	Scheduled for 2025	NC
				Groundwater Elevation (Ft MSL)	933.83	933.69				
				Measured Well Depth (ft)	21.58	21.57				
				Submerged Screen	Y	Y				

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					March 2024	September 2024			(cm/s)/Date	% Change
P-216CR	943.28	820.13	133.15	Groundwater Level (ft)	115.87	112.84	-0.57	NM 1/1/2023	Scheduled for 2025	NC
				Groundwater Elevation (Ft MSL)	827.41	830.44				
				Measured Well Depth (ft)	133.63	133.72				
				Submerged Screen	Y	Y				
OW-217B	942.44	929.90	23.24	Groundwater Level (ft)	14.90	12.13	0.04	NM 7/31/2018	1.36E-03 10/7/2020	NC
				Groundwater Elevation (Ft MSL)	927.54	930.31				
				Measured Well Depth (ft)	23.20	23.20				
				Submerged Screen	N	Y				
OW-218B	946.37	930.00	26.23	Groundwater Level (ft)	12.62	12.53	0.03	NM 7/31/2018	9.59E-05 10/7/2020	NC
				Groundwater Elevation (Ft MSL)	933.75	933.84				
				Measured Well Depth (ft)	26.20	26.20				
				Submerged Screen	Y	Y				
OW-219B	939.90	929.90	20.11	Groundwater Level (ft)	7.62	8.54	-0.09	NM 7/31/2018	6.12E-04 10/7/2020	NC
				Groundwater Elevation (Ft MSL)	932.28	931.36				
				Measured Well Depth (ft)	20.19	20.20				
				Submerged Screen	Y	Y				
OW-220B	931.15	918.00	23.24	Groundwater Level (ft)	14.89	14.94	-4.96	NM 7/31/2018	Scheduled for 2025	NC
				Groundwater Elevation (Ft MSL)	916.26	916.21				
				Measured Well Depth (ft)	23.17	28.20				
				Submerged Screen	N	N				
OW-221B	924.15	911.20	23.23	Groundwater Level (ft)	17.16	17.57	0.06	NM 7/31/2018	7.30E-06 10/7/2020	NC
				Groundwater Elevation (Ft MSL)	906.99	906.58				
				Measured Well Depth (ft)	23.17	23.20				
				Submerged Screen	N	N				
OW-222B	919.37	909.20	20.23	Groundwater Level (ft)	15.19	15.21	0.06	NM 7/31/2018	2.74E-06 10/7/2020	NC
				Groundwater Elevation (Ft MSL)	904.18	904.16				
				Measured Well Depth (ft)	20.17	20.20				
				Submerged Screen	N	N				
OW-223B	917.45	907.60	20.23	Groundwater Level (ft)	17.30	17.32	0.06	NM 7/31/2018	2.84E-06 10/7/2020	NC
				Groundwater Elevation (Ft MSL)	900.15	900.13				
				Measured Well Depth (ft)	20.17	20.20				
				Submerged Screen	N	N				
OW-224B	941.29	929.04	22.25	Groundwater Level (ft)	12.87	12.91	-0.08	NM 1/1/2023	Scheduled for 2025	NC
				Groundwater Elevation (Ft MSL)	928.42	928.38				
				Measured Well Depth (ft)	22.33	22.28				
				Submerged Screen	Y	Y				
OW-225B	936.36	924.93	21.43	Groundwater Level (ft)	11.69	11.82	-0.27	NM 1/1/2023	Scheduled for 2025	NC
				Groundwater Elevation (Ft MSL)	924.67	924.54				
				Measured Well Depth (ft)	21.68	21.70				
				Submerged Screen	Y	Y				

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Well	Top of casing	Top of Screen	Total Depth		Date of Measurements		Maximum Depth Discrepancy (ft)	Baseline Recharge (cm/s)/Date	Current Recharge Rate	
					March 2024	September 2024			(cm/s)/Date	% Change
OW-226B	924.97	913.41	21.56	Groundwater Level (ft)	12.47	12.74	0.14	NM 1/1/2023	Scheduled for 2025	NC
				Groundwater Elevation (Ft MSL)	912.50	912.23				
				Measured Well Depth (ft)	21.42	21.48				
				Submerged Screen	Y	Y				
OW-227B	919.96	908.44	21.52	Groundwater Level (ft)	9.82	10.42	-0.25	NM 1/1/2023	Scheduled for 2025	NC
				Groundwater Elevation (Ft MSL)	910.14	909.54				
				Measured Well Depth (ft)	21.74	21.77				
				Submerged Screen	Y	Y				
MW-304B	926.72	917.96	19.24	Groundwater Level (ft)	8.33	9.94	-0.52	1.00E-05 12/3/1996	Scheduled for 2025	NC
				Groundwater Elevation (Ft MSL)	918.39	916.78				
				Measured Well Depth (ft)	19.76	19.75				
				Submerged Screen	Y	N				
MW-318BR	952.77	943.10	19.97	Groundwater Level (ft)	13.25	9.37	0.62	2.20E-05 12/3/1996	Scheduled for 2025	NC
				Groundwater Elevation (Ft MSL)	939.52	943.40				
				Measured Well Depth (ft)	19.95	19.35				
				Submerged Screen	N	Y				
MW-318CR	952.82	814.43	143.55	Groundwater Level (ft)	115.46	114.09	NM	5.90E-04 12/3/1996	Scheduled for 2025	NC
				Groundwater Elevation (Ft MSL)	837.36	838.73				
				Measured Well Depth (ft)	NM	NM				
				Submerged Screen	Y	Y				
MW-319B	963.01	954.30	19.30	Groundwater Level (ft)	11.07	8.39	-0.45	5.10E-07 12/3/1996	3.39E-05 9/7/2019	6547%
				Groundwater Elevation (Ft MSL)	951.94	954.62				
				Measured Well Depth (ft)	19.71	19.75				
				Submerged Screen	N	Y				
MW-320B	939.78	930.70	19.37	Groundwater Level (ft)	5.91	6.20	-0.33	2.30E-05 12/3/1996	Scheduled for 2025	NC
				Groundwater Elevation (Ft MSL)	933.87	933.58				
				Measured Well Depth (ft)	19.68	19.70				
				Submerged Screen	Y	Y				
OW-401B	963.10	943.06	30.04	Groundwater Level (ft)	25.05	24.29	0.09	4.00E-07 5/14/2010	Scheduled for 2025	NC
				Groundwater Elevation (Ft MSL)	938.05	938.81				
				Measured Well Depth (ft)	29.95	30.00				
				Submerged Screen	N	N				
P-402A	955.27	906.01	54.26	Groundwater Level (ft)	18.33	18.28	-0.20	2.99E-06 11/16/2016	6.93E-07 9/7/2019	-77%
				Groundwater Elevation (Ft MSL)	936.94	936.99				
				Measured Well Depth (ft)	54.40	54.46				
				Submerged Screen	Y	Y				
OW-402B	954.89	939.64	25.25	Groundwater Level (ft)	16.56	16.44	0.12	9.60E-05 5/14/2010	2.63E-04 4/17/2019	174%
				Groundwater Elevation (Ft MSL)	938.33	938.45				
				Measured Well Depth (ft)	25.13	25.18				
				Submerged Screen	N	N				

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					March 2024	September 2024			(cm/s)/Date	% Change
P-402C	955.25	832.30	133.68	Groundwater Level (ft)	119.48	118.09	-0.22	6.89E-04	4.85E-04	-30%
				Groundwater Elevation (Ft MSL)	835.77	837.16				
				Measured Well Depth (ft)	133.70	133.90		11/16/2016	7/31/2018	
				Submerged Screen	Y	Y				
OW-407B	950.69	940.73	19.96	Groundwater Level (ft)	8.44	10.23	0.04	3.50E-05	3.12E-05	-11%
				Groundwater Elevation (Ft MSL)	942.25	940.46				
				Measured Well Depth (ft)	19.92	19.95		5/14/2010	9/7/2019	
				Submerged Screen	Y	N				
OW-408B	954.34	943.24	17.10	Groundwater Level (ft)	8.14	6.30	0.02	4.70E-04	4.48E-04	-5%
				Groundwater Elevation (Ft MSL)	946.20	948.04				
				Measured Well Depth (ft)	17.08	17.11		5/14/2010	9/7/2019	
				Submerged Screen	Y	Y				
MW-409B	942.80	927.16	25.64	Groundwater Level (ft)	20.89	20.46	0.24	7.70E-06	1.79E-05	132%
				Groundwater Elevation (Ft MSL)	921.91	922.34				
				Measured Well Depth (ft)	25.40	25.40		5/14/2010	9/7/2019	
				Submerged Screen	N	N				
OW-410B	952.85	937.90	24.89	Groundwater Level (ft)	14.20	14.04	-0.21	8.93E-06	5.26E-05	489%
				Groundwater Elevation (Ft MSL)	938.65	938.81				
				Measured Well Depth (ft)	25.07	25.10		11/16/2016	4/17/2019	
				Submerged Screen	Y	Y				
OW-411B	967.30	940.40	37.14	Groundwater Level (ft)	33.46	32.87	-0.20	3.91E-06	2.30E-06	-41%
				Groundwater Elevation (Ft MSL)	933.84	934.43				
				Measured Well Depth (ft)	37.29	37.34		11/16/2016	4/17/2019	
				Submerged Screen	N	N				
OW-412B	959.45	936.40	32.79	Groundwater Level (ft)	21.22	21.11	-0.21	4.12E-05	1.95E-04	373%
				Groundwater Elevation (Ft MSL)	938.23	938.34				
				Measured Well Depth (ft)	32.95	33.00		11/16/2016	4/17/2019	
				Submerged Screen	Y	Y				
OW-413B	948.60	937.00	21.36	Groundwater Level (ft)	11.22	11.31	-0.19	1.05E-02	2.44E-03	-77%
				Groundwater Elevation (Ft MSL)	937.38	937.29				
				Measured Well Depth (ft)	21.54	21.55		11/16/2016	4/17/2019	
				Submerged Screen	Y	Y				
OW-414B	962.40	940.40	31.89	Groundwater Level (ft)	23.85	23.55	-0.21	7.07E-04	3.66E-04	-48%
				Groundwater Elevation (Ft MSL)	938.55	938.85				
				Measured Well Depth (ft)	32.06	32.10		11/16/2016	4/17/2019	
				Submerged Screen	N	N				
MW-501B	938.10	916.87	31.23	Groundwater Level (ft)	9.46	9.16	-0.62	1.00E-02	1.63E-06	-100%
				Groundwater Elevation (Ft MSL)	928.64	928.94				
				Measured Well Depth (ft)	31.80	31.85		10/17/2013	9/7/2019	
				Submerged Screen	Y	Y				

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					March 2024	September 2024			(cm/s)/Date	% Change
MW-602B	944.95	932.30	22.65	Groundwater Level (ft)	12.48	13.34	-0.17	1.70E-05	1.24E-04	629%
				Groundwater Elevation (Ft MSL)	932.47	931.61				
				Measured Well Depth (ft)	22.82	22.80		11/11/2014	4/17/2019	
				Submerged Screen	Y	N				
MW-603B	940.42	920.80	29.62	Groundwater Level (ft)	11.57	11.68	0.45	1.06E-05	1.95E-05	84%
				Groundwater Elevation (Ft MSL)	928.85	928.74				
				Measured Well Depth (ft)	29.17	29.20		11/11/2014	4/17/2019	
				Submerged Screen	Y	Y				
MW-604B	934.80	917.20	27.60	Groundwater Level (ft)	12.32	12.59	0.05	2.57E-06	8.30E-07	-68%
				Groundwater Elevation (Ft MSL)	922.48	922.21				
				Measured Well Depth (ft)	27.57	27.55		11/12/2014	4/17/2019	
				Submerged Screen	Y	Y				
P-604C	934.71	818.00	121.71	Groundwater Level (ft)	97.98	95.82	3.39	2.50E-03	Scheduled for 2025	NC
				Groundwater Elevation (Ft MSL)	836.73	838.89				
				Measured Well Depth (ft)	118.33	118.32		11/13/2014		
				Submerged Screen	Y	Y				
MW-606B	947.18	935.21	21.47	Groundwater Level (ft)	6.60	6.38	-0.23	NM	Scheduled for 2025	NC
				Groundwater Elevation (Ft MSL)	940.58	940.80				
				Measured Well Depth (ft)	21.70	21.70		1/1/2023		
				Submerged Screen	Y	Y				
MW-701B	928.36	918.80	20.02	Groundwater Level (ft)	7.63	9.39	0.09	3.45E-04	Scheduled for 2026	0%
				Groundwater Elevation (Ft MSL)	920.73	918.97				
				Measured Well Depth (ft)	19.93	19.95		10/5/2021		
				Submerged Screen	Y	Y				
MW-702B	928.96	918.99	20.25	Groundwater Level (ft)	5.98	6.59	0.08	4.39E-06	Scheduled for 2026	0%
				Groundwater Elevation (Ft MSL)	922.98	922.37				
				Measured Well Depth (ft)	20.17	20.20		9/23/2021		
				Submerged Screen	Y	Y				
MW-703B	930.50	920.51	20.29	Groundwater Level (ft)	7.46	8.51	0.09	2.19E-03	Scheduled for 2026	0%
				Groundwater Elevation (Ft MSL)	923.04	921.99				
				Measured Well Depth (ft)	20.27	20.20		10/5/2021		
				Submerged Screen	Y	Y				
P-703C	930.31	819.52	121.14	Groundwater Level (ft)	94.24	92.42	-0.02	1.47E-02	Scheduled for 2026	0%
				Groundwater Elevation (Ft MSL)	836.07	837.89				
				Measured Well Depth (ft)	121.16	121.14		10/6/2021		
				Submerged Screen	Y	Y				
MW-704B	953.61	930.89	32.95	Groundwater Level (ft)	24.64	23.61	0.15	3.36E-06	Scheduled for 2026	0%
				Groundwater Elevation (Ft MSL)	928.97	930.00				
				Measured Well Depth (ft)	32.80	32.88		9/28/2021		
				Submerged Screen	N	N				

Table 4
Monitoring Well Maintenance and Performance Summary
2024 Annual Water Quality Report
Black Hawk county Landfill
Permit No. 7-SDP-1-75P

Well	Top of casing	Top of Screen	Total Depth		Date of Measurements		Maximum Depth Discrepancy (ft)	Baseline Recharge (cm/s)/Date	Current Recharge Rate	
					March 2024	September 2024			(cm/s)/Date	% Change
MW-705B	951.92	924.01	38.11	Groundwater Level (ft)	25.30	25.21	0.07	2.26E-06 10/6/2021	Scheduled for 2026	0%
				Groundwater Elevation (Ft MSL)	926.62	926.71				
				Measured Well Depth (ft)	38.04	38.06				
				Submerged Screen	Y	Y				
MW-706B	953.27	935.25	28.30	Groundwater Level (ft)	22.69	22.78	0.10	3.25E-06 9/29/2021	Scheduled for 2026	0%
				Groundwater Elevation (Ft MSL)	930.58	930.49				
				Measured Well Depth (ft)	28.20	28.25				
				Submerged Screen	N	N				
MW-707B	951.64	936.67	24.95	Groundwater Level (ft)	17.81	17.57	0.06	3.25E-06 9/27/2021	Scheduled for 2026	0%
				Groundwater Elevation (Ft MSL)	933.83	934.07				
				Measured Well Depth (ft)	24.89	24.90				
				Submerged Screen	N	N				
MW-708B	954.25	934.13	30.23	Groundwater Level (ft)	20.32	19.75	0.09	4.52E-05 10/6/2021	Scheduled for 2026	0%
				Groundwater Elevation (Ft MSL)	933.93	934.50				
				Measured Well Depth (ft)	30.14	30.16				
				Submerged Screen	N	Y				
MW-709B	957.32	940.32	27.33	Groundwater Level (ft)	19.74	19.18	4.10	3.25E-06 9/28/2021	Scheduled for 2026	0%
				Groundwater Elevation (Ft MSL)	937.58	938.14				
				Measured Well Depth (ft)	27.21	23.23				
				Submerged Screen	N	N				
MW-710B	955.19	937.15	28.00	Groundwater Level (ft)	17.96	17.91	0.16	1.76E-03 10/6/2021	Scheduled for 2026	0%
				Groundwater Elevation (Ft MSL)	937.23	937.28				
				Measured Well Depth (ft)	27.85	27.84				
				Submerged Screen	Y	Y				
MW-711B	942.91	931.10	23.50	Groundwater Level (ft)	11.18	11.00	-0.02	1.91E-02 10/6/2021	Scheduled for 2026	0%
				Groundwater Elevation (Ft MSL)	931.73	931.91				
				Measured Well Depth (ft)	23.51	23.52				
				Submerged Screen	Y	Y				
MW-712B	943.24	931.41	22.66	Groundwater Level (ft)	14.75	14.60	0.07	1.16E-05 9/23/2021	Scheduled for 2026	0%
				Groundwater Elevation (Ft MSL)	928.49	928.64				
				Measured Well Depth (ft)	22.59	22.59				
				Submerged Screen	N	N				

Notes:
NM = not measured
NC = no change

Table 5
Background and GWPS Summary Tables
2024 Annual Water Quality Report
Black Hawk County Landfill
Permit No. 7-SDP-1-75P

Site-wide Shallow Interwell Background/GWPS (MW-304B, MW-308B, MW-319B, MW-701B, MW-702B, MW-703B, MW-704B, MW-705B, MW-706B, MW-707B, MW-708B, MW-709B, MW-710B, OW-114B, OW-213BR, OW-216BR, OW-217B, OW-218B, OW-219B, OW-403B, OW-405B)

Constituent	Units	Samples	Detections	Min	Max	Mean[1]	Background Level	Statistical Test	GWPS	Source
Inorganics										
Antimony (Sb)	µg/l	184	13	<0.161	<2.76	<0.58	0.69	PL(NP)	6	MCL
Arsenic (As)	µg/l	181	18	<0.330	13.8	<0.750	4.18	PL(NP)	10	MCL
Barium (Ba)	µg/l	184	184	14.1	484	129.5440	484	PL(NP)	2,000	MCL
Beryllium (Be)	µg/l	181	3	<0.039	12.9	0.270	0.27	PL(NP)	4	MCL
Cadmium (Cd)	µg/l	183	33	<0.0351	12.2	0.1814	12.2	PL(NP)	5	MCL
Chromium (Cr)	µg/l	179	49	<0.355	2920	27.605	27	PL(NP)	100	MCL
Cobalt (Co)	µg/l	178	98	<0.035	43..1	1.3340	5.79	PL(P-LN)	2.1	SS
Copper (Cu)	µg/l	173	18	<0.485	55.8	2.555	11.5	PL(NP)	1,300	MCL
Lead (Pb)	µg/l	179	13	<0.0967	23.3	0.4020	1.48	PL(NP)	15	MCL
Mercury (Hg)	µg/l	7	0	<0.0710	<0.15	<0.1000	0.1	PL(NP)	2	MCL
Nickel (Ni)	µg/l	183	105	<1.130	722	24	56	PL(P-LN)	100	SS
Selenium (Se)	µg/l	172	8	<0.630	22.9	1.52	2.23	PL(NP)	50	MCL
Silver (Ag)	µg/l	183	6	<0.033	4.7	0.370	0.37	PL(NP)	100	SS
Thallium (Tl)	µg/l	180	6	<0.0255	13.2	0.260	0.26	PL(NP)	2	MCL
Vanadium (V)	µg/l	178	33	<0.255	97.5	1.70	2.59	PL(NP)	35	SS
Zinc (Zn)	µg/l	180	10	<2.00	310	12.09	28.4	PL(NP)	2,000	SS

Bedrock Interwell Background/GWPS (MW-318CR, P-604C, P-703C)

Contaminant	Units	Samples	Detections	Min	Max	Mean[1]	Background Level	Statistical Test	GWPS	Source
Inorganics										
Antimony (Sb)	µg/l	42	12	<0.185	<3.45	<0.58	1.81	PL(NP)	6	MCL
Arsenic (As)	µg/l	41	9	0.401	<6.04	<0.786	1.28	PL(NP)	10	MCL
Barium (Ba)	µg/l	43	43	14.7	722	81.62	722	PL(NP)	2,000	MCL
Beryllium (Be)	µg/l	42	1	<0.039	<1.35	<0.27	0.221	PL(NP)	4	MCL
Cadmium (Cd)	µg/l	43	1	<0.0351	<0.275	<0.077	0.099	PL(NP)	5	MCL
Chromium (Cr)	µg/l	42	25	<0.355	26.2	4.782	11.4034	PL(P-LN)	100	MCL
Cobalt (Co)	µg/l	41	19	<0.0274	2.5	.<0.340	2.5	PL(NP)	2.1	SS
Copper (Cu)	µg/l	42	8	<0.485	<9	<1.8	4.11	PL(NP)	1,300	MCL
Lead (Pb)	µg/l	40	7	<0.0967	2.06	<0.25	0.474	PL(NP)	15	MCL
Mercury (Hg)	µg/l	0	0	<0.025	<0.142	<0.0926	0.0926	PL(NP)	2	MCL
Nickel (Ni)	µg/l	42	23	0.675	95.2	8.910	13.9151	PL(P-LN)	100	SS
Selenium (Se)	µg/l	39	0	<0.630	<4.8	<1.00	0.96	PL(NP)	50	MCL
Silver (Ag)	µg/l	42	5	<0.033	<4.07	<0.370	1.33	PL(NP)	100	SS
Thallium (Tl)	µg/l	42	2	<0.0255	<1.56	<0.260	1.56	PL(NP)	2	MCL
Vanadium (V)	µg/l	41	12	<0.345	<5.5	<0.840	1.17	PL(NP)	35	SS
Zinc (Zn)	µg/l	38	1	<2.00	49.7	<10.00	10	PL(NP)	2,000	SS

Notes: Acronyms/Abbreviations:

RL = Reporting Limit
GWPS = Groundwater Protection Standard
PL = Prediction Limit
P = Parametric
NP = Non-Parametric
N = Normal
LN = Lognormal
NA = Not applicable
MCL = EPA Maximum Contaminant Level
SS = DNR Statewide Standard for a protected groundwater source
Background period for inorganics is fall 2014 through 2023.
Shaded Backround Level > IDNR GWPS

[1] = median RL based on nondetects

Table 6
Summary of Well/Detected Constituent Pairs with No Immediately Previous SSIs
2024 Annual Water Quality Report
Black Hawk County Landfill
Permit No. 7-SDP-1-75P

Well	Constituent	Units	GPS	Spring 2024	Summer 2024	Fall 2024	Winter 2025	Background Standard
Area A								
MW-501B	Barium	µg/L	2000	116	--	128	--	484 NPL
	Chromium	µg/L	100	7.57	--	4.04 J	--	27 NPL
	Nickel	µg/L	722	5.2	--	14	--	56 LnPL
Area C								
OW-105B	Barium	µg/L	2000	79.9	--	89	--	484 NPL
Area E/Cell X								
OW-113B	Arsenic	µg/L	10	2.19	--	1.52 J	--	4.18 NPL
	Barium	µg/L	2000	14.1	--	15.8	--	484 NPL
	Cobalt	µg/L	9.83	14.4*	--	12.6**	--	5.79 LnPL
	Nickel	µg/L	722	20.9	--	15.9	--	56 LnPL
OW-209B	Barium	µg/L	2000	55.3	--	39.3	--	484 NPL
	Nickel	µg/L	722	6.86	--	7.39	--	56 LnPL
OW-212B	Barium	µg/L	2000	27.5	--	22.8	--	484 NPL
	Cadmium	µg/L	5	0.59	--	0.247	--	12.2 NPL
	Cobalt	µg/L	9.83	11.9*	27.5**	20.6**	--	5.79 LnPL
	Copper	µg/L	1300	7.25	--	2.85 J	--	11.5 NPL
	Nickel	µg/L	722	44.9	--	42.4	--	56 LnPL
	Thallium	µg/L	2	0.572 J	--	1.24*	--	0.26 NPL
OW-221B	Arsenic	µg/L	10	10.6*	--	13.9**	--	4.18 NPL
	Barium	µg/L	2000	566*	--	575**	--	484 NPL
	Cobalt	µg/L	9.83	3.07	--	3.4	--	5.79 LnPL
	Acetone	µg/L	6300	131*	--	4.63 J	--	10 RL
	Benzene	µg/L	5	0.481 J	--	0.856*	0.596**	0.5 RL
	cis-1,2-Dichloroethylene	µg/L	70	0.349 J	--	1.29*	0.585 J	1 RL
OW-222B	Arsenic	µg/L	10	1.3 J	--	2.4	--	4.18 NPL
	Barium	µg/L	2000	116	--	154	--	484 NPL
	Cobalt	µg/L	9.83	8.11*	--	5.21	--	5.79 LnPL
	Copper	µg/L	1300	5.85	--	3.72 J	--	11.5 NPL
	Nickel	µg/L	722	15.9	--	3.66 J	--	56 LnPL
	Acetone	µg/L	6300	66.7*	--	3.73 J	--	10 RL
OW-223B	Barium	µg/L	2000	64.3	--	88	--	484 NPL
	Copper	µg/L	1300	5.94	--	2.54 J	--	11.5 NPL
	Nickel	µg/L	722	6.21	--	<2.1	--	56 LnPL
	Thallium	µg/L	2	<0.57	--	1.42*	<0.57	0.26 NPL
	Acetone	µg/L	6300	191*	--	<3.1	--	10 RL
MW-409B	Arsenic	µg/L	10	3.83	--	5.06*	2.82	4.18 NPL
	Barium	µg/L	2000	35.8	--	28.7	--	484 NPL
	Cobalt	µg/L	9.83	11.1*	--	7.88**	--	5.79 LnPL
	Copper	µg/L	1300	5	--	<1.8	--	11.5 NPL
	Nickel	µg/L	722	9.19	--	6.66	--	56 LnPL
Cells W1/W2								
MW-602B	Barium	µg/L	2000	104	--	109	--	484 NPL
	Cobalt	µg/L	9.83	2.85	--	1.99	--	5.79 LnPL
	Nickel	µg/L	722	9.51	--	27.5	--	56 LnPL
MW-603B	Barium	µg/L	2000	38.6	--	34.3	--	484 NPL
MW-604B	Barium	µg/L	2000	72.2	--	77.5	--	484 NPL
	Chromium	µg/L	100	8.25	--	3.42 J	--	27 NPL
	Nickel	µg/L	722	4.72 J	--	5.5	--	56 LnPL
Cell W3								
MW-709B	Barium	µg/L	2000	87.8	--	79.9	--	484 NPL
	Cobalt	µg/L	9.83	<0.17	--	0.586	--	5.79 LnPL
MW-710B	Barium	µg/L	2000	64.4	--	57.5	--	484 NPL
MW-711B	Barium	µg/L	2000	43.5	--	40.3	--	484 NPL
	Cobalt	µg/L	9.83	4.43	--	3.77	--	5.79 LnPL
	Nickel	µg/L	722	19.5	--	14.7	--	56 LnPL
MW-712B	Barium	µg/L	2000	63	--	68.1	--	484 NPL
	Cobalt	µg/L	9.83	6.02*	4.51	5.59	4.34	5.79 LnPL
	Nickel	µg/L	722	7.24	--	8.56	--	56 LnPL
Uppermost Aquifer Downgradient Bedrock Wells								
P-213C	Arsenic	µg/L	10	<0.53	--	2.68*	--	1.28 NPL
	Barium	µg/L	2000	8.72	--	9.32	--	722 NPL
	Chromium	µg/L	100	<1.2	--	36.4*	52.7**	11.4034 LnPL
	Cobalt	µg/L	9.83	3.25*	--	1.22	--	2.5 NPL
	Nickel	µg/L	722	9.6	--	4.4 J	--	13.9151 LnPL
P-214CR	Barium	µg/L	2000	130	121	106	--	722 NPL
P-215CR	Barium	µg/L	2000	72.3	25.7	18.8	--	722 NPL
	Cobalt	µg/L	9.83	0.484 J	0.914	1.05 J	--	2.5 NPL
P-216CR	Barium	µg/L	2000	26.8	24.8	52.1	--	722 NPL
	Cobalt	µg/L	9.83	0.403 J	0.857	1.11	--	2.5 NPL

All underdrain groundwater (GUW1-1, GUE-2, GUW2-1, GUW3-1, and GUX-1) is combined with leachate, sent to wastewater treatment plant and treated.

Notes:

* Current result is above background, if confirmed by next sample an SSI will be identified
** Confirmed SSI
N = Assumed to be naturally occurring
NPL = Nonparametric prediction limit
NS = No standard; insufficient background data to estimate PL/NPL
PL = Parametric prediction limit
RL = Reporting limit
-- = not sampled
Gray Shading = groundwater concentration > GPS

Table 7
Summary Table of Ongoing and Newly Identified SSIs
2024 Annual Water Quality Report
Black Hawk County Landfill
Permit No. 7-SDP-1-75P

Well	Parameter	Units	Spring 2024	August 2024	Fall 2024	Winter 2025	Total Number Sample Events (n)	Percent Nondetects	LCL	IDNR Statewide Standard	Upgradient Background Prediction Limit	Sample Dates		
												Initial Exceedance	2nd, 3rd, and 4th assessment samples	5th background sample
Area A - Refer to 2024 ACM Report														
Area C - Refer to 2024 ACM Report														
Area E														
OW-113B	Cobalt	µg/l	14.4	--	12.6	--	24	0.0	3.06	9.83	5.79 LnPL	9/4/2014	3/18/2015; 8/26/2015; 3/22/2016	9/14/2016
OW-212B	Cobalt	µg/l	11.9	27.5	20.6	--	14	0.0	3.69	9.83	5.79 LnPL	3/25/2020	9/17/2020; 3/29/2021; 6/21/2021	11/9/2021
MW-409B	Cobalt	µg/l	11.1	--	7.88	--	22	0.0	8.41	9.83	5.79 LnPL	8/20/2015	9/27/2016; 9/11/2017; 9/11/2018	9/23/2019
Cell X														
OW-221B	Arsenic	µg/l	10.6	--	13.9	--	12	33.3	1.77	10	4.18 NPL	3/24/2020	8/6/2020; 9/24/2020; 12/10/2020	3/17/2021
	Barium	µg/l	566	--	575	--	12	0.0	266	2000	484 NPL	3/24/2020	8/6/2020; 9/24/2020; 12/10/2020	3/17/2021
	Benzene	µg/l	0.481 J	--	0.856	0.596	13	7.7	0.616	5	0.5 RL	3/24/2020	8/6/2020; 9/24/2020; 12/10/2020	3/17/2021
Bedrock														
P-213C	Chromium	µg/l	<1.2	--	36.4	52.7	23	73.9	0.98	100	11.4034 LnPL	9/2/2014	3/12/2015; 9/2/2015; 3/21/2016	10/3/2016

All analytical results given in µg/L.
LnPL = lognormal prediction limit
NS = No statewide standard exists.
NT = No statistical test necessary.
NPL = Nonparametric prediction limit
PL = Parametric prediction limit
RL = Reporting limit
NA = Not applicable or not established.
GPS exceedances are in red font
Prediction limit exceedances shown on gray background.
Detections are in bold font
Estimated values are designated with a J
False positive rate for all comparisons to statewide standards is 1.0%.
Only 2024 data is presented here; refer to AWQR appendices for complete historical data used in the statistical tests.

60746421_2025_BH_SWMC_Eng_Services\400_Technical\435 Water Quality\01-IDNR\2024 AWQR\03-AWQR Tables/IDNR Table 7.xlsx

Table 8
Summary Table of Ongoing and Newly Identified SSLs
2024 Semi-Annual Water Quality Report
Black Hawk County Landfill
Permit No. 7-SDP-1-75P

Well	Parameter	Units	Spring 2024	Aug-24	Fall 2024	Total Number Sample Events (n)	Percent Nondetects	UCL	IDNR GWPS	Initial Exceedance	Consecutive Compliance Dates UCL < GWPS		
											1st Occurance	Most Recent	Duration
Area A - Refer to 2024 ACM Report													
Area C - Refer to 2024 ACM Report													
Area E													
OW-113B	Cobalt	µg/l	14.4	--	12.6	24	0.0	9.22	9.83	9/4/2014	2024	--	1 year
OW-212B	Cobalt	µg/l	11.9	27.5	20.6	14	0.0	18.80	9.83	3/25/2020	--	--	--
MW-409B	Cobalt	µg/l	11.1	--	7.88	22	0.0	13.95	9.83	8/20/2015	--	--	--
Cell X													
OW-221B	Arsenic	µg/l	10.6	--	13.9	12	33.3	7.94	10	3/24/2020	2022	2024	3 years*
	Barium	µg/l	566	--	575	12	0.0	616	2000	3/24/2020	2022	2024	3 years*
	Cobalt	µg/l	3.07	--	3.4	12	0.0	6.49	9.83	3/24/2020	2024	--	1 year
OW-222B	Cobalt	µg/l	8.11	--	5.21	12	0.0	9.37	9.83	3/24/2020	2024	--	1 year
OW-223B	Copper	µg/l	5.94	--	2.54 J	12	41.7	6.13	1300	3/24/2020	2022	2024	3 years*
Bedrock													
P-213C	Cobalt	µg/l	3.25	--	1.22	24	4.2	3.24	9.83	9/2/2014	2024	--	1 year

All analytical results given in µg/L.
NS = No statewide standard exists.
NT = No statistical test necessary.
NPL = Nonparametric prediction limit
PL = Parametric prediction limit
RL = Reporting limit
NA = Not applicable or not established.
GPS exceedances are in red font
Prediction limit exceedances shown on gray background.
Detections are in bold font
Estimated values are designated with a J
False positive rate for all comparisons to statewide standards is 1.0%.
Only 2024 data is presented here; refer to AWQR appendices for complete historical data used in the statistical tests.
* This well/contaminant pair has been compliant for 3 years and no longer has an SSL
60722882/400/435/01-IDNR/2024 AWQR/03-AWQR Tables/IDNR Table 8.xlsx

Table 9
Summary of Field Quality Control Samples
2024 Annual Water Quality Report
Black Hawk County Landfill
Permit No. 7-SDP-1-75P

Sampling Event	Sample Date	Eurofins Job ID	Trip Blank Lab Sample ID	Field Blank Lab Sample ID	Duplicate Lab Sample ID	Duplicate Sample Location
Apr-May 2024	4/23/2024	310-279694	310-279694-4	--	--	--
	4/24/2024	310-279790	310-279790-2	--	--	--
	4/30/2024	310-280147	310-280147-4	--	--	--
	5/1/2024	310-280300	310-280300-6	--	310-280300-4	MW-602B
	5/3/2024	310-280395	310-280395-3	--	--	--
	5/6/2024	310-280571	310-280571-6	310-280571-7	310-280571-5	OW-219B
	5/7/2024	310-280664	310-280664-3	--	--	--
	5/8/2024	310-280844	310-280844-4	--	--	--
	5/14/2024	310-281290	310-281290-7		310-281290-3	GUW2-1
	5/15/2024	310-281404	310-281404-5	--	--	--
	5/16/2024	310-281530	310-281530-3	310-281530-6	310-281530-7	MW-320B
	5/22/2024	310-281866	310-281866-7	--	--	--
	5/23/2024	310-282049	310-282049-2	310-282049-5	310-282049-7	OW-113B
Jul-Aug 2024	8/2/2024	310-287278	310-287278-2	--	--	--
	8/9/2024	310-287913	310-287913-6	310-287913-4	310-287913-5	P-215CR
Sep-Oct 24	9/25/2024	310-291397	310-291397-2	--	310-291397-4	P-216CR
	9/26/2024	310-291544	310-291544-3	--	--	--
	10/1/2024	310-291802	310-291802-4	--	--	--
	10/2/2024	310-291902	310-291902-5	--	310-291902-3	OW-209B
	10/4/2024	310-292086	310-292086-8	--	--	--
	10/7/2024	310-292200	310-292200-4	--	--	--
	10/8/2024	310-292343	310-292343-5	310-292343-4	310-292343-2	OW-223B
	10/9/2024	310-292482	310-292482-3	--	--	--
	10/15/2024	310-292919	310-292919-3	--	310-292919-5	OW-401B
	10/16/2024	310-293059	310-293059-3	--	--	--
	10/21/2024	310-293338	310-293338-3	--	--	--
	10/23/2024	310-293587	310-293587-4	--	--	--
	10/25/2024	310-293758	310-293758-5	310-293758-2	310-293758-4	MW-409B
	10/28/2024	310-293886	310-293886-3	--	--	--
	10/30/2024	310-294168	310-294168-2	--	--	--
Jan-25	1/9/2025	310-298510	310-298510-6	--	--	--

Notes:
EU - Eurofins
NS - Quality Sample Not Required; Field Blanks collected 1 in 20 samples; Field Duplicates collected 1 in 10 samples

Table 10
Summary of Field Duplicate Detections
2024 Annual Water Quality Report
Black Hawk County Sanitary Landfill
Permit No. 7-SDP-1-75P

Sample Name	Lab Sample ID	Sample Date	Analyte	Result	DL	RL	Units	Qualifier	Sample Name	Lab Sample ID	Sample Date	Analyte	Result	DL	RL	Units	Qualifier	% Difference
Dup #1 20240501 MW-602B	310-280300-4	5/1/2024	Barium	103	0.66	2	ug/L		MW-602B	310-280300-3	5/1/2024	Barium	104	0.66	2	ug/L		0.97
Dup #1 20240501 MW-602B	310-280300-4	5/1/2024	Cobalt	2.74	0.17	0.5	ug/L		MW-602B	310-280300-3	5/1/2024	Cobalt	2.85	0.17	0.5	ug/L		3.94
Dup #1 20240501 MW-602B	310-280300-4	5/1/2024	Nickel	9.16	2.1	5	ug/L		MW-602B	310-280300-3	5/1/2024	Nickel	9.51	2.1	5	ug/L		3.75
Dup #1 20240501 MW-602B	310-280300-4	5/1/2024	Total Suspended Solids	3.13	1.39	1.88	mg/L		MW-602B	310-280300-3	5/1/2024	Total Suspended Solids	1.75	1.39	1.88	mg/L	J	56.56
Dup #2 20240506 OW-219B	310-280571-5	5/6/2024	Barium	29.3	0.66	2	ug/L		OW-219B	310-280571-4	5/6/2024	Barium	27.5	0.66	2	ug/L		6.34
Dup #2 20240506 OW-219B	310-280571-5	5/6/2024	Cadmium	0.124	0.1	0.2	ug/L	J	OW-219B	310-280571-4	5/6/2024	Cadmium	0.106	0.1	0.2	ug/L	J	15.65
Dup #2 20240506 OW-219B	310-280571-5	5/6/2024	Chromium	2.69	1.2	5	ug/L	J	OW-219B	310-280571-4	5/6/2024	Chromium	2.58	1.2	5	ug/L	J	4.17
Dup #2 20240506 OW-219B	310-280571-5	5/6/2024	Cobalt	0.454	0.17	0.5	ug/L	J	OW-219B	310-280571-4	5/6/2024	Cobalt	0.528	0.17	0.5	ug/L		15.07
Dup #2 20240506 OW-219B	310-280571-5	5/6/2024	Nickel	2.55	2.1	5	ug/L	J	OW-219B	310-280571-4	5/6/2024	Nickel	2.27	2.1	5	ug/L	J	11.62
Dup #2 20240506 OW-219B	310-280571-5	5/6/2024	Total Suspended Solids	5.75	1.39	1.88	mg/L		OW-219B	310-280571-4	5/6/2024	Total Suspended Solids	3.87	1.39	1.88	mg/L		39.09
Dup #3 20240514 GUW2-1	310-281290-3	5/14/2024	Arsenic	10.4	0.53	2	ug/L		GUW2-1	310-281290-2	5/14/2024	Arsenic	10.2	0.53	2	ug/L		1.94
Dup #3 20240514 GUW2-1	310-281290-3	5/14/2024	Barium	247	0.66	2	ug/L		GUW2-1	310-281290-2	5/14/2024	Barium	246	0.66	2	ug/L		0.41
Dup #3 20240514 GUW2-1	310-281290-3	5/14/2024	Cobalt	2.11	0.17	0.5	ug/L		GUW2-1	310-281290-2	5/14/2024	Cobalt	2.08	0.17	0.5	ug/L		1.43
Dup #3 20240514 GUW2-1	310-281290-3	5/14/2024	Total Suspended Solids	26.5	5.55	7.5	mg/L		GUW2-1	310-281290-2	5/14/2024	Total Suspended Solids	25	5.55	7.5	mg/L		5.83
Dup #3 20240514 GUW2-1	310-281290-3	5/14/2024	Vinyl chloride	0.224	0.18	1	ug/L	J	GUW2-1	310-281290-2	5/14/2024	Vinyl chloride	<0.18	0.18	1	ug/L		21.78
Dup #4 20240516 MW-320B	310-281530-7	5/16/2024	Barium	236	0.66	2	ug/L		MW-320B	310-281530-5	5/16/2024	Barium	235	0.66	2	ug/L		0.42
Dup #4 20240516 MW-320B	310-281530-7	5/16/2024	Chromium	91.6	1.2	5	ug/L		MW-320B	310-281530-5	5/16/2024	Chromium	83.3	1.2	5	ug/L		9.49
Dup #4 20240516 MW-320B	310-281530-7	5/16/2024	Cobalt	0.711	0.17	0.5	ug/L		MW-320B	310-281530-5	5/16/2024	Cobalt	0.635	0.17	0.5	ug/L		11.29
Dup #4 20240516 MW-320B	310-281530-7	5/16/2024	Copper	2.49	1.8	5	ug/L	J	MW-320B	310-281530-5	5/16/2024	Copper	2.38	1.8	5	ug/L	J	4.52
Dup #4 20240516 MW-320B	310-281530-7	5/16/2024	Nickel	33.4	2.1	5	ug/L		MW-320B	310-281530-5	5/16/2024	Nickel	31.6	2.1	5	ug/L		5.54
Dup #4 20240516 MW-320B	310-281530-7	5/16/2024	Total Suspended Solids	2	1.39	1.88	mg/L		MW-320B	310-281530-5	5/16/2024	Total Suspended Solids	5.13	1.39	1.88	mg/L		87.80
Dup #4 20240516 MW-320B	310-281530-7	5/16/2024	Vanadium	1.18	1.1	5	ug/L	J	MW-320B	310-281530-5	5/16/2024	Vanadium	1.1	1.1	5	ug/L	J	7.02
Dup #4 20240516 MW-320B	310-281530-7	5/16/2024	Xylenes	<0.4	0.4	3	ug/L		MW-320B	310-281530-5	5/16/2024	Xylenes	0.404	0.4	3	ug/L	J	1.00
Dup #5 20240523 OW-113B	310-282049-7	5/23/2024	Arsenic	2.11	0.53	2	ug/L		OW-113B	310-282049-6	5/23/2024	Arsenic	2.19	0.53	2	ug/L		3.72
Dup #5 20240523 OW-113B	310-282049-7	5/23/2024	Barium	13.5	0.66	2	ug/L		OW-113B	310-282049-6	5/23/2024	Barium	14.1	0.66	2	ug/L		4.35
Dup #5 20240523 OW-113B	310-282049-7	5/23/2024	Chromium	21	1.2	5	ug/L		OW-113B	310-282049-6	5/23/2024	Chromium	4.1	1.2	5	ug/L	J	134.66
Dup #5 20240523 OW-113B	310-282049-7	5/23/2024	Cobalt	14.3	0.17	0.5	ug/L		OW-113B	310-282049-6	5/23/2024	Cobalt	14.4	0.17	0.5	ug/L		0.70
Dup #5 20240523 OW-113B	310-282049-7	5/23/2024	Nickel	27.8	2.1	5	ug/L		OW-113B	310-282049-6	5/23/2024	Nickel	20.9	2.1	5	ug/L		28.34
Dup #5 20240523 OW-113B	310-282049-7	5/23/2024	Total Suspended Solids	16.3	3.7	5	mg/L		OW-113B	310-282049-6	5/23/2024	Total Suspended Solids	33	5.55	7.5	mg/L		67.75
Dup #1 20240809 P-215CR	310-287913-5	8/9/2024	Barium	25.6	0.66	2	ug/L		P-215CR	310-287913-2	8/9/2024	Barium	25.7	0.66	2	ug/L		0.39
Dup #1 20240809 P-215CR	310-287913-5	8/9/2024	Cobalt	0.874	0.17	0.5	ug/L		P-215CR	310-287913-2	8/9/2024	Cobalt	0.914	0.17	0.5	ug/L		4.47
Dup #1 20240809 P-215CR	310-287913-5	8/9/2024	Thallium	<0.57	0.57	1	ug/L		P-215CR	310-287913-2	8/9/2024	Thallium	0.635	0.57	1	ug/L	J	10.79
Dup #1 20240809 P-215CR	310-287913-5	8/9/2024	Total Suspended Solids	8.13	1.39	1.88	mg/L		P-215CR	310-287913-2	8/9/2024	Total Suspended Solids	9	1.39	1.88	mg/L		10.16
Dup #1 20240925 P-216CR	310-291397-4	9/25/2024	Barium	52.8	0.66	2	ug/L		P-216CR	310-291397-3	9/25/2024	Barium	52.1	0.66	2	ug/L		1.33
Dup #1 20240925 P-216CR	310-291397-4	9/25/2024	Cobalt	1.1	0.17	0.5	ug/L		P-216CR	310-291397-3	9/25/2024	Cobalt	1.11	0.17	0.5	ug/L		0.90
Dup #1 20240925 P-216CR	310-291397-4	9/25/2024	Copper	2.83	1.8	5	ug/L	J	P-216CR	310-291397-3	9/25/2024	Copper	2.4	1.8	5	ug/L	J	16.44
Dup #1 20240925 P-216CR	310-291397-4	9/25/2024	Lead	0.379	0.26	0.5	ug/L	J	P-216CR	310-291397-3	9/25/2024	Lead	0.307	0.26	0.5	ug/L	J	20.99
Dup #1 20240925 P-216CR	310-291397-4	9/25/2024	Nickel	2.91	2.1	5	ug/L	J	P-216CR	310-291397-3	9/25/2024	Nickel	2.96	2.1	5	ug/L	J	1.70
Dup #1 20240925 P-216CR	310-291397-4	9/25/2024	Total Suspended Solids	41.3	1.39	1.88	mg/L		P-216CR	310-291397-3	9/25/2024	Total Suspended Solids	33	1.39	1.88	mg/L		22.34
Dup #2 20241002 OW-209B	310-291902-3	10/2/2024	Barium	39.9	0.66	2	ug/L		OW-209B	310-291902-2	10/2/2024	Barium	39.3	0.66	2	ug/L		1.52
Dup #2 20241002 OW-209B	310-291902-3	10/2/2024	Copper	3.3	1.8	5	ug/L	J	OW-209B	310-291902-2	10/2/2024	Copper	3.13	1.8	5	ug/L	J	5.29
Dup #2 20241002 OW-209B	310-291902-3	10/2/2024	Nickel	7.71	2.1	5	ug/L		OW-209B	310-291902-2	10/2/2024	Nickel	7.39	2.1	5	ug/L		4.24
Dup #2 20241002 OW-209B	310-291902-3	10/2/2024	Total Suspended Solids	2	1.39	1.88	mg/L		OW-209B	310-291902-2	10/2/2024	Total Suspended Solids	1.88	1.39	1.88	mg/L		6.19
Dup #2 20241008 OW-223B	310-292343-2	10/8/2024	Barium	88.1	0.66	2	ug/L		OW-223B	310-292343-1	10/8/2024	Barium	88	0.66	2	ug/L		0.11
Dup #2 20241008 OW-223B	310-292343-2	10/8/2024	Chromium	4.46	1.2	5	ug/L	J B	OW-223B	310-292343-1	10/8/2024	Chromium	3.76	1.2	5	ug/L	J B	17.03
Dup #2 20241008 OW-223B	310-292343-2	10/8/2024	Copper	2.62	1.8	5	ug/L	J	OW-223B	310-292343-1	10/8/2024	Copper	2.54	1.8	5	ug/L	J	3.10
Dup #2 20241008 OW-223B	310-292343-2	10/8/2024	Thallium	0.828	0.57	1	ug/L	J	OW-223B	310-292343-1	10/8/2024	Thallium	1.42	0.57	1	ug/L		52.67

Table 10
Summary of Field Duplicate Detections
2024 Annual Water Quality Report
Black Hawk County Sanitary Landfill
Permit No. 7-SDP-1-75P

Sample Name	Lab Sample ID	Sample Date	Analyte	Result	DL	RL	Units	Qualifier	Sample Name	Lab Sample ID	Sample Date	Analyte	Result	DL	RL	Units	Qualifier	% Difference
Dup #3 20241015 OW-401B	310-292919-5	10/15/2024	1,4-Dichlorobenzene	1.09	0.23	1	ug/L		OW-401B	310-292919-4	10/15/2024	1,4-Dichlorobenzene	<0.23	0.23	1	ug/L		130.30
Dup #3 20241015 OW-401B	310-292919-5	10/15/2024	Acetone	9.16	3.1	10	ug/L	J	OW-401B	310-292919-4	10/15/2024	Acetone	8.8	3.1	10	ug/L	J	4.01
Dup #3 20241015 OW-401B	310-292919-5	10/15/2024	Arsenic	8.88	0.53	2	ug/L		OW-401B	310-292919-4	10/15/2024	Arsenic	8.77	0.53	2	ug/L		1.25
Dup #3 20241015 OW-401B	310-292919-5	10/15/2024	Barium	1700	0.66	2	ug/L		OW-401B	310-292919-4	10/15/2024	Barium	1760	0.66	2	ug/L		3.47
Dup #3 20241015 OW-401B	310-292919-5	10/15/2024	Benzene	3.39	0.22	0.5	ug/L		OW-401B	310-292919-4	10/15/2024	Benzene	3.46	0.22	0.5	ug/L		2.04
Dup #3 20241015 OW-401B	310-292919-5	10/15/2024	Chlorobenzene	0.447	0.4	1	ug/L	J	OW-401B	310-292919-4	10/15/2024	Chlorobenzene	0.45	0.4	1	ug/L	J	0.67
Dup #3 20241015 OW-401B	310-292919-5	10/15/2024	Chloroethane	0.905	0.79	4	ug/L	J	OW-401B	310-292919-4	10/15/2024	Chloroethane	<0.79	0.79	4	ug/L		13.57
Dup #3 20241015 OW-401B	310-292919-5	10/15/2024	Chromium	2.1	1.2	5	ug/L	J	OW-401B	310-292919-4	10/15/2024	Chromium	2.24	1.2	5	ug/L	J	6.45
Dup #3 20241015 OW-401B	310-292919-5	10/15/2024	Cobalt	2.88	0.17	0.5	ug/L		OW-401B	310-292919-4	10/15/2024	Cobalt	2.87	0.17	0.5	ug/L		0.35
Dup #3 20241015 OW-401B	310-292919-5	10/15/2024	Lead	0.335	0.26	0.5	ug/L	J	OW-401B	310-292919-4	10/15/2024	Lead	0.312	0.26	0.5	ug/L	J	7.11
Dup #3 20241015 OW-401B	310-292919-5	10/15/2024	Nickel	39.3	2.1	5	ug/L		OW-401B	310-292919-4	10/15/2024	Nickel	38.3	2.1	5	ug/L		2.58
Dup #3 20241015 OW-401B	310-292919-5	10/15/2024	Total Suspended Solids	61	11.1	15	mg/L		OW-401B	310-292919-4	10/15/2024	Total Suspended Solids	77	11.1	15	mg/L		23.19
Dup #3 20241015 OW-401B	310-292919-5	10/15/2024	Vanadium	2.89	1.1	5	ug/L	J	OW-401B	310-292919-4	10/15/2024	Vanadium	3.15	1.1	5	ug/L	J	8.61
Dup #4 20241025 MW-409B	310-293758-4	10/25/2024	Arsenic	5.04	0.53	2	ug/L		MW-409B	310-293758-3	10/25/2024	Arsenic	5.06	0.53	2	ug/L		0.40
Dup #4 20241025 MW-409B	310-293758-4	10/25/2024	Barium	28.1	0.66	2	ug/L		MW-409B	310-293758-3	10/25/2024	Barium	28.7	0.66	2	ug/L		2.11
Dup #4 20241025 MW-409B	310-293758-4	10/25/2024	Cobalt	7.79	0.17	0.5	ug/L		MW-409B	310-293758-3	10/25/2024	Cobalt	7.88	0.17	0.5	ug/L		1.15
Dup #4 20241025 MW-409B	310-293758-4	10/25/2024	Nickel	6.66	2.1	5	ug/L		MW-409B	310-293758-3	10/25/2024	Nickel	6.66	2.1	5	ug/L		0.00
Dup #4 20241025 MW-409B	310-293758-4	10/25/2024	Total Suspended Solids	22	2.78	3.75	mg/L		MW-409B	310-293758-3	10/25/2024	Total Suspended Solids	29.5	5.55	7.5	mg/L		29.13

Notes:
J - estimated result
B - detected in lab blank

Appendix A - Statistical Analysis Reports

APPENDIX A-1
SITE WIDE

Table 9

Analytical Data Summary for Antimony (ug/L)

Dates	MW-308B	MW-312B	MW-319B	MW-409B	MW-501B	MW-601B	MW-602B	MW-603B
2/24/2015 - 3/20/2015	<.161	<.161	<.161	<.161	.321	<.161	<.161	.296
6/12/2015 - 6/26/2015						.165	.162	.637
8/20/2015 - 9/9/2015	<.161	<.161	.169	<.161	<.161	.261	.209	<.161
12/11/2015 - 12/17/2015						.899	.169	.640
3/7/2016 - 3/29/2016	<.237	<.237	<.237	<.237	<.237	.420	.284	.516
9/12/2016 - 10/11/2016	<.237	<.237	<.237	<.237	<.237	<.237	<.237	<.237
12/6/2016 - 12/15/2016								
3/17/2017 - 4/8/2017	<.185	<.185	<.185	<.185	<.185	<.185	<.185	<.185
6/13/2017 - 6/21/2017								
9/6/2017 - 9/29/2017	<.185	<.185	<.185	<.185	<.185	.327	<.185	.313
11/28/2017 - 11/30/2017								
3/12/2018 - 4/11/2018	<.185	<.185	<.420	<.420	<.420	<.420	<.420	<.420
7/10/2018 - 7/17/2018				<.420	<.420			
8/29/2018 - 9/27/2018	<.420	<.420	<.420	<.420		<.420	<.420	<.420
12/16/2018					<.420			
3/26/2019 - 4/25/2019	<.530	<.530	<.530	<.530	<.530	<.530	<.530	<.530 .661J
9/17/2019 - 10/11/2019	<.530	<.530	<.530	<.530	<.530	<.530	<.530	<.530
3/23/2020 - 4/22/2020			<.580	<.580	<.580	<.580	<.580	<.580
8/18/2020 - 9/17/2020				<.510				
9/17/2020 - 10/8/2020			<.510	<.510	<.510	<.510	<.510	<.510
12/8/2020 - 12/10/2020								
3/11/2021 - 4/6/2021			<1.100	<1.100	<1.100		<1.100	<1.100
6/17/2021 - 6/22/2021								
10/26/2021 - 11/24/2021			<1.100	<1.100	<1.100		<1.100	<1.100
4/11/2022 - 5/11/2022			<.690 .774J	<.690	<.690		<.690	<.690 .791J
10/11/2022 - 11/10/2022			<.690	<.690	<.690		<.690	<.690
3/20/2023 - 4/19/2023			<1.000	<.690 .803J	<1.000		<1.000	<1.000
8/8/2023 - 9/7/2023								
9/7/2023 - 10/5/2023			<1.000	<1.000	<1.000		<1.000	<1.000
4/23/2024 - 5/23/2024			<1.000	<1.000	<1.000		<1.000	<1.000
5/23/2024 - 5/30/2024								
9/25/2024 - 10/25/2024			<1.000	<1.000	<1.000		<1.000	<1.000
10/25/2024 - 11/1/2024				<1.000				

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Antimony (ug/L)

Dates	MW-604B	MW-605B	OW-105B	OW-113B	OW-114B	OW-205B	OW-209B	OW-216B
2/24/2015 - 3/20/2015	.468	<.161		<.161	<.161		<.161	<.161
6/12/2015 - 6/26/2015	.238	.331						
8/20/2015 - 9/9/2015	.466	.529		<.161	<.161		<.161	<.161
12/11/2015 - 12/17/2015	1.040	.500						
3/7/2016 - 3/29/2016	.586	.601	.409	<.237	<.237	<.237	<.237	<.237
9/12/2016 - 10/11/2016	<.237	.367		<.237	<.237		<.237	.242
12/6/2016 - 12/15/2016					<.237	<.237		
3/17/2017 - 4/8/2017	<.185	<.185		<.185	<.185	<.185	<.185	<.185
6/13/2017 - 6/21/2017						<.185		
9/6/2017 - 9/29/2017	<.185	.272		<.185	<.185	<.185	<.185	<.185
11/28/2017 - 11/30/2017						.956		
3/12/2018 - 4/11/2018	<.420	.200		<.420	.272	<.185	<.420	<.420
7/10/2018 - 7/17/2018						<8.400		
8/29/2018 - 9/27/2018	<.420	<.420		<.420	<.420	<.420	<.420	<.420
12/16/2018								
3/26/2019 - 4/25/2019	<.530	<.530		<.530	<.530	<.530	<.530	<.530
9/17/2019 - 10/11/2019	<.530	<.530		<.530	<.530	<.530	<.530	<.530
3/23/2020 - 4/22/2020	<.580	<.580	<.580	<.580 .599J	<.580	<.580	<.580	<.580
8/18/2020 - 9/17/2020		<.510						
9/17/2020 - 10/8/2020	<.510		<.510	<.510	<.510	<.510	<.510	<.510
12/8/2020 - 12/10/2020			<.510					
3/11/2021 - 4/6/2021	<1.100	<1.100	<1.100	<1.100	<1.100	<1.100	<1.100	<1.100
6/17/2021 - 6/22/2021			<1.100					
10/26/2021 - 11/24/2021	<1.100		<1.100	<1.100	<1.100	<1.100	<1.100	<1.100
4/11/2022 - 5/11/2022	<.690		<.690	<.690	<.690	<.690	<.690	<.690
10/11/2022 - 11/10/2022	<.690		<.690	<.690	<.690	<.690	<.690	<.690
3/20/2023 - 4/19/2023	<1.000		<1.000	<1.000	<1.000	<1.000	<.690	<1.000
8/8/2023 - 9/7/2023						<1.000	<1.000	
9/7/2023 - 10/5/2023	<1.000		<1.000	<1.000	<1.000			<1.000
4/23/2024 - 5/23/2024	<1.000		<1.000	<1.000	<1.000	<1.000	<1.000	<1.000
5/23/2024 - 5/30/2024				<1.000				
9/25/2024 - 10/25/2024	<1.000		<1.000	<1.000	<1.000		<1.000	<1.000
10/25/2024 - 11/1/2024								

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Antimony (ug/L)

Dates	OW-401B	OW-402B	OW-403B	OW-405B	OW-406B	OW-410B	OW-411B	OW-412B
2/24/2015 - 3/20/2015	<.161	<.161	.310	<.161	<.161			
6/12/2015 - 6/26/2015								
8/20/2015 - 9/9/2015	<.161	<.161	.339	<.161	<.161			
12/11/2015 - 12/17/2015								
3/7/2016 - 3/29/2016	<.237	<.237	<.237	<.237	.325			
9/12/2016 - 10/11/2016	<.237	<.237	<.237	<.237	.279			
12/6/2016 - 12/15/2016	<.237	<.237				<.237	<.237	<.237
3/17/2017 - 4/8/2017	<.185	<.185	<.185	<.185	<.185	<.185	<.185	.253
6/13/2017 - 6/21/2017						.366	<.185	.204
9/6/2017 - 9/29/2017	.239	<.185	.201	<.185	<.185	<.185	<.185	<.185
11/28/2017 - 11/30/2017						.312	<.185	<.185
3/12/2018 - 4/11/2018	<.420	<.420	.225	<.185	<.185	<.420	<.420	<.420
7/10/2018 - 7/17/2018								
8/29/2018 - 9/27/2018	<.420	<.420	<.420	<.420	<.420	<.420	<.420	<.420
12/16/2018								
3/26/2019 - 4/25/2019	<.530	<.530	<.530	<.530	<.530	<.530	<.530	<.530
9/17/2019 - 10/11/2019	<.530	<.530	<.530	<.530	<.530	<1.060	<.530	<.530
3/23/2020 - 4/22/2020	<.580	<.580			<.580	<.580	<.580	<.580
8/18/2020 - 9/17/2020					<.510			
9/17/2020 - 10/8/2020	<.510	<.510				<.510	<.510	<.510
12/8/2020 - 12/10/2020								
3/11/2021 - 4/6/2021	<1.100	<1.100				<1.100	<1.100	<1.100
6/17/2021 - 6/22/2021								
10/26/2021 - 11/24/2021	<1.100	<1.100						
4/11/2022 - 5/11/2022	<.690	<.690				<.690	<.690	<.690
10/11/2022 - 11/10/2022	<.690	<.690						
3/20/2023 - 4/19/2023	<2.760	<.690				<2.760	<1.000	<1.000
8/8/2023 - 9/7/2023								
9/7/2023 - 10/5/2023	<1.000	<1.000						
4/23/2024 - 5/23/2024	<1.000	<1.000				<1.000	<1.000	<1.000
5/23/2024 - 5/30/2024								
9/25/2024 - 10/25/2024	<1.000	<1.000						
10/25/2024 - 11/1/2024								

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Antimony (ug/L)

Dates	OW-413B	OW-414B
2/24/2015 - 3/20/2015		
6/12/2015 - 6/26/2015		
8/20/2015 - 9/9/2015		
12/11/2015 - 12/17/2015		
3/7/2016 - 3/29/2016		
9/12/2016 - 10/11/2016		
12/6/2016 - 12/15/2016	<.237	<.237
3/17/2017 - 4/8/2017	.291	<.185
6/13/2017 - 6/21/2017	<.185	<.185
9/6/2017 - 9/29/2017	.438	<.185
11/28/2017 - 11/30/2017	<.185	.251
3/12/2018 - 4/11/2018	<.420	<.420
7/10/2018 - 7/17/2018		
8/29/2018 - 9/27/2018	<.420 *	<.420 *
12/16/2018		
3/26/2019 - 4/25/2019	<.530	<.530
9/17/2019 - 10/11/2019	<.530	<.530
3/23/2020 - 4/22/2020	<.580	<.580
8/18/2020 - 9/17/2020		
9/17/2020 - 10/8/2020	<.510	<.510
12/8/2020 - 12/10/2020		
3/11/2021 - 4/6/2021	<1.100	<1.100
6/17/2021 - 6/22/2021		
10/26/2021 - 11/24/2021	<1.100	
4/11/2022 - 5/11/2022	<.690	<.690
10/11/2022 - 11/10/2022	<.690	
3/20/2023 - 4/19/2023	<1.000	<1.000
8/8/2023 - 9/7/2023		
9/7/2023 - 10/5/2023	<1.000	
4/23/2024 - 5/23/2024	<1.000	<1.000
5/23/2024 - 5/30/2024		
9/25/2024 - 10/25/2024	<1.000	
10/25/2024 - 11/1/2024		

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Arsenic (ug/L)

Dates	MW-308B	MW-312B	MW-319B	MW-409B	MW-501B	MW-601B	MW-602B	MW-603B
2/24/2015 - 3/20/2015	<.945	<.945	<.945	2.13	<.945	<.945	<.945	1.050
6/12/2015 - 6/26/2015						<.945	<.945	<.945
8/20/2015 - 9/9/2015	<.945	<.945	<.945	1.17	<.945	<.945	<.945	<.945
12/11/2015 - 12/17/2015						<.945	<.945	<.945
3/7/2016 - 3/29/2016	<.672	.760	<.672	1.24	<.672	<.672	<.672	.799
9/12/2016 - 10/11/2016	<.672	<.672	<.672	1.70	<.672	<.672	.783	1.840
12/6/2016 - 12/15/2016								
3/17/2017 - 4/8/2017	<.505	<.505	<.505	1.02	<.505	<.505	<.505	2.380
6/13/2017 - 6/21/2017								
9/6/2017 - 9/29/2017	<.505	.621	<.505	1.45	<.505	.527	<.505	3.870
11/28/2017 - 11/30/2017								
3/12/2018 - 4/11/2018	<.505	<.505	<.570	1.16	2.220	<.570	<.570	3.680
7/10/2018 - 7/17/2018				1.84	<.570			
8/29/2018 - 9/27/2018	<.570	.715	<.570	3.82		.590	<.570	2.650
12/16/2018					<.570			
3/26/2019 - 4/25/2019	<.750	<.750 .929J	<.750	<.75 1.34J	<.750	<.750	<.750	2.250
9/17/2019 - 10/11/2019	<.750	<.750 1.770J	<.750	4.56	<.750	<.750	<.750	2.570
3/23/2020 - 4/22/2020			<.880	2.02	<.880	<.880	<.880	<.880 1.900J
8/18/2020 - 9/17/2020				2.81				
9/17/2020 - 10/8/2020			<.880	2.81	<.880	<.880	<.880	2.090
12/8/2020 - 12/10/2020								2.200
3/11/2021 - 4/6/2021			<.750	<.75 1.33J	<.750		<.750	<.750 1.080J
6/17/2021 - 6/22/2021								
10/26/2021 - 11/24/2021			<.750	4.01	<.750		<.750	<.750 1.600J
4/11/2022 - 5/11/2022			<.750	<.75 1.42J	<.750		<.750	<.750 1.420J
10/11/2022 - 11/10/2022			<.750	5.73	<.750		<.750	<.750 1.170J
3/20/2023 - 4/19/2023			<.530	<.75 1.55J	<.530		<.530	<.530 1.000J
8/8/2023 - 9/7/2023								
9/7/2023 - 10/5/2023			<.530	2.04	<.530		<.530	<.530 1.170J
4/23/2024 - 5/23/2024			<.530	3.83	<.530		<.530	<.530 .633J
5/23/2024 - 5/30/2024								
7/26/2024 - 8/9/2024								
9/25/2024 - 10/25/2024			<.530 1.110J	5.06	<.530		<.530	<.530 .742J
10/25/2024 - 11/1/2024				5.06				

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Arsenic (ug/L)

Dates	MW-604B	MW-605B	OW-105B	OW-113B	OW-114B	OW-205B	OW-209B	OW-216B
2/24/2015 - 3/20/2015	<.945	<.945		<.945	1.300		<.945	1.410
6/12/2015 - 6/26/2015	<.945	<.945						
8/20/2015 - 9/9/2015	<.945	<.945		<.945	<.945		<.945	1.470
12/11/2015 - 12/17/2015	<.945	<.945						
3/7/2016 - 3/29/2016	.782	<.672	<.672	<.672	.823	14.80	<.672	1.190
9/12/2016 - 10/11/2016	<.672	<.672		3.270	1.840		<.672	<.672
12/6/2016 - 12/15/2016					<.672	13.90		
3/17/2017 - 4/8/2017	<.505	<.505		<.505	1.580	12.90	<.505	4.180
6/13/2017 - 6/21/2017						7.50		
9/6/2017 - 9/29/2017	<.505	<.505		<.505	2.260	6.55	<.505	2.800
11/28/2017 - 11/30/2017						6.40		
3/12/2018 - 4/11/2018	<.570	<.505		<.570	2.140	7.25	<.570	<.570
7/10/2018 - 7/17/2018						<11.40		
8/29/2018 - 9/27/2018	<.570	<.570		<.570	<.570	5.31	<.570	.834
12/16/2018								
3/26/2019 - 4/25/2019	<.750	<.750		<.750	<.750	11.90	<.750	<.750 1.270J
9/17/2019 - 10/11/2019	<.750	<.750		<.750	<.750 .924J	18.80	<.750	<.750 .923J
3/23/2020 - 4/22/2020	<.880	<.880	<.880	<.880	<.880	13.40	<.880	<.880
8/18/2020 - 9/17/2020		<.880						
9/17/2020 - 10/8/2020	<.880		<.880	<.880	<.880	6.85	<.880	<.880 1.570J
12/8/2020 - 12/10/2020			<.880					
3/11/2021 - 4/6/2021	<.750	<.750	<.750	<.750	<.750	17.50	<.750	<.750 .873J
6/17/2021 - 6/22/2021			<.750					
10/26/2021 - 11/24/2021	<.750		<.750	<.750 .890J	<.750	12.40	<.750	<.750 .755J
4/11/2022 - 5/11/2022	<.750		<.750	<.750	<.750	10.20	<.750	<.750
10/11/2022 - 11/10/2022	<.750		<.750	<.750	<.750	11.10	<.750	<.750
3/20/2023 - 4/19/2023	<.530		<.530	<.530	<.530 .681J	18.30	<.750	<.530 .654J
8/8/2023 - 9/7/2023						9.14	<.530	
9/7/2023 - 10/5/2023	<.530		<.530	<.530 .994J	<.530 .929J			<.530 .615J
4/23/2024 - 5/23/2024	<.530		<.530	2.190	<.530	9.06	<.530	<.530
5/23/2024 - 5/30/2024				2.190				
7/26/2024 - 8/9/2024								
9/25/2024 - 10/25/2024	<.530		<.530	<.530 1.520J	<.530 .697J		<.530	<.530
10/25/2024 - 11/1/2024								

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Arsenic (ug/L)

Dates	OW-401B	OW-402B	OW-403B	OW-405B	OW-406B	OW-410B	OW-411B
2/24/2015 - 3/20/2015	9.13	<.945	<.945	<.945	<.945		
6/12/2015 - 6/26/2015							
8/20/2015 - 9/9/2015	10.00	<.945	<.945	<.945	<.945		
12/11/2015 - 12/17/2015							
3/7/2016 - 3/29/2016	8.98	<.672	<.672	<.672	<.672		
9/12/2016 - 10/11/2016	13.10	<.672	<.672	<.672	<.672		
12/6/2016 - 12/15/2016	12.70	<.672				1.760	2.030
3/17/2017 - 4/8/2017	11.50	<.505	<.505	<.505	<.505	1.120	1.230
6/13/2017 - 6/21/2017						.917	1.380
9/6/2017 - 9/29/2017	12.60	.708	<.505	<.505	<.505	1.220	1.170
11/28/2017 - 11/30/2017						1.880	1.620
3/12/2018 - 4/11/2018	11.60	.694	<.505	<.505	<.505	1.230	1.940
7/10/2018 - 7/17/2018							
8/29/2018 - 9/27/2018	10.50	.615	<.570	<.570	<.570	2.290	.966
12/16/2018							
3/26/2019 - 4/25/2019	12.00	<.750	<.750	<.750	<.750	5.240	3.570
9/17/2019 - 10/11/2019	11.70	<.750	<.750	<.750	<.750	<1.500 3.420J	3.520
3/23/2020 - 4/22/2020	12.80	<.880			<.880	7.480	4.200
8/18/2020 - 9/17/2020					<.880		
9/17/2020 - 10/8/2020	14.30	<.880 1.000J				4.820	3.970
12/8/2020 - 12/10/2020							
3/11/2021 - 4/6/2021	13.70	<.750				7.250	4.980
6/17/2021 - 6/22/2021							
10/26/2021 - 11/24/2021	10.60	<.750 .845J					
4/11/2022 - 5/11/2022	10.40	<.750 .847J				6.570	4.850
10/11/2022 - 11/10/2022	7.20	<.750 .782J					
3/20/2023 - 4/19/2023	<3.00 5.96J	<.750 .826J				6.530	4.740
8/8/2023 - 9/7/2023							
9/7/2023 - 10/5/2023	4.75	<.530 .962J					
4/23/2024 - 5/23/2024	5.67	<.530				11.800	4.070
5/23/2024 - 5/30/2024							
7/26/2024 - 8/9/2024	7.25						
9/25/2024 - 10/25/2024	8.77	<.530 .841J					
10/25/2024 - 11/1/2024							

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Arsenic (ug/L)

Dates	OW-412B	OW-413B	OW-414B
2/24/2015 - 3/20/2015			
6/12/2015 - 6/26/2015			
8/20/2015 - 9/9/2015			
12/11/2015 - 12/17/2015			
3/7/2016 - 3/29/2016			
9/12/2016 - 10/11/2016			
12/6/2016 - 12/15/2016	<.672	4.03	2.24
3/17/2017 - 4/8/2017	.934	3.71	5.99
6/13/2017 - 6/21/2017	.647	3.36	4.18
9/6/2017 - 9/29/2017	.584	4.85	3.05
11/28/2017 - 11/30/2017	.725	4.13	6.38
3/12/2018 - 4/11/2018	<.570	8.33	6.99
7/10/2018 - 7/17/2018			
8/29/2018 - 9/27/2018	3.290	7.79 *	6.99 *
12/16/2018			
3/26/2019 - 4/25/2019	<.750 1.150J	5.36	6.65
9/17/2019 - 10/11/2019	3.910	4.57	5.02
3/23/2020 - 4/22/2020	<.880 1.340J	7.65	4.74
8/18/2020 - 9/17/2020			
9/17/2020 - 10/8/2020	2.150	5.31	7.87
12/8/2020 - 12/10/2020			
3/11/2021 - 4/6/2021	2.160	4.62	8.11
6/17/2021 - 6/22/2021			
10/26/2021 - 11/24/2021		3.68	
4/11/2022 - 5/11/2022	5.140	4.22	4.24
10/11/2022 - 11/10/2022		4.64	
3/20/2023 - 4/19/2023	4.350	9.14	7.54
8/8/2023 - 9/7/2023			
9/7/2023 - 10/5/2023		8.08	
4/23/2024 - 5/23/2024	4.180	10.80	9.85
5/23/2024 - 5/30/2024			
7/26/2024 - 8/9/2024			
9/25/2024 - 10/25/2024		6.37	
10/25/2024 - 11/1/2024			

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Barium (ug/L)

Dates	MW-308B	MW-312B	MW-319B	MW-409B	MW-501B	MW-601B	MW-602B	MW-603B
2/24/2015 - 3/20/2015	79.3	61.6	67.6	44.1	93.0	137	263.0	119.0
6/12/2015 - 6/26/2015						192	334.0	90.6
8/20/2015 - 9/9/2015	80.7	65.4	161.0	47.4	89.8	208	330.0	86.3
12/11/2015 - 12/17/2015						182	279.0	84.9
3/7/2016 - 3/29/2016	66.2	57.6	198.0	37.2	88.5	186	177.0	69.4
9/12/2016 - 10/11/2016	55.2	58.1	199.0	40.7	76.8	216	188.0	69.2
12/6/2016 - 12/15/2016								
3/17/2017 - 4/8/2017	42.6	57.7	231.0	34.1	85.8	225	177.0	66.5
6/13/2017 - 6/21/2017								
9/6/2017 - 9/29/2017	42.3	57.0	204.0	43.0	82.6	186	161.0	41.7
11/28/2017 - 11/30/2017								
3/12/2018 - 4/11/2018	38.1	51.3	288.0	27.5	1200.0	181	146.0	64.0
7/10/2018 - 7/17/2018				27.6	95.0			
8/29/2018 - 9/27/2018	38.8	60.8	226.0	46.6		212	138.0	50.2
12/16/2018					87.5			
3/26/2019 - 4/25/2019	36.4	50.9	252.0	28.4	92.2	200	113.0	64.9
9/17/2019 - 10/11/2019	41.3	63.2	247.0	33.7	98.0	239	133.0	53.4
11/25/2019								
3/23/2020 - 4/22/2020			212.0	24.7	99.7	210	113.0	43.0
8/5/2020 - 8/18/2020					95.7			
8/18/2020 - 9/17/2020				70.3				
9/17/2020 - 10/8/2020			201.0	70.3	104.0	212	126.0	37.4
12/8/2020 - 12/10/2020								
3/11/2021 - 4/6/2021			226.0	30.6	109.0		119.0	39.1
6/17/2021 - 6/22/2021								
10/26/2021 - 11/24/2021			248.0	34.6	110.0		129.0	39.9
4/11/2022 - 5/11/2022			139.0	28.1	102.0		98.2	41.2
10/11/2022 - 11/10/2022			247.0	29.5	109.0		125.0	48.7
3/20/2023 - 4/19/2023			214.0	45.9	123.0		106.0	44.2
8/8/2023 - 9/7/2023								
9/7/2023 - 10/5/2023			184.0	27.2	113.0		109.0	35.2
4/23/2024 - 5/23/2024			223.0	35.8	116.0		104.0	38.6
5/23/2024 - 5/30/2024								
9/25/2024 - 10/25/2024			211.0	28.7	128.0		109.0	34.3
10/25/2024 - 11/1/2024				28.7				

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Barium (ug/L)

Dates	MW-604B	MW-605B	OW-105B	OW-113B	OW-114B	OW-205B	OW-209B	OW-216B
2/24/2015 - 3/20/2015	297.0	188		13.0	63.6		30.3	61.5
6/12/2015 - 6/26/2015	191.0	167						
8/20/2015 - 9/9/2015	198.0	182		14.8	71.3		31.6	91.7
12/11/2015 - 12/17/2015	174.0	159						
3/7/2016 - 3/29/2016	133.0	136	79.7	12.2	51.7	112	32.8	81.0
9/12/2016 - 10/11/2016	141.0	159		113.0	18.6		35.1	89.2
12/6/2016 - 12/15/2016					51.3	177		
3/17/2017 - 4/8/2017	135.0	139		11.6	45.3	186	36.8	130.0
6/13/2017 - 6/21/2017						115		
9/6/2017 - 9/29/2017	118.0	146		11.3	45.2	108	33.4	154.0
11/28/2017 - 11/30/2017						106		
3/12/2018 - 4/11/2018	110.0	139		12.5	49.6	125	40.6	84.8
7/10/2018 - 7/17/2018						189		
8/29/2018 - 9/27/2018	132.0	184		14.2	47.1	190	40.8	101.0
12/16/2018								
3/26/2019 - 4/25/2019	86.4	140		13.5	36.7	151	37.1	91.2
9/17/2019 - 10/11/2019	116.0	183		15.5	51.7	350	35.1	113.0
11/25/2019								
3/23/2020 - 4/22/2020	88.1	170	88.5	14.0	48.5	307	37.5	91.8
8/5/2020 - 8/18/2020								
8/18/2020 - 9/17/2020		167						
9/17/2020 - 10/8/2020	94.4		82.6	13.7	47.2	250	33.3	119.0
12/8/2020 - 12/10/2020			91.4					
3/11/2021 - 4/6/2021	91.7	178	93.9	10.3	42.7	376	50.0	98.7
6/17/2021 - 6/22/2021			87.0					
10/26/2021 - 11/24/2021	94.4		89.4	12.4	46.4	307	30.9	123.0
4/11/2022 - 5/11/2022	74.8		81.9	11.1	55.9	237	43.1	57.4
10/11/2022 - 11/10/2022	84.9		88.7	14.5	54.8	240	32.8	86.1
3/20/2023 - 4/19/2023	78.9		90.5	15.7	62.7	273	52.7	262.0
8/8/2023 - 9/7/2023						177	32.6	
9/7/2023 - 10/5/2023	73.1		84.4	13.8	62.1			225.0
4/23/2024 - 5/23/2024	72.2		79.9	14.1	55.8	171	55.3	222.0
5/23/2024 - 5/30/2024				14.1				
9/25/2024 - 10/25/2024	77.5		89.0	15.8	56.6		39.3	246.0
10/25/2024 - 11/1/2024								

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Barium (ug/L)

Dates	OW-401B	OW-402B	OW-403B	OW-405B	OW-406B	OW-410B	OW-411B	OW-412B
2/24/2015 - 3/20/2015	280	365	110.0	367	215			
6/12/2015 - 6/26/2015								
8/20/2015 - 9/9/2015	307	294	113.0	376	235			
12/11/2015 - 12/17/2015								
3/7/2016 - 3/29/2016	317	378	96.1	363	254			
9/12/2016 - 10/11/2016	442	283	14.1	411	243			
12/6/2016 - 12/15/2016	441	381				902.0	483	444
3/17/2017 - 4/8/2017	427	358	71.2	386	242	809.0	459	574
6/13/2017 - 6/21/2017						921.0	558	582
9/6/2017 - 9/29/2017	775	469	72.6	423	247	1020.0	441	614
11/28/2017 - 11/30/2017						1030.0	459	574
3/12/2018 - 4/11/2018	575	609	61.7	325	213	86.9	510	643
7/10/2018 - 7/17/2018				412				
8/29/2018 - 9/27/2018	591	489	41.2	412	251	1370.0	856	167
12/16/2018								
3/26/2019 - 4/25/2019	870	444	46.1	409	231	1800.0	480	797
9/17/2019 - 10/11/2019	1160	691	50.5	484	249	1630.0	425	951
11/25/2019					234			
3/23/2020 - 4/22/2020	1650	573			215	2360.0	454	890
8/5/2020 - 8/18/2020								
8/18/2020 - 9/17/2020					119			
9/17/2020 - 10/8/2020	1620	892				2270.0	420	1070
12/8/2020 - 12/10/2020								
3/11/2021 - 4/6/2021	1800	866				2890.0	479	1220
6/17/2021 - 6/22/2021								
10/26/2021 - 11/24/2021	1490	1010						
4/11/2022 - 5/11/2022	1300	979				2370.0	477	1180
10/11/2022 - 11/10/2022	1110	949						
3/20/2023 - 4/19/2023	1230	857				3030.0	605	1510
8/8/2023 - 9/7/2023								
9/7/2023 - 10/5/2023	1140	850						
4/23/2024 - 5/23/2024	1710	581				2750.0	687	1390
5/23/2024 - 5/30/2024								
9/25/2024 - 10/25/2024	1760	988						
10/25/2024 - 11/1/2024								

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Barium (ug/L)

Dates	OW-413B	OW-414B
2/24/2015 - 3/20/2015		
6/12/2015 - 6/26/2015		
8/20/2015 - 9/9/2015		
12/11/2015 - 12/17/2015		
3/7/2016 - 3/29/2016		
9/12/2016 - 10/11/2016		
12/6/2016 - 12/15/2016	578	533
3/17/2017 - 4/8/2017	364	434
6/13/2017 - 6/21/2017	444	447
9/6/2017 - 9/29/2017	510	591
11/28/2017 - 11/30/2017	484	558
3/12/2018 - 4/11/2018	447	517
7/10/2018 - 7/17/2018		
8/29/2018 - 9/27/2018	403 *	504 *
12/16/2018		
3/26/2019 - 4/25/2019	425	490
9/17/2019 - 10/11/2019	378	618
11/25/2019		
3/23/2020 - 4/22/2020	349	501
8/5/2020 - 8/18/2020		
8/18/2020 - 9/17/2020		
9/17/2020 - 10/8/2020	341	680
12/8/2020 - 12/10/2020		
3/11/2021 - 4/6/2021	432	666
6/17/2021 - 6/22/2021		
10/26/2021 - 11/24/2021	492	
4/11/2022 - 5/11/2022	423	449
10/11/2022 - 11/10/2022	514	
3/20/2023 - 4/19/2023	543	497
8/8/2023 - 9/7/2023		
9/7/2023 - 10/5/2023	571	
4/23/2024 - 5/23/2024	632	642
5/23/2024 - 5/30/2024		
9/25/2024 - 10/25/2024	544	
10/25/2024 - 11/1/2024		

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Beryllium (ug/L)

Dates	MW-308B	MW-312B	MW-319B	MW-409B	MW-501B	MW-601B	MW-602B	MW-603B
2/24/2015 - 3/20/2015	<.039	<.039	<.039	<.039	<.039	<.039	<.039	<.039
6/12/2015 - 6/26/2015						<.039	<.039	<.039
8/20/2015 - 9/9/2015	<.039	<.039	<.039	<.039	.084	<.039	<.039	<.039
12/11/2015 - 12/17/2015						<.039	<.039	<.039
3/7/2016 - 3/29/2016	<.221	<.221	<.221	<.221	<.221	<.221	<.221	<.221
9/12/2016 - 10/11/2016	<.221	<.221	<.221	<.221	<.221	<.221	<.221	<.221
12/6/2016 - 12/15/2016								
3/17/2017 - 4/8/2017	<.125	<.125	<.125	<.125	<.125	<.125	<.125	<.125
6/13/2017 - 6/21/2017								
9/6/2017 - 9/29/2017	<.125	<.125	<.125	<.125	<.125	<.125	<.125	<.125
11/28/2017 - 11/30/2017								
3/12/2018 - 4/11/2018	<.125	<.125	<.190	<.190	<.190	<.190	<.190	<.190
7/10/2018 - 7/17/2018				<.190	<.190			
8/29/2018 - 9/27/2018	<.190	<.190	<.190	<.190		<.190	<.190	<.190
12/16/2018					<.190			
3/26/2019 - 4/25/2019	<.270	<.270	<.270	<.270	<.270	<.270	<.270	<.270
9/17/2019 - 10/11/2019	<.270	<.270	<.270	<.270	<.270	<.270	<.270	<.270
3/23/2020 - 4/22/2020			<.270	<.270	<.270	<.270	<.270	<.270
8/18/2020 - 9/17/2020				<.270				
9/17/2020 - 10/8/2020			<.270	<.270	<.270	<.270	<.270	<.270
12/8/2020 - 12/10/2020								
3/11/2021 - 4/6/2021			<.270	<.270	<.270		<.270	<.270
6/17/2021 - 6/22/2021								
10/26/2021 - 11/24/2021			<.270	<.270	<.270		<.270	<.270
4/11/2022 - 5/11/2022			<.270	<.270	<.270		<.270	<.270
10/11/2022 - 11/10/2022			<.270	<.270	<.270		<.270	<.270
3/20/2023 - 4/19/2023			<.330	<.270	<.330		<.330	<.330
8/8/2023 - 9/7/2023								
9/7/2023 - 10/5/2023			<.330	<.330	<.330		<.330	<.330
4/23/2024 - 5/23/2024			<.330	<.330	<.330		<.330	<.330
5/23/2024 - 5/30/2024								
9/25/2024 - 10/25/2024			<.330	<.330	<.330		<.330	<.330
10/25/2024 - 11/1/2024				<.330				

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Beryllium (ug/L)

Dates	MW-604B	MW-605B	OW-105B	OW-113B	OW-114B	OW-205B	OW-209B	OW-216B
2/24/2015 - 3/20/2015	<.039	<.039		<.039	.041		<.039	<.039
6/12/2015 - 6/26/2015	<.039	<.039						
8/20/2015 - 9/9/2015	<.039	.048		<.039	<.039		<.039	.045
12/11/2015 - 12/17/2015	.068	<.039						
3/7/2016 - 3/29/2016	<.221	<.221	<.221	<.221	<.221	<.221	<.221	<.221
9/12/2016 - 10/11/2016	<.221	<.221		<.221	<.221		<.221	<.221
12/6/2016 - 12/15/2016					<.221	<.221		
3/17/2017 - 4/8/2017	<.125	<.125		<.125	<.125	<.125	<.125	<.125
6/13/2017 - 6/21/2017						<.125		
9/6/2017 - 9/29/2017	<.125	<.125		<.125	<.125	<.125	<.125	<.125
11/28/2017 - 11/30/2017						<.125		
3/12/2018 - 4/11/2018	<.190	<.125		<.190	<.125	<.125	<.190	<.190
7/10/2018 - 7/17/2018						<3.800		
8/29/2018 - 9/27/2018	<.190	<.190		<.190	<.190	<.190	<.190	<.190
12/16/2018								
3/26/2019 - 4/25/2019	<.270	<.270		<.270	<.270	<.270	<.270	<.270
9/17/2019 - 10/11/2019	<.270	<.270		<.270	<.270	<.270	<.270	<.270
3/23/2020 - 4/22/2020	<.270	<.270	<.270	<.270	<.270	<.270	<.270	<.270
8/18/2020 - 9/17/2020		<.270						
9/17/2020 - 10/8/2020	<.270		<.270	<.270	<.270	<.270	<.270	<.270
12/8/2020 - 12/10/2020			<.270					
3/11/2021 - 4/6/2021	<.270	<.270	<.270	<.270	<.270	<.270	<.270	<.270
6/17/2021 - 6/22/2021			<.270					
10/26/2021 - 11/24/2021	<.270		<.270	<.270	<.270	<.270	<.270	<.270
4/11/2022 - 5/11/2022	<.270		<.270	<.270	<.270	<.270	<.270	<.270
10/11/2022 - 11/10/2022	<.270		<.270	<.270	<2.700	<.270	<.270	<.270
3/20/2023 - 4/19/2023	<.330		<.330	<.330	<.330	<.330	<.270	<.330
8/8/2023 - 9/7/2023						<.330	<.330	
9/7/2023 - 10/5/2023	<.330		<.330	<.330	<.330			<.330
4/23/2024 - 5/23/2024	<.330		<.330	<.330	<.330	<.330	<.330	<.330
5/23/2024 - 5/30/2024				<.330				
9/25/2024 - 10/25/2024	<.330		<.330	<.330	<.330		<.330	<.330
10/25/2024 - 11/1/2024								

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Beryllium (ug/L)

Dates	OW-401B	OW-402B	OW-403B	OW-405B	OW-406B	OW-410B	OW-411B	OW-412B
2/24/2015 - 3/20/2015	<.039	<.039	<.039	<.039	<.039			
6/12/2015 - 6/26/2015								
8/20/2015 - 9/9/2015	<.039	<.039	<.039	<.039	<.039			
12/11/2015 - 12/17/2015								
3/7/2016 - 3/29/2016	<.221	<.221	<.221	<.221	<.221			
9/12/2016 - 10/11/2016	<.221	<.221	<.221	<.221	<.221			
12/6/2016 - 12/15/2016	<.221	<.221				<.221	<.221	<.221
3/17/2017 - 4/8/2017	<.125	<.125	<.125	<.125	<.125	<.125	<.125	<.125
6/13/2017 - 6/21/2017						<.125	<.125	<.125
9/6/2017 - 9/29/2017	<.125	<.125	<.125	<.125	<.125	<.125	<.125	<.125
11/28/2017 - 11/30/2017						<.125	<.125	<.125
3/12/2018 - 4/11/2018	<.190	<.190	<.125	<.125	<.125	<.190	<.190	<.190
7/10/2018 - 7/17/2018								
8/29/2018 - 9/27/2018	<.190	<.190	<.190	<.190	<.190	<.190	<.190	<.190
12/16/2018								
3/26/2019 - 4/25/2019	<.270	<.270	<.270	<.270	<.270	<.270	<.270	<.270
9/17/2019 - 10/11/2019	<.270	<.270	<.270	<.270	<.270	<.540	<.270	<.270
3/23/2020 - 4/22/2020	<.270	<.270			<.270	<.270	<.270	<.270
8/18/2020 - 9/17/2020					<.270			
9/17/2020 - 10/8/2020	<.270	<.270				<.270	<.270	<.270
12/8/2020 - 12/10/2020								
3/11/2021 - 4/6/2021	<.270	<.270				<.270	<.270	<.270
6/17/2021 - 6/22/2021								
10/26/2021 - 11/24/2021	<.270	<.270						
4/11/2022 - 5/11/2022	<.270	<.270				<.270	<.270	<.270
10/11/2022 - 11/10/2022	<.270	<.270						
3/20/2023 - 4/19/2023	<1.080	<.270				<.270	<.330	<.330
8/8/2023 - 9/7/2023								
9/7/2023 - 10/5/2023	<.330	<.330						
4/23/2024 - 5/23/2024	<.330	<.330				<.330	<.330	<.330
5/23/2024 - 5/30/2024								
9/25/2024 - 10/25/2024	<.330	<.330						
10/25/2024 - 11/1/2024								

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Beryllium (ug/L)

Dates	OW-413B	OW-414B
2/24/2015 - 3/20/2015		
6/12/2015 - 6/26/2015		
8/20/2015 - 9/9/2015		
12/11/2015 - 12/17/2015		
3/7/2016 - 3/29/2016		
9/12/2016 - 10/11/2016		
12/6/2016 - 12/15/2016	<.221	<.221
3/17/2017 - 4/8/2017	<.125	<.125
6/13/2017 - 6/21/2017	<.125	<.125
9/6/2017 - 9/29/2017	<.125	<.125
11/28/2017 - 11/30/2017	<.125	<.125
3/12/2018 - 4/11/2018	<.190	<.190
7/10/2018 - 7/17/2018		
8/29/2018 - 9/27/2018	<.190 *	<.190 *
12/16/2018		
3/26/2019 - 4/25/2019	<.270	<.270
9/17/2019 - 10/11/2019	<.270	<.270
3/23/2020 - 4/22/2020	<.270	<.270
8/18/2020 - 9/17/2020		
9/17/2020 - 10/8/2020	<.270	<.270
12/8/2020 - 12/10/2020		
3/11/2021 - 4/6/2021	<.270	<.270
6/17/2021 - 6/22/2021		
10/26/2021 - 11/24/2021	<.270	
4/11/2022 - 5/11/2022	<.270	<.270
10/11/2022 - 11/10/2022	<.270	
3/20/2023 - 4/19/2023	<.330	<.330
8/8/2023 - 9/7/2023		
9/7/2023 - 10/5/2023	<.330	
4/23/2024 - 5/23/2024	<.330	<.330
5/23/2024 - 5/30/2024		
9/25/2024 - 10/25/2024	<.330	
10/25/2024 - 11/1/2024		

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Cadmium (ug/L)

Dates	MW-308B	MW-312B	MW-319B	MW-409B	MW-501B	MW-601B	MW-602B
2/24/2015 - 3/20/2015	<.1120	<.1120	<.1120	<.1120	<.1120	<.1120	<.1120
6/12/2015 - 6/26/2015						<.1120	<.1120
8/20/2015 - 9/9/2015	<.1120	<.1120	<.1120	<.1120	<.1120	<.1120	<.1120
12/11/2015 - 12/17/2015						<.1120	<.1120
3/7/2016 - 3/29/2016	<.0351	<.0351	<.0351	.0460	<.0351	<.0351	.0460
9/12/2016 - 10/11/2016	<.0351	<.0351	<.0351	<.0351	<.0351	<.0351	.1090
12/6/2016 - 12/15/2016							
3/17/2017 - 4/8/2017	<.0441	.0740	<.0441	.0540	<.0441	<.0441	<.0441
6/13/2017 - 6/21/2017							
9/6/2017 - 9/29/2017	<.0441	<.0441	<.0441	.0610	<.0441	<.0441	.0570
11/28/2017 - 11/30/2017							
3/12/2018 - 4/11/2018	<.0441	.3500	<.0600	.0610	.0870	<.0600	<.0600
7/10/2018 - 7/17/2018				.1030	<.0600		
8/29/2018 - 9/27/2018	<.0600	<.0600	<.0600	.0740		<.0600	<.0600
12/16/2018					<.0600		
3/26/2019 - 4/25/2019	<.0770	<.0770 .0930J	<.0770	<.0770	<.0770	<.0770	<.0770
9/17/2019 - 10/11/2019	<.0390	<.0390	<.0390	<.0390	<.0390	<.0390	<.0390
3/23/2020 - 4/22/2020			<.0390	<.0390 .0420J	<.0390	<.0390	<.0390
8/18/2020 - 9/17/2020				<.0490			
9/17/2020 - 10/8/2020			<.0490	<.0490	<.0490	<.0490	.1480
12/8/2020 - 12/10/2020							
3/11/2021 - 4/6/2021			<.0510	<.0510	<.0510		<.0510
6/17/2021 - 6/22/2021							
10/26/2021 - 11/24/2021			<.0510	<.0510 .0700J	<.0510		<.0510
2/8/2022 - 2/9/2022							
4/11/2022 - 5/11/2022			<.0550	<.0550	<.0550		<.0550
10/11/2022 - 11/10/2022			<.0550	<.0550	<.0550		<.0550
3/20/2023 - 4/19/2023			<.1000	<.0550	<.1000		<.1000
8/8/2023 - 9/7/2023							
9/7/2023 - 10/5/2023			<.1000	<.1000	<.1000		<.1000
4/23/2024 - 5/23/2024			<.1000	<.1000	<.1000		<.1000
5/23/2024 - 5/30/2024							
9/25/2024 - 10/25/2024			<.1000	<.1000	<.1000		<.1000 .1750J
10/25/2024 - 11/1/2024				<.1000			

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Cadmium (ug/L)

Dates	MW-603B	MW-604B	MW-605B	OW-105B	OW-113B	OW-114B	OW-205B
2/24/2015 - 3/20/2015	<.1120	.1550	<.1120		<.1120	<.1120	
6/12/2015 - 6/26/2015	<.1120	<.1120	<.1120				
8/20/2015 - 9/9/2015	<.1120	<.1120	<.1120		<.1120	.1420	
12/11/2015 - 12/17/2015	<.1120	<.1120	<.1120				
3/7/2016 - 3/29/2016	<.0351	.0510	.0380	.052	.0960	.1420	.0420
9/12/2016 - 10/11/2016	<.0351	.0680	.0480		<.0351	<.0351	
12/6/2016 - 12/15/2016						.0650	<.0351
3/17/2017 - 4/8/2017	<.0441	<.0441	<.0441		.0680	<.0441	<.0441
6/13/2017 - 6/21/2017							<.0441
9/6/2017 - 9/29/2017	<.0441	.0700	<.0441		.0830	<.0441	<.0441
11/28/2017 - 11/30/2017							.0520
3/12/2018 - 4/11/2018	<.0600	<.0600	<.0441		<.0600	.1740	<.0441
7/10/2018 - 7/17/2018							<1.2000
8/29/2018 - 9/27/2018	<.0600	.0830	<.0600		<.0600	.0860	.0920
12/16/2018							
3/26/2019 - 4/25/2019	<.0770	<.0770	<.0770		<.0770 .1280J	<.0770 .0870J	<.0770
9/17/2019 - 10/11/2019	<.0390	<.0390 .0890J	<.0390		.1130	<.0390 .0610J	<.0390
3/23/2020 - 4/22/2020	<.0390	<.0390	<.0390	<.039	<.0390 .0830J	<.0390 .0660J	<.0390
8/18/2020 - 9/17/2020			<.0490				
9/17/2020 - 10/8/2020	<.0490	<.0490 .0860J		<.049	<.0490 .0620J	<.0490 .0510J	.1520
12/8/2020 - 12/10/2020				<.049			
3/11/2021 - 4/6/2021	<.0510	<.0510	<.0510	<.051	<.0510 .0940J	<.0510	<.0510
6/17/2021 - 6/22/2021				<.051			
10/26/2021 - 11/24/2021	<.0510	<.0510		.107	<.0510	<.0510	<.0510
2/8/2022 - 2/9/2022				<.051			
4/11/2022 - 5/11/2022	<.0550	<.0550		<.055	<.0550 .0640J	<.0550	<.0550
10/11/2022 - 11/10/2022	<.0550	<.0550 .0700J		<.055 .088J	<.0550	<.0550	<.0550
3/20/2023 - 4/19/2023	<.1000	<.1000		<.100	<.1000	<.1000 .1070J	<.1000
8/8/2023 - 9/7/2023							<.1000
9/7/2023 - 10/5/2023	<.1000	<.1000		<.100	<.1000	<.1000 .1090J	
4/23/2024 - 5/23/2024	<.1000	<.1000		<.100	<.1000	<.1000	<.1000
5/23/2024 - 5/30/2024					<.1000		
9/25/2024 - 10/25/2024	<.1000	<.1000		<.100	<.1000	<.1000	
10/25/2024 - 11/1/2024							

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Cadmium (ug/L)

Dates	OW-209B	OW-216B	OW-401B	OW-402B	OW-403B	OW-405B	OW-406B
2/24/2015 - 3/20/2015	<.112	<.1120	<.1120	1.290	<.1120	<.1120	<.1120
6/12/2015 - 6/26/2015							
8/20/2015 - 9/9/2015	.149	<.1120	<.1120	.685	<.1120	<.1120	<.1120
12/11/2015 - 12/17/2015							
3/7/2016 - 3/29/2016	.080	<.0351	<.0351	.410	.0770	.0530	.1210
9/12/2016 - 10/11/2016	.110	.0640	<.0351	.644	.0900	.0460	<.0351
12/6/2016 - 12/15/2016			<.0351	.765			
3/17/2017 - 4/8/2017	.094	<.0441	<.0441	.582	<.0441	<.0441	<.0441
6/13/2017 - 6/21/2017							
9/6/2017 - 9/29/2017	.051	<.0441	<.0441	.873	<.0441	<.0441	<.0441
11/28/2017 - 11/30/2017							
3/12/2018 - 4/11/2018	.071	<.0600	<.0600	1.230	<.0441	<.0441	<.0441
7/10/2018 - 7/17/2018							
8/29/2018 - 9/27/2018	.095	<.0600	<.0600	.950	<.0600	<.0600	<.0600
12/16/2018							
3/26/2019 - 4/25/2019	<.077	<.0770	<.0770	.873	<.0770	<.0770	<.0770
9/17/2019 - 10/11/2019	<.039 .078J	<.0390	<.0390	1.090	<.0390	<.0390 .0500J	<.0390
3/23/2020 - 4/22/2020	<.039 .049J	<.0390	<.0390	.462			<.0390
8/18/2020 - 9/17/2020							<.0490 .0600J
9/17/2020 - 10/8/2020	<.049 .058J	<.0490	<.0490 .0760J	1.290			
12/8/2020 - 12/10/2020							
3/11/2021 - 4/6/2021	<.051 .083J	<.0510	<.0510 .0680J	1.120			
6/17/2021 - 6/22/2021							
10/26/2021 - 11/24/2021	<.051 .093J	<.0510	<.0510	.951			
2/8/2022 - 2/9/2022							
4/11/2022 - 5/11/2022	<.055 .070J	<.0550	<.0550	.745			
10/11/2022 - 11/10/2022	<.055 .086J	<.0550	<.0550	.697			
3/20/2023 - 4/19/2023	<.055 .074J	<.1000	<.2200	.529			
8/8/2023 - 9/7/2023	<.100 .140J						
9/7/2023 - 10/5/2023		<.1000	<.1000	.569			
4/23/2024 - 5/23/2024	<.100 .105J	<.1000	<.1000	<.100			
5/23/2024 - 5/30/2024							
9/25/2024 - 10/25/2024	<.100	<.1000	<.1000	.514			
10/25/2024 - 11/1/2024							

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Cadmium (ug/L)

Dates	OW-410B	OW-411B	OW-412B	OW-413B	OW-414B
2/24/2015 - 3/20/2015					
6/12/2015 - 6/26/2015					
8/20/2015 - 9/9/2015					
12/11/2015 - 12/17/2015					
3/7/2016 - 3/29/2016					
9/12/2016 - 10/11/2016					
12/6/2016 - 12/15/2016	<.0351	.0670	.1760	<.0351	.2000
3/17/2017 - 4/8/2017	.1160	<.0441	<.0441	<.0441	<.0441
6/13/2017 - 6/21/2017	.7230	.1160	.0750	<.0441	.0950
9/6/2017 - 9/29/2017	.6940	.0940	.1260	<.0441	.3490
11/28/2017 - 11/30/2017	.7580	.0790	.1910	<.0441	.3650
3/12/2018 - 4/11/2018	<.0600	.3900	.1950	<.0600	.0630
7/10/2018 - 7/17/2018					
8/29/2018 - 9/27/2018	.1120	.1590	<.0600	<.0600 *	<.0600 *
12/16/2018					
3/26/2019 - 4/25/2019	<.0770	<.0770	<.0770	<.0770	<.0770
9/17/2019 - 10/11/2019	<.0780	<.0390	<.0390 .0680J	<.0390	<.0390
3/23/2020 - 4/22/2020	<.0390	<.0390	<.0390 .0520J	<.0390	<.0390
8/18/2020 - 9/17/2020					
9/17/2020 - 10/8/2020	<.0490	<.0490	<.0490 .0790J	<.0490	<.0490
12/8/2020 - 12/10/2020					
3/11/2021 - 4/6/2021	<.0510	<.0510	<.0510	<.0510	<.0510
6/17/2021 - 6/22/2021					
10/26/2021 - 11/24/2021				<.0510	
2/8/2022 - 2/9/2022					
4/11/2022 - 5/11/2022	<.0550	<.0550	<.0550	<.0550	<.0550
10/11/2022 - 11/10/2022				<.0550	
3/20/2023 - 4/19/2023	<.0550	<.1000	<.1000	<.1000	<.1000
8/8/2023 - 9/7/2023					
9/7/2023 - 10/5/2023				<.1000	
4/23/2024 - 5/23/2024	<.4000	<.1000	<.1000	<.1000	<.1000
5/23/2024 - 5/30/2024					
9/25/2024 - 10/25/2024				<.1000	
10/25/2024 - 11/1/2024					

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Chromium (ug/L)

Dates	MW-308B	MW-312B	MW-319B	MW-409B	MW-501B	MW-601B	MW-602B
2/24/2015 - 3/20/2015	<1.24	1.840	<1.24	<1.240	<1.240	1.490	86.80
6/12/2015 - 6/26/2015						<1.240	13.30
8/20/2015 - 9/9/2015	1.35	4.180	7.14	<1.240	<1.240	2.340	50.00
12/11/2015 - 12/17/2015						2.410	433.00
3/7/2016 - 3/29/2016	1.14	5.620	2.06	<.355	.363	.672	268.00
9/12/2016 - 10/11/2016	1.83	2.730	1.14	<.355	.903	1.840	112.00
12/6/2016 - 12/15/2016							
3/17/2017 - 4/8/2017	1.91	1.750	1.01	<.729	1.450	.757	22.60
6/13/2017 - 6/21/2017							
9/6/2017 - 9/29/2017	2.50	1.350	3.44	<.729	<.729	<.729	10.20
11/28/2017 - 11/30/2017							
3/12/2018 - 4/11/2018	1.09	.729	<.76	<.760	2.170	.959	19.90
7/10/2018 - 7/17/2018				<.760	1.710		
8/29/2018 - 9/27/2018	4.02	1.520	9.06	<.760		<.760	20.60
12/16/2018			6.69		14.800		
3/26/2019 - 4/25/2019	<.98 1.16J	<.980 1.640J	<.98 1.35J	<.980	<.980	<.980 .995J	23.40
9/17/2019 - 10/11/2019	<.98 1.33J	<.980 1.170J	<.98 2.83J	<.980	<.980 3.650J	<.980	<.98 4.33J
3/23/2020 - 4/22/2020			9.13	<1.100	<1.100 3.260J	<1.100	<1.10 1.75J
8/18/2020 - 9/17/2020				<1.100 2.050J			
9/17/2020 - 10/8/2020			10.90	<1.100 2.050J	<1.100 4.520J	<1.100	<1.10 3.88J
12/8/2020 - 12/10/2020							
3/11/2021 - 4/6/2021			7.08	<1.100	<1.100 2.080J		<1.10 2.04J
6/17/2021 - 6/22/2021							
10/26/2021 - 11/24/2021			19.20	<1.100	<1.100		<1.10 2.49J
4/11/2022 - 5/11/2022			15.60	<1.100	<1.100 2.090J		<1.10 3.39J
10/11/2022 - 11/10/2022			27.00	<1.100	<1.100		<1.10 1.35J
3/20/2023 - 4/19/2023			13.40	<1.100	<1.100 2.050J		<1.10 3.40J
8/8/2023 - 9/7/2023							
9/7/2023 - 10/5/2023			17.10	<1.100	<1.100 1.520J		<1.10 2.91J
4/23/2024 - 5/23/2024			12.30	<1.200	7.570		<1.20
5/23/2024 - 5/30/2024							
9/25/2024 - 10/25/2024			15.20	<1.200	<1.200 4.040J		<1.20 3.31J
10/25/2024 - 11/1/2024				<1.200			

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Chromium (ug/L)

Dates	MW-603B	MW-604B	MW-605B	OW-105B	OW-113B	OW-114B	OW-205B
2/24/2015 - 3/20/2015	1.830	<1.240	1.700		6.290	<1.240	
6/12/2015 - 6/26/2015	8.350	<1.240	<1.240				
8/20/2015 - 9/9/2015	8.840	<1.240	<1.240		<1.240	<1.240	
12/11/2015 - 12/17/2015	5.110	4.180	1.580				
3/7/2016 - 3/29/2016	2.620	1.850	.867	14.80	.536	<.355	2.33
9/12/2016 - 10/11/2016	2.660	.608	.590		<.355	2.020	
12/6/2016 - 12/15/2016						<.355	.68
3/17/2017 - 4/8/2017	<.729	1.890	1.620		<.729	<.729	3.03
6/13/2017 - 6/21/2017							1.06
9/6/2017 - 9/29/2017	<.729	1.160	4.140		<.729	<.729	1.32
11/28/2017 - 11/30/2017							2.86
3/12/2018 - 4/11/2018	<.760	4.890	1.770		9.550	<.729	.94
7/10/2018 - 7/17/2018							<15.20
8/29/2018 - 9/27/2018	<.760	1.610	1.140		1.290	<.760	<.76
12/16/2018							
3/26/2019 - 4/25/2019	<.980	<.980 2.270J	<.980		<.980 2.940J	<.980	<.98 2.73J
9/17/2019 - 10/11/2019	<.980	<.980	<.980		<.980	<.980	<.98
3/23/2020 - 4/22/2020	<1.100	<1.100 3.870J	<1.100	10.50	<1.100 1.840J	<1.100	<1.10 2.04J
8/18/2020 - 9/17/2020			<1.100 1.740J				
9/17/2020 - 10/8/2020	<1.100	<1.100 1.790J		<1.10 4.86J	<1.100	<1.100	<1.10
12/8/2020 - 12/10/2020		<1.100 3.420J		10.60			
3/11/2021 - 4/6/2021	<1.100	8.570	<1.100 1.840J	8.44	<1.100	<1.100	<1.10 1.81J
6/17/2021 - 6/22/2021				8.57			
10/26/2021 - 11/24/2021	<1.100	<1.100 3.200J		<1.10 3.59J	<1.100	<1.100 1.810J	<1.10
4/11/2022 - 5/11/2022	<1.100	<1.100 4.820J		5.31	<1.100	<1.100	<1.10 1.87J
10/11/2022 - 11/10/2022	<1.100	<1.100 3.810J		<1.10 1.67J	<1.100	<1.100 1.510J	<1.10
3/20/2023 - 4/19/2023	<1.100	7.730		<1.10 4.48J	<1.100	<1.100	<1.10 1.87J
8/8/2023 - 9/7/2023							<1.10
9/7/2023 - 10/5/2023	<1.100	<1.100 2.540J		<1.10 2.60J	<1.100	<1.100	
4/23/2024 - 5/23/2024	<1.200	8.250		<1.20 4.38J	<1.200 4.100J	<1.200 1.930J	<1.20 1.98J
5/23/2024 - 5/30/2024					<1.200 4.100J		
9/25/2024 - 10/25/2024	<1.200	<1.200 3.420J		<1.20 2.10J	<1.200 1.270J	<1.200 1.690J	
10/25/2024 - 11/1/2024							

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Chromium (ug/L)

Dates	OW-209B	OW-216B	OW-401B	OW-402B	OW-403B	OW-405B
2/24/2015 - 3/20/2015	3.080	1.830	1.32	3.810	3.810	<1.240
6/12/2015 - 6/26/2015						
8/20/2015 - 9/9/2015	<1.240	<1.240	1.30	3.420	1.270	<1.240
12/11/2015 - 12/17/2015						
3/7/2016 - 3/29/2016	.476	<.355	1.64	3.130	1.440	1.670
9/12/2016 - 10/11/2016	<.355	<.355	1.10	1.110	.479	1.670
12/6/2016 - 12/15/2016			1.68	3.050		
3/17/2017 - 4/8/2017	<.729	<.729	1.85	1.790	1.460	.962
6/13/2017 - 6/21/2017						
9/6/2017 - 9/29/2017	<.729	<.729	1.63	1.410	.931	1.940
11/28/2017 - 11/30/2017						
3/12/2018 - 4/11/2018	.906	3.000	1.32	9.640	3.340	1.980
7/10/2018 - 7/17/2018						
8/29/2018 - 9/27/2018	.852	<.760	1.33	.991	2.020	4.220
12/16/2018						
3/26/2019 - 4/25/2019	<.980 1.120J	<.980	<.98 2.90J	<.980 4.890J	<.980 2.410J	<.980
9/17/2019 - 10/11/2019	<.980	<.980	<.98 2.41J	<.980 2.230J	<.980	<.980 1.420J
3/23/2020 - 4/22/2020	<1.100	<1.100	<1.10 2.90J	<1.100 1.740J		
8/18/2020 - 9/17/2020						
9/17/2020 - 10/8/2020	<1.100 1.230J	<1.100	<1.10 2.60J	21.200		
12/8/2020 - 12/10/2020						
3/11/2021 - 4/6/2021	<1.100	<1.100	<1.10 2.40J	36.000		
6/17/2021 - 6/22/2021						
10/26/2021 - 11/24/2021	<1.100	<1.100	<1.10 1.93J	5.690		
4/11/2022 - 5/11/2022	<1.100	<1.100 1.650J	<1.10 1.73J	<1.100 2.260J		
10/11/2022 - 11/10/2022	<1.100	<1.100	<1.10 1.79J	6.820		
3/20/2023 - 4/19/2023	<1.100	<1.100	<4.40	34.900		
8/8/2023 - 9/7/2023	<1.100					
9/7/2023 - 10/5/2023		<1.100	<1.10 1.50J	7.210		
4/23/2024 - 5/23/2024	<1.200	<1.200	<1.20 1.34J	<1.200		
5/23/2024 - 5/30/2024						
9/25/2024 - 10/25/2024	<1.200	<1.200	<1.20 2.24J	8.640		
10/25/2024 - 11/1/2024						

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Chromium (ug/L)

Dates	OW-406B	OW-410B	OW-411B	OW-412B	OW-413B	OW-414B
2/24/2015 - 3/20/2015	<1.240					
6/12/2015 - 6/26/2015						
8/20/2015 - 9/9/2015	<1.240					
12/11/2015 - 12/17/2015						
3/7/2016 - 3/29/2016	1.220					
9/12/2016 - 10/11/2016	1.130					
12/6/2016 - 12/15/2016		10.20	7.13	.64	2.85	3.44
3/17/2017 - 4/8/2017	1.230	2.61	2.97	6.43	3.86	4.25
6/13/2017 - 6/21/2017		1.44	1.56	2.86	5.21	5.59
9/6/2017 - 9/29/2017	1.010	3.04	1.76	3.27	14.30	11.50
11/28/2017 - 11/30/2017		2.07	1.56	2.89	11.70	8.46
3/12/2018 - 4/11/2018	.947	1.56	.87	4.48	9.70	6.21
7/10/2018 - 7/17/2018						
8/29/2018 - 9/27/2018	2.080	3.06	11.60	2.25	11.10 *	3.56 *
12/16/2018						
3/26/2019 - 4/25/2019	<.980 1.370J	<.98 2.40J	<.98 1.25J	<.98 3.94J	<.98 4.51J	<.98 2.72J
9/17/2019 - 10/11/2019	<.980	<1.96	<.98 1.60J	19.00	<.98 1.33J	<.98
3/23/2020 - 4/22/2020	<1.100 1.230J	<1.10 2.73J	<1.10 2.49J	5.26	<1.10 4.59J	<1.10
8/18/2020 - 9/17/2020	<1.100 3.510J					
9/17/2020 - 10/8/2020		<1.10 1.45J	<1.10 2.04J	<1.10 3.45J	<1.10 3.57J	<1.10 4.45J
12/8/2020 - 12/10/2020						
3/11/2021 - 4/6/2021		<1.10 2.83J	<1.10 1.64J	<1.10 1.96J	<1.10 2.61J	<1.10 4.08J
6/17/2021 - 6/22/2021						
10/26/2021 - 11/24/2021					<1.10	
4/11/2022 - 5/11/2022		<1.10 3.46J	<1.10 1.35J	6.41	<1.10 2.30J	<1.10 1.86J
10/11/2022 - 11/10/2022					<1.10 1.56J	
3/20/2023 - 4/19/2023		<1.10 4.30J	<1.10	<1.10 4.20J	<1.10 3.59J	<1.10
8/8/2023 - 9/7/2023						
9/7/2023 - 10/5/2023					<1.10 1.76J	
4/23/2024 - 5/23/2024		<1.20 4.13J	<1.20	<1.20 4.40J	6.15	<1.20
5/23/2024 - 5/30/2024						
9/25/2024 - 10/25/2024					<1.20 2.65J	
10/25/2024 - 11/1/2024						

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Cobalt (ug/L)

Dates	MW-308B	MW-312B	MW-319B	MW-409B	MW-501B	MW-601B	MW-602B
2/24/2015 - 3/20/2015	<.0528	.672	.054	20.00	1.800	.1380	2.800
6/12/2015 - 6/26/2015						.0590	1.790
8/20/2015 - 9/9/2015	<.0528	.708	.117	18.70	1.480	.0740	.319
12/11/2015 - 12/17/2015						<.0528	1.350
3/7/2016 - 3/29/2016	.0430	.891	.035	16.40	.268	.0590	.736
9/12/2016 - 10/11/2016	.0470	.923	.198	16.30	1.040	.1440	1.730
12/6/2016 - 12/15/2016							
3/17/2017 - 4/8/2017	<.0453	.955	.077	11.80	.643	.0610	.257
6/13/2017 - 6/21/2017							
9/6/2017 - 9/29/2017	.0770	.807	.248	16.30	.691	.1510	.360
11/28/2017 - 11/30/2017							
3/12/2018 - 4/11/2018	.0490	.376	1.040	7.11	4.010	.0650	.249
7/10/2018 - 7/17/2018				13.40	1.240		
8/29/2018 - 9/27/2018	.0640	.756	.737	7.90		.0880	.477
12/16/2018					.808		
3/26/2019 - 4/25/2019	<.0910	.877	2.890	13.80	<.091 .247J	<.0910 .1220J	.505
6/19/2019 - 6/25/2019							
9/17/2019 - 10/11/2019	<.0910 .1590J	1.020	1.950	14.50	1.200	<.0910	<.091 .101J
3/23/2020 - 4/22/2020			<.091 .124J	2.43	<.091	<.0910	<.091
8/5/2020 - 8/18/2020							
8/18/2020 - 9/17/2020				6.59			
9/17/2020 - 10/8/2020			<.091 .134J	6.59	.640	<.0910 .1370J	<.091 .267J
12/8/2020 - 12/10/2020							
3/11/2021 - 4/6/2021			<.091 .102J	5.41	<.091 .098J		<.091
6/17/2021 - 6/22/2021							
10/26/2021 - 11/24/2021			<.190 .302J	9.58	.898		<.190 .206J
4/11/2022 - 5/11/2022			<.190 .452J	7.88	<.190		<.190
10/11/2022 - 11/10/2022			<.190	6.22	.572		<.190
3/20/2023 - 4/19/2023			<.170 .253J	7.21	<.170 .422J		<.170 .216J
8/8/2023 - 9/7/2023							
9/7/2023 - 10/5/2023			<.170 .446J	5.81	<.170 .473J		<.170
4/23/2024 - 5/23/2024			<.170	11.10	<.170 .205J		2.850
5/23/2024 - 5/30/2024							
9/25/2024 - 10/25/2024			<.170 .296J	7.88	<.170 .411J		1.990
10/25/2024 - 11/1/2024				7.88			

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Cobalt (ug/L)

Dates	MW-603B	MW-604B	MW-605B	OW-105B	OW-113B	OW-114B	OW-205B
2/24/2015 - 3/20/2015	.754	.337	.704		.885	4.500	
6/12/2015 - 6/26/2015	7.500	.807	.322				
8/20/2015 - 9/9/2015	2.850	1.320	.270		7.090	2.650	
12/11/2015 - 12/17/2015	2.880	.966	.073				
3/7/2016 - 3/29/2016	2.190	.202	1.180	.326	2.370	2.820	3.62
9/12/2016 - 10/11/2016	1.990	.950	.280		1.930	1.210	
12/6/2016 - 12/15/2016						2.900	2.27
3/17/2017 - 4/8/2017	.200	.121	.061		3.250	2.860	2.90
6/13/2017 - 6/21/2017							3.60
9/6/2017 - 9/29/2017	.124	.675	.199		4.180	3.380	3.07
11/28/2017 - 11/30/2017							2.85
3/12/2018 - 4/11/2018	.192	.200	.115		.526	3.530	3.48
7/10/2018 - 7/17/2018							4.62
8/29/2018 - 9/27/2018	.070	.393	.113		10.900	.447	3.77
12/16/2018					.941		
3/26/2019 - 4/25/2019	<.091 .203J	<.091	<.091 .099J		4.010	1.450	4.12
6/19/2019 - 6/25/2019					13.200		
9/17/2019 - 10/11/2019	<.091	.515	<.091 .376J		13.000	1.870	3.00
3/23/2020 - 4/22/2020	<.091	<.091	<.091	<.091 .136J	15.700	1.940	5.14
8/5/2020 - 8/18/2020					21.800		
8/18/2020 - 9/17/2020			<.091 .099J				
9/17/2020 - 10/8/2020	<.091	.529		<.091	8.550	1.430	4.43
12/8/2020 - 12/10/2020				<.091 .099J			
3/11/2021 - 4/6/2021	<.091	<.091	<.091	<.091	1.710	.842	6.19
6/17/2021 - 6/22/2021				<.091			
10/26/2021 - 11/24/2021	<.190	<.190		<.190 .282J	5.410	2.850	4.35
4/11/2022 - 5/11/2022	<.190	<.190		<.190	4.730	1.340	5.01
10/11/2022 - 11/10/2022	<.190	<.190 .230J		<.190 .282J	26.100	1.950	3.49
3/20/2023 - 4/19/2023	<.170	<.170		<.170 .217J	2.620	.753	5.28
8/8/2023 - 9/7/2023							3.37
9/7/2023 - 10/5/2023	<.170	<.170 .192J		<.170	18.900	2.920	
4/23/2024 - 5/23/2024	<.170	<.170		<.170	14.400	.830	3.69
5/23/2024 - 5/30/2024					14.400		
9/25/2024 - 10/25/2024	<.170	<.170 .485J		<.170	12.600	1.920	
10/25/2024 - 11/1/2024							

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Cobalt (ug/L)

Dates	OW-209B	OW-216B	OW-401B	OW-402B	OW-403B	OW-405B	OW-406B
2/24/2015 - 3/20/2015	<.0528	4.040	38.10	6.85	<.0528	.116	<.0528
6/12/2015 - 6/26/2015							
8/20/2015 - 9/9/2015	.1050	4.270	42.30	5.23	.0740	.433	.0710
12/11/2015 - 12/17/2015							
3/7/2016 - 3/29/2016	.0530	4.300	31.90	7.93	.0370	.387	.1870
9/12/2016 - 10/11/2016	1.0000	.184	27.70	3.30	7.9000	.633	.1490
12/6/2016 - 12/15/2016			25.70	5.11			
3/17/2017 - 4/8/2017	.1110	2.000	21.00	16.70	<.0453	.086	.0640
6/13/2017 - 6/21/2017							
9/6/2017 - 9/29/2017	1.2100	.806	21.40	6.83	.1050	.599	.2520
11/28/2017 - 11/30/2017							
3/12/2018 - 4/11/2018	<.0610	.324	18.10	12.90	.0500	.115	.1680
7/10/2018 - 7/17/2018							
8/29/2018 - 9/27/2018	.5110	2.170	15.70	2.89	.0700	.214	.1560
12/16/2018							
3/26/2019 - 4/25/2019	<.0910	3.240	13.20	7.13	<.0910 .1710J	<.091 .232J	<.0910
6/19/2019 - 6/25/2019							
9/17/2019 - 10/11/2019	<.0910 .3560J	1.680	13.10	4.12	<.0910	1.650	<.0910
3/23/2020 - 4/22/2020	<.0910	2.810	12.40	3.03			<.0910
8/5/2020 - 8/18/2020							
8/18/2020 - 9/17/2020							<.0910 .1230J
9/17/2020 - 10/8/2020	<.0910	1.010	13.20	7.26			
12/8/2020 - 12/10/2020							
3/11/2021 - 4/6/2021	<.0910 .1220J	1.800	10.00	18.40			
6/17/2021 - 6/22/2021							
10/26/2021 - 11/24/2021	.5040	.509	6.70	6.74			
4/11/2022 - 5/11/2022	<.1900	<.190	3.69	9.35			
10/11/2022 - 11/10/2022	<.1900	<.190	3.22	8.33			
3/20/2023 - 4/19/2023	<.1900 .2620J	<.170	2.58	21.20			
8/8/2023 - 9/7/2023	<.1700						
9/7/2023 - 10/5/2023		<.170	2.21	7.52			
4/23/2024 - 5/23/2024	<.1700 .4750J	<.170	2.50	2.02			
5/23/2024 - 5/30/2024							
9/25/2024 - 10/25/2024	<.1700	<.170	2.87	7.99			
10/25/2024 - 11/1/2024							

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Cobalt (ug/L)

Dates	OW-410B	OW-411B	OW-412B	OW-413B	OW-414B
2/24/2015 - 3/20/2015					
6/12/2015 - 6/26/2015					
8/20/2015 - 9/9/2015					
12/11/2015 - 12/17/2015					
3/7/2016 - 3/29/2016					
9/12/2016 - 10/11/2016					
12/6/2016 - 12/15/2016	7.600	5.74	2.000	1.98	9.91
3/17/2017 - 4/8/2017	3.650	2.83	2.820	2.98	25.50
6/13/2017 - 6/21/2017	2.380	2.86	2.090	2.70	16.80
9/6/2017 - 9/29/2017	3.480	3.00	2.140	1.58	12.60
11/28/2017 - 11/30/2017	3.100	3.61	1.840	2.67	15.10
3/12/2018 - 4/11/2018	.379	3.13	1.510	5.28	22.40
7/10/2018 - 7/17/2018					
8/29/2018 - 9/27/2018	4.100	1.67 *	<.061	5.26 *	20.50 *
12/16/2018					
3/26/2019 - 4/25/2019	5.400	3.56	1.610	5.03	23.50
6/19/2019 - 6/25/2019					
9/17/2019 - 10/11/2019	2.520	6.11	1.610	3.90	16.90
3/23/2020 - 4/22/2020	7.340	8.02	1.360	4.24	18.60
8/5/2020 - 8/18/2020					
8/18/2020 - 9/17/2020					
9/17/2020 - 10/8/2020	2.040	10.90	1.530	2.97	14.20
12/8/2020 - 12/10/2020					
3/11/2021 - 4/6/2021	11.600	7.26	1.530	4.66	18.80
6/17/2021 - 6/22/2021					
10/26/2021 - 11/24/2021				2.46	
4/11/2022 - 5/11/2022	17.300	5.47	1.690	4.91	26.60
10/11/2022 - 11/10/2022				2.22	
3/20/2023 - 4/19/2023	14.300	3.37	1.750	4.37	24.70
8/8/2023 - 9/7/2023					
9/7/2023 - 10/5/2023				3.14	
4/23/2024 - 5/23/2024	13.800	1.41	1.030	5.23	19.10
5/23/2024 - 5/30/2024					
9/25/2024 - 10/25/2024				2.82	
10/25/2024 - 11/1/2024					

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Copper (ug/L)

Dates	MW-308B	MW-312B	MW-319B	MW-409B	MW-501B	MW-601B	MW-602B	MW-603B
2/24/2015 - 3/20/2015	<.485	<.485	<.485	<.485	3.94	<.485	8.96	1.74
6/12/2015 - 6/26/2015						.633	1.68	1.04
8/20/2015 - 9/9/2015	1.010	<.485	<.485	1.260	3.49	1.640	4.50	1.21
12/11/2015 - 12/17/2015						.698	8.57	1.06
3/7/2016 - 3/29/2016	1.470	<1.220	<1.220	1.970	<1.22	2.360	6.63	1.37
9/12/2016 - 10/11/2016	<1.220	<1.220	<1.220	<1.220	<1.22	<1.220	4.68	<1.22
12/6/2016 - 12/15/2016								
3/17/2017 - 4/8/2017	<2.190	<2.190	<2.190	<2.190	<2.19	<2.190	<2.19	<2.19
6/13/2017 - 6/21/2017								
9/6/2017 - 9/29/2017	<2.190	<2.190	<2.190	<2.190	<2.19	<2.190	<2.19	<2.19
11/28/2017 - 11/30/2017								
3/12/2018 - 4/11/2018	<2.190	3.050	<1.600	<1.600	1.90	<1.600	<1.60	<1.60
7/10/2018 - 7/17/2018				<1.600	<1.60			
8/29/2018 - 9/27/2018	<1.600	<1.600	<1.600	<1.600		<1.600	<1.60	<1.60
12/16/2018					2.01			
3/26/2019 - 4/25/2019	<2.000	<2.000	<2.000	<2.000	<2.00	<2.000	<2.00	<2.00
9/17/2019 - 10/11/2019	<2.000	<2.000	<2.000 3.890J	<2.000	<2.00	<2.000	<2.00	<2.00
3/23/2020 - 4/22/2020			<3.200	<3.200	<3.20	<3.200	<3.20	<3.20
8/5/2020 - 8/18/2020								
8/18/2020 - 9/17/2020				<1.500 3.340J				
9/17/2020 - 10/8/2020			<1.500 1.660J	<1.500 3.340J	<1.50	<1.500	<1.50	<1.50
12/8/2020 - 12/10/2020								
3/11/2021 - 4/6/2021			<1.400	<1.400	<1.40 2.77J		<1.40	<1.40
6/17/2021 - 6/22/2021								
10/26/2021 - 11/24/2021			<1.400 1.810J	<1.400 1.760J	<1.40 2.25J		<1.40	<1.40
4/11/2022 - 5/11/2022			<1.800 2.140J	<1.800 3.070J	<1.80 2.19J		<1.80	<1.80
7/14/2022 - 7/27/2022								
10/11/2022 - 11/10/2022			<1.800 2.520J	<1.800	<1.80 3.18J		<1.80	<1.80
3/20/2023 - 4/19/2023			<1.800	<1.800 2.490J	<1.80 2.71J		<1.80	<1.80
8/8/2023 - 9/7/2023								
9/7/2023 - 10/5/2023			<1.800	<1.800	<1.80 3.12J		<1.80	<1.80
4/23/2024 - 5/23/2024			<1.800 2.540J	5.000	<1.80 2.17J		<1.80	<1.80
5/23/2024 - 5/30/2024								
9/25/2024 - 10/25/2024			<1.800	<1.800	<1.80 2.50J		<1.80	<1.80
10/25/2024 - 11/1/2024				<1.800				

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Copper (ug/L)

Dates	MW-604B	MW-605B	OW-105B	OW-113B	OW-114B	OW-205B	OW-209B
2/24/2015 - 3/20/2015	14.10	5.77		<.485	<.485		3.45
6/12/2015 - 6/26/2015	2.52	2.87					
8/20/2015 - 9/9/2015	2.30	3.74		<.485	1.360		6.93
12/11/2015 - 12/17/2015	2.67	2.51					
3/7/2016 - 3/29/2016	2.29	3.02	<1.22	<1.220	2.510	<1.22	6.71
9/12/2016 - 10/11/2016	<1.22	2.16		<1.220	<1.220		4.88
12/6/2016 - 12/15/2016					2.000	<1.22	
3/17/2017 - 4/8/2017	<2.19	<2.19		<2.190	<2.190	<2.19	7.24
6/13/2017 - 6/21/2017						<2.19	
9/6/2017 - 9/29/2017	<2.19	<2.19		<2.190	<2.190	<2.19	<2.19
11/28/2017 - 11/30/2017						<2.19	
3/12/2018 - 4/11/2018	<1.60	<2.19		<1.600	<2.190	<2.19	6.32
7/10/2018 - 7/17/2018						45.80	
8/29/2018 - 9/27/2018	<1.60	<1.60		<1.600	4.300	<1.60	3.41
12/16/2018							
3/26/2019 - 4/25/2019	<2.00	<2.00		<2.000	<2.000	<2.00	<2.00 4.31J
9/17/2019 - 10/11/2019	<2.00	<2.00		<2.000	<2.000	<2.00	<2.00 4.15J
3/23/2020 - 4/22/2020	<3.20	<3.20	<3.20	<3.200	<3.200	<3.20	5.47
8/5/2020 - 8/18/2020							5.67
8/18/2020 - 9/17/2020		<1.50					
9/17/2020 - 10/8/2020	<1.50 2.65J		<1.50	<1.500	<1.500	<1.50	<1.50 3.91J
12/8/2020 - 12/10/2020			<1.50				
3/11/2021 - 4/6/2021	<1.40 2.05J	<1.40	<1.40	<1.400	<1.400 3.800J	<1.40	<1.40 4.65J
6/17/2021 - 6/22/2021			<1.40				
10/26/2021 - 11/24/2021	<1.40		<1.40	<1.400	<1.400	<1.40	<1.40 2.75J
4/11/2022 - 5/11/2022	<1.80		<1.80	<1.800	<1.800 3.140J	<1.80	5.73
7/14/2022 - 7/27/2022							<1.80 4.25J
10/11/2022 - 11/10/2022	<1.80		<1.80	<1.800	<1.800	<1.80	<1.80 4.60J
3/20/2023 - 4/19/2023	<1.80		<1.80	<1.800	<1.800 4.230J	<1.80	<1.80 4.74J
8/8/2023 - 9/7/2023						<1.80	<1.80 3.90J
9/7/2023 - 10/5/2023	<1.80		<1.80	<1.800	<1.800		
4/23/2024 - 5/23/2024	<1.80		<1.80	<1.800	<1.800 2.930J	<1.80	<1.80 4.73J
5/23/2024 - 5/30/2024				<1.800			
9/25/2024 - 10/25/2024	<1.80		<1.80	<1.800	<1.800		<1.80 3.13J
10/25/2024 - 11/1/2024							

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Copper (ug/L)

Dates	OW-216B	OW-401B	OW-402B	OW-403B	OW-405B	OW-406B	OW-410B	OW-411B
2/24/2015 - 3/20/2015	<.485	<.485	2.37	1.03	<.485	<.485		
6/12/2015 - 6/26/2015								
8/20/2015 - 9/9/2015	<.485	<.485	1.30	1.54	<.485	<.485		
12/11/2015 - 12/17/2015								
3/7/2016 - 3/29/2016	<1.220	1.390	3.45	1.29	<1.220	<1.220		
9/12/2016 - 10/11/2016	<1.220	<1.220	<1.22	<1.22	<1.220	<1.220		
12/6/2016 - 12/15/2016		1.260	2.30				3.01	4.70
3/17/2017 - 4/8/2017	<2.190	<2.190	5.38	<2.19	<2.190	<2.190	5.30	2.85
6/13/2017 - 6/21/2017							2.47	<2.19
9/6/2017 - 9/29/2017	<2.190	<2.190	<2.19	<2.19	<2.190	<2.190	3.31	<2.19
11/28/2017 - 11/30/2017							<2.19	<2.19
3/12/2018 - 4/11/2018	<1.600	<1.600	3.84	<2.19	<2.190	<2.190	<1.60	<1.60
7/10/2018 - 7/17/2018								
8/29/2018 - 9/27/2018	<1.600	<1.600	<1.60	<1.60	<1.600	<1.600	<1.60	<1.60
12/16/2018								
3/26/2019 - 4/25/2019	<2.000	<2.000 2.020J	<2.00 2.10J	<2.00	<2.000	<2.000	<2.00	<2.00
9/17/2019 - 10/11/2019	<2.000	<2.000	<2.00	<2.00	<2.000	<2.000	<4.00	<2.00
3/23/2020 - 4/22/2020	<3.200	<3.200	<3.20			<3.200	<3.20	<3.20
8/5/2020 - 8/18/2020								
8/18/2020 - 9/17/2020						<1.500		
9/17/2020 - 10/8/2020	<1.500	<1.500 1.760J	<1.50 4.01J				<1.50	<1.50
12/8/2020 - 12/10/2020								
3/11/2021 - 4/6/2021	<1.400	<1.400	5.69				<1.40	<1.40
6/17/2021 - 6/22/2021								
10/26/2021 - 11/24/2021	<1.400	<1.400	<1.40 4.23J					
4/11/2022 - 5/11/2022	<1.800 2.500J	<1.800 2.200J	<1.80 3.08J				<1.80	<1.80
7/14/2022 - 7/27/2022								
10/11/2022 - 11/10/2022	<1.800 2.840J	<1.800	<1.80 2.82J					
3/20/2023 - 4/19/2023	<1.800	<7.200	7.64				<1.80	<1.80
8/8/2023 - 9/7/2023								
9/7/2023 - 10/5/2023	<1.800	<1.800	<1.80 4.89J					
4/23/2024 - 5/23/2024	<1.800	<1.800	<1.80				<1.80	<1.80
5/23/2024 - 5/30/2024								
9/25/2024 - 10/25/2024	<1.800	<1.800	<1.80 3.87J					
10/25/2024 - 11/1/2024								

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Table 9

Analytical Data Summary for Copper (ug/L)

Dates	OW-412B	OW-413B	OW-414B
2/24/2015 - 3/20/2015			
6/12/2015 - 6/26/2015			
8/20/2015 - 9/9/2015			
12/11/2015 - 12/17/2015			
3/7/2016 - 3/29/2016			
9/12/2016 - 10/11/2016			
12/6/2016 - 12/15/2016	3.58	<1.22	3.59
3/17/2017 - 4/8/2017	<2.19	<2.19	2.58
6/13/2017 - 6/21/2017	<2.19	<2.19	<2.19
9/6/2017 - 9/29/2017	<2.19	<2.19	6.43
11/28/2017 - 11/30/2017	<2.19	<2.19	<2.19
3/12/2018 - 4/11/2018	<1.60	<1.60	<1.60
7/10/2018 - 7/17/2018			
8/29/2018 - 9/27/2018	<1.60	<1.60 *	<1.60 *
12/16/2018			
3/26/2019 - 4/25/2019	<2.00	<2.00	6.78
9/17/2019 - 10/11/2019	<2.00	<2.00	<2.00
3/23/2020 - 4/22/2020	<3.20	<3.20	<3.20
8/5/2020 - 8/18/2020			
8/18/2020 - 9/17/2020			
9/17/2020 - 10/8/2020	<1.50	<1.50	<1.50 1.62J
12/8/2020 - 12/10/2020			
3/11/2021 - 4/6/2021	<1.40	<1.40	<1.40
6/17/2021 - 6/22/2021			
10/26/2021 - 11/24/2021		<1.40	
4/11/2022 - 5/11/2022	<1.80	<1.80	<1.80
7/14/2022 - 7/27/2022			
10/11/2022 - 11/10/2022		<1.80	
3/20/2023 - 4/19/2023	<1.80	<1.80	<1.80 3.38J
8/8/2023 - 9/7/2023			
9/7/2023 - 10/5/2023		<1.80	
4/23/2024 - 5/23/2024	<1.80	<1.80 3.27J	<1.80 2.74J
5/23/2024 - 5/30/2024			
9/25/2024 - 10/25/2024		<1.80	
10/25/2024 - 11/1/2024			

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Lead (ug/L)

Dates	MW-308B	MW-312B	MW-319B	MW-409B	MW-501B	MW-601B	MW-602B
2/24/2015 - 3/20/2015	<.0967	<.0967	<.0967	<.0967	.223	.261	.1330
6/12/2015 - 6/26/2015						.119	<.0967
8/20/2015 - 9/9/2015	<.0967	<.0967	.1230	.1910	.243	.123	.1370
12/11/2015 - 12/17/2015						.113	.2330
3/7/2016 - 3/29/2016	<.2110	<.2110	<.2110	.4790	<.211	<.211	.2980
9/12/2016 - 10/11/2016	<.2110	.2230	<.2110	<.2110	<.211	.255	.4610
12/6/2016 - 12/15/2016							
3/17/2017 - 4/8/2017	<.3240	<.3240	<.3240	<.3240	<.324	<.324	<.3240
6/13/2017 - 6/21/2017							
9/6/2017 - 9/29/2017	<.3240	<.3240	<.3240	<.3240	<.324	<.324	<.3240
11/28/2017 - 11/30/2017							
3/12/2018 - 4/11/2018	<.3240	.6570	<.2500	<.2500	<.250	<.250	<.2500
7/10/2018 - 7/17/2018				<.2500	<.250		
8/29/2018 - 9/27/2018	<.2500	<.2500	<.2500	<.2500		<.250	<.2500
12/16/2018					.312		
3/26/2019 - 4/25/2019	<.2700	<.2700	<.2700	<.2700	<.270	<.270	<.2700
9/17/2019 - 10/11/2019	<.2700	<.2700	<.2700	<.2700	<.270	<.270	<.2700
3/23/2020 - 4/22/2020			<.2700	<.2700	<.270	<.270	<.2700
8/18/2020 - 9/17/2020				<.1100 .3830J			
9/17/2020 - 10/8/2020			<.1100	<.1100 .3830J	<.110	<.110 .147J	<.1100 .2230J
12/8/2020 - 12/10/2020							
3/11/2021 - 4/6/2021			<.2100	<.2100 .2930J	<.210		<.2100
6/17/2021 - 6/22/2021							
10/26/2021 - 11/24/2021			<.2100	<.2100 .4680J	<.210		<.2100
4/11/2022 - 5/11/2022			<.2400	<.2400	<.240		<.2400
10/11/2022 - 11/10/2022			<.2400	<.2400	<.240		<.2400
3/20/2023 - 4/19/2023			<.2400	<.2400	<.240		<.2400
8/8/2023 - 9/7/2023							
9/7/2023 - 10/5/2023			<.2400	<.2400 .2910J	<.240		<.2400
4/23/2024 - 5/23/2024			<.2600	<.2600 .3300J	<.260		<.2600
5/23/2024 - 5/30/2024							
9/25/2024 - 10/25/2024			<.2600 .2780J	<.2600	<.260		<.2600
10/25/2024 - 11/1/2024				<.2600			

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Lead (ug/L)

Dates	MW-603B	MW-604B	MW-605B	OW-105B	OW-113B	OW-114B	OW-205B	OW-209B
2/24/2015 - 3/20/2015	.814	1.2500	.2590		<.0967	.1460		<.0967
6/12/2015 - 6/26/2015	.189	<.0967	<.0967					
8/20/2015 - 9/9/2015	.219	.1040	<.0967		<.0967	<.0967		<.0967
12/11/2015 - 12/17/2015	3.050	.0990	<.0967					
3/7/2016 - 3/29/2016	<.211	<.2110	.2760	<.211	<.2110	<.2110	.269	<.2110
9/12/2016 - 10/11/2016	<.211	<.2110	<.2110		<.2110	<.2110		<.2110
12/6/2016 - 12/15/2016						<.2110	<.211	
3/17/2017 - 4/8/2017	<.324	<.3240	<.3240		<.3240	<.3240	<.324	<.3240
6/13/2017 - 6/21/2017							<.324	
9/6/2017 - 9/29/2017	<.324	<.3240	<.3240		<.3240	.9790	<.324	<.3240
11/28/2017 - 11/30/2017							<.324	
3/12/2018 - 4/11/2018	<.250	<.2500	<.3240		<.2500	<.3240	<.324	<.2500
7/10/2018 - 7/17/2018							16.200	
8/29/2018 - 9/27/2018	<.250	<.2500	<.2500		<.2500	<.2500	<.250	<.2500
12/16/2018								
3/26/2019 - 4/25/2019	<.270	<.2700	<.2700		<.2700	<.2700	<.270	<.2700
9/17/2019 - 10/11/2019	<.270	<.2700	<.2700		<.2700	<.2700	<.270	<.2700
3/23/2020 - 4/22/2020	<.270	<.2700	<.2700	<.270	<.2700	<.2700	<.270	<.2700
8/18/2020 - 9/17/2020			<.1100					
9/17/2020 - 10/8/2020	<.110	<.1100		<.110	<.1100	<.1100	<.110	<.1100
12/8/2020 - 12/10/2020				<.110				
3/11/2021 - 4/6/2021	<.210	<.2100	<.2100	<.210	<.2100	<.2100	<.210	<.2100
6/17/2021 - 6/22/2021				<.210				
10/26/2021 - 11/24/2021	<.210	<.2100		<.210	<.2100	<.2100	<.210	<.2100
4/11/2022 - 5/11/2022	<.240	<.2400		<.240	<.2400	<.2400	<.240	<.2400
10/11/2022 - 11/10/2022	<.240	<.2400		<.240	<.2400	<.2400	<.240	<.2400
3/20/2023 - 4/19/2023	<.240	<.2400		<.240	<.2400	<.2400	<.240	<.2400
8/8/2023 - 9/7/2023							<.240	<.2400
9/7/2023 - 10/5/2023	<.240	<.2400 .2660J		<.240	<.2400	<.2400		
4/23/2024 - 5/23/2024	<.260	<.2600		<.260	<.2600	<.2600	<.260	<.2600
5/23/2024 - 5/30/2024					<.2600			
9/25/2024 - 10/25/2024	<.260	<.2600		<.260	<.2600	<.2600		<.2600
10/25/2024 - 11/1/2024								

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Table 9

Analytical Data Summary for Lead (ug/L)

Dates	OW-216B	OW-401B	OW-402B	OW-403B	OW-405B	OW-406B	OW-410B	OW-411B
2/24/2015 - 3/20/2015	<.0967	.164	<.0967	<.0967	<.0967	<.0967		
6/12/2015 - 6/26/2015								
8/20/2015 - 9/9/2015	<.0967	.158	<.0967	<.0967	<.0967	<.0967		
12/11/2015 - 12/17/2015								
3/7/2016 - 3/29/2016	<.2110	.246	<.2110	<.2110	<.2110	.3310		
9/12/2016 - 10/11/2016	<.2110	.299	<.2110	<.2110	<.2110	<.2110		
12/6/2016 - 12/15/2016		.909	<.2110				<.211	<.211
3/17/2017 - 4/8/2017	<.3240	.331	<.3240	<.3240	<.3240	<.3240	<.324	<.324
6/13/2017 - 6/21/2017							<.324	<.324
9/6/2017 - 9/29/2017	<.3240	.590	<.3240	<.3240	<.3240	<.3240	<.324	<.324
11/28/2017 - 11/30/2017							.333	<.324
3/12/2018 - 4/11/2018	<.2500	.252	<.2500	<.3240	<.3240	<.3240	<.250	<.250
7/10/2018 - 7/17/2018								
8/29/2018 - 9/27/2018	<.2500	.333	<.2500	<.2500	<.2500	.2920	<.250	1.340
12/16/2018								
3/26/2019 - 4/25/2019	<.2700	.780	<.2700	<.2700	<.2700	<.2700	<.270	<.270
9/17/2019 - 10/11/2019	<.2700	<.270 .490J	<.2700	<.2700	<.2700	<.2700	<.540	<.270
3/23/2020 - 4/22/2020	<.2700	1.130	<.2700			<.2700	<.270	<.270
8/18/2020 - 9/17/2020						<.1100 .1260J		
9/17/2020 - 10/8/2020	<.1100	.671	<.1100				<.110	<.110
12/8/2020 - 12/10/2020								
3/11/2021 - 4/6/2021	<.2100	1.050	<.2100				<.210	<.210
6/17/2021 - 6/22/2021								
10/26/2021 - 11/24/2021	<.2100	<.210 .329J	<.2100					
4/11/2022 - 5/11/2022	<.2400	.640	<.2400				<.240 .261J	<.240
10/11/2022 - 11/10/2022	<.2400	<.240 .387J	<.2400					
3/20/2023 - 4/19/2023	<.2400	<.960	<.2400				<.240	<.240
8/8/2023 - 9/7/2023								
9/7/2023 - 10/5/2023	<.2400	<.240	<.2400					
4/23/2024 - 5/23/2024	<.2600	<.260	<.2600				<.260	<.260
5/23/2024 - 5/30/2024								
9/25/2024 - 10/25/2024	<.2600	<.260 .312J	<.2600					
10/25/2024 - 11/1/2024								

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Table 9

Analytical Data Summary for Lead (ug/L)

Dates	OW-412B	OW-413B	OW-414B
2/24/2015 - 3/20/2015			
6/12/2015 - 6/26/2015			
8/20/2015 - 9/9/2015			
12/11/2015 - 12/17/2015			
3/7/2016 - 3/29/2016			
9/12/2016 - 10/11/2016			
12/6/2016 - 12/15/2016	<.211	.440	<.211
3/17/2017 - 4/8/2017	.439	<.324	<.324
6/13/2017 - 6/21/2017	.387	<.324	<.324
9/6/2017 - 9/29/2017	.360	<.324	<.324
11/28/2017 - 11/30/2017	.487	<.324	<.324
3/12/2018 - 4/11/2018	.642	.293	<.250
7/10/2018 - 7/17/2018			
8/29/2018 - 9/27/2018	.610	.295 *	<.250 *
12/16/2018			
3/26/2019 - 4/25/2019	.514	<.270 .411J	<.270
9/17/2019 - 10/11/2019	1.780	<.270	<.270
3/23/2020 - 4/22/2020	.704	<.270	<.270
8/18/2020 - 9/17/2020			
9/17/2020 - 10/8/2020	<.110 .489J	<.110	<.110 .136J
12/8/2020 - 12/10/2020			
3/11/2021 - 4/6/2021	<.210	<.210	<.210
6/17/2021 - 6/22/2021			
10/26/2021 - 11/24/2021		<.210	
4/11/2022 - 5/11/2022	.573	<.240	<.240
10/11/2022 - 11/10/2022		<.240	
3/20/2023 - 4/19/2023	<.240	<.240	<.240
8/8/2023 - 9/7/2023			
9/7/2023 - 10/5/2023		<.240	
4/23/2024 - 5/23/2024	<.260 .339J	1.060	<.260
5/23/2024 - 5/30/2024			
9/25/2024 - 10/25/2024		<.260 .286J	
10/25/2024 - 11/1/2024			

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Mercury (ug/L)

Dates	MW-312B	MW-409B	MW-501B	OW-113B	OW-114B	OW-205B	OW-209B	OW-401B
2/24/2015 - 3/20/2015		<.0710						
8/20/2015 - 9/9/2015		<.0926			<.0926		<.0926	.0935
1/26/2016 - 1/27/2016								<.0926
9/12/2016 - 10/11/2016		<.1420			<.1420		<.1420	<.1420
9/6/2017 - 9/29/2017		<.1120			<.1120			<.1120
8/29/2018 - 9/27/2018		<.1500			<.1500	<.15		<.1500
9/17/2019 - 10/11/2019	<.1	<.1000			<.1000	<.10		<.1000
9/17/2020 - 10/8/2020			<.1	<.10	<.1000	<.10	<.1000	<.1000
10/26/2021 - 11/24/2021		<.1500		<.15		<.15		<.1500
10/11/2022 - 11/10/2022		<.1100		<.11		<.11		<.1100

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Mercury (ug/L)

Dates	OW-402B
2/24/2015 - 3/20/2015	
8/20/2015 - 9/9/2015	.1530
1/26/2016 - 1/27/2016	<.0926
9/12/2016 - 10/11/2016	<.1420
9/6/2017 - 9/29/2017	<.1120
8/29/2018 - 9/27/2018	<.1500
9/17/2019 - 10/11/2019	<.1000
9/17/2020 - 10/8/2020	<.1000
10/26/2021 - 11/24/2021	<.1500
10/11/2022 - 11/10/2022	<.1100

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Nickel (ug/L)

Dates	MW-308B	MW-312B	MW-319B	MW-409B	MW-501B	MW-601B	MW-602B
2/24/2015 - 3/20/2015	1.13	23.20	17.7	12.50	53.80	1.570	248.00
6/12/2015 - 6/26/2015						<.581	108.00
8/20/2015 - 9/9/2015	1.66	21.60	52.7	17.20	21.70	4.470	18.00
12/11/2015 - 12/17/2015						1.420	45.40
3/7/2016 - 3/29/2016	1.56	16.00	49.3	10.90	12.20	<1.530	19.30
9/12/2016 - 10/11/2016	1.99	14.30	71.4	7.94	8.18	2.250	16.70
12/6/2016 - 12/15/2016							
3/17/2017 - 4/8/2017	2.04	13.00	46.2	6.20	7.12	<.929	4.99
6/13/2017 - 6/21/2017							
9/6/2017 - 9/29/2017	1.45	9.98	47.8	8.80	7.93	1.830	6.17
11/28/2017 - 11/30/2017							
3/12/2018 - 4/11/2018	1.44	9.24	344.0	5.46	21.70	<1.000	3.57
7/10/2018 - 7/17/2018				11.20	19.60		
8/29/2018 - 9/27/2018	2.45	8.17	210.0	3.93		<3.000	7.26
12/16/2018			399.0		6.00		
3/26/2019 - 4/25/2019	<1.70	10.10	223.0	10.20	6.71	<1.700	<1.70 4.67J
9/17/2019 - 10/11/2019	<1.70 1.85J	10.60	229.0	9.53	12.50	<1.700	<1.70 2.61J
3/23/2020 - 4/22/2020			81.0	<1.90 2.52J	6.01	<1.900	<1.90 2.14J
8/5/2020 - 8/18/2020							
8/18/2020 - 9/17/2020				7.11			
9/17/2020 - 10/8/2020			56.9	7.11	7.97	<1.900	<1.90 4.48J
12/8/2020 - 12/10/2020							
3/11/2021 - 4/6/2021			59.3	5.79	<1.90 4.87J		<1.90 2.21J
6/17/2021 - 6/22/2021							
10/26/2021 - 11/24/2021			52.1	8.21	15.20		<1.90 2.82J
2/8/2022 - 2/9/2022							
4/11/2022 - 5/11/2022			47.9	7.00	<1.90 3.45J		<1.90
10/11/2022 - 11/10/2022			57.4	<1.90 4.59J	11.50		<1.90 2.34J
3/20/2023 - 4/19/2023			64.8	5.14	<1.90 4.43J		<1.90 2.17J
8/8/2023 - 9/7/2023							
9/7/2023 - 10/5/2023			39.0	6.15	10.60		<1.90
4/23/2024 - 5/23/2024			60.2	9.19	5.20		9.51
5/23/2024 - 5/30/2024							
9/25/2024 - 10/25/2024			38.4	6.66	14.00		27.50
10/25/2024 - 11/1/2024				6.66			

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Nickel (ug/L)

Dates	MW-603B	MW-604B	MW-605B	OW-105B	OW-113B	OW-114B	OW-205B
2/24/2015 - 3/20/2015	4.430	5.49	4.19		9.52	23.20	
6/12/2015 - 6/26/2015	209.000	3.79	1.32				
8/20/2015 - 9/9/2015	46.000	4.77	3.56		12.30	13.80	
12/11/2015 - 12/17/2015	60.000	7.50	1.94				
3/7/2016 - 3/29/2016	13.900	1.92	3.47	5.91	8.26	9.25	7.66
9/12/2016 - 10/11/2016	3.610	4.18	2.66		3.26	1.99	
12/6/2016 - 12/15/2016						22.10	5.57
3/17/2017 - 4/8/2017	<.929	2.00	1.30		9.32	12.20	7.27
6/13/2017 - 6/21/2017							8.67
9/6/2017 - 9/29/2017	<.929	3.46	1.58		9.34	15.30	6.65
11/28/2017 - 11/30/2017							6.69
3/12/2018 - 4/11/2018	1.300	2.16	1.35		17.40	17.00	7.62
7/10/2018 - 7/17/2018							<20.00
8/29/2018 - 9/27/2018	<3.000	<3.00	2.60		14.00	<3.00	9.79
12/16/2018							
3/26/2019 - 4/25/2019	<1.700 2.010J	<1.70 1.75J	<1.70		22.70	7.17	10.70
9/17/2019 - 10/11/2019	<1.700	17.30	<1.70 4.15J		17.60	10.50	11.50
3/23/2020 - 4/22/2020	<1.900	<1.90 2.49J	<1.90	<1.90 4.75J	19.30	8.69	15.90
8/5/2020 - 8/18/2020					17.40		
8/18/2020 - 9/17/2020			<1.90				
9/17/2020 - 10/8/2020	<1.900	24.90		5.82	14.40	9.32	12.30
12/8/2020 - 12/10/2020				5.81			
3/11/2021 - 4/6/2021	<1.900	7.18	<1.90	<1.90 4.73J	15.60	6.85	18.80
6/17/2021 - 6/22/2021				<1.90 4.30J			
10/26/2021 - 11/24/2021	<1.900	5.72		15.00	12.60	12.80	12.30
2/8/2022 - 2/9/2022							
4/11/2022 - 5/11/2022	<1.900	<1.90 3.59J		<1.90 3.04J	21.20	10.30	14.60
10/11/2022 - 11/10/2022	<1.900	6.12		9.39	26.20	19.90	10.70
3/20/2023 - 4/19/2023	<1.900	<1.90 3.83J		<1.90 2.71J	19.10	12.00	16.20
8/8/2023 - 9/7/2023							9.57
9/7/2023 - 10/5/2023	<1.900	6.75		7.04	20.60	16.20	
4/23/2024 - 5/23/2024	<2.100	<2.10 4.72J		<2.10	20.90	13.00	12.60
5/23/2024 - 5/30/2024					20.90		
9/25/2024 - 10/25/2024	<2.100	5.50		<2.10 3.61J	15.90	14.00	
10/25/2024 - 11/1/2024							

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Nickel (ug/L)

Dates	OW-209B	OW-216B	OW-401B	OW-402B	OW-403B	OW-405B	OW-406B	OW-410B
2/24/2015 - 3/20/2015	3.72	7.87	55.4	200.0	2.65	1.59	<.581	
6/12/2015 - 6/26/2015								
8/20/2015 - 9/9/2015	15.10	8.66	76.5	143.0	2.41	2.77	<.581	
12/11/2015 - 12/17/2015								
3/7/2016 - 3/29/2016	5.67	6.71	53.4	441.0	2.50	<1.53	<1.530	
9/12/2016 - 10/11/2016	13.60	2.62	48.2	55.0	9.37	5.72	1.860	
12/6/2016 - 12/15/2016			51.6	171.0				195.00
3/17/2017 - 4/8/2017	8.51	3.81	50.9	722.0	2.36	2.37	.973	35.80
6/13/2017 - 6/21/2017								22.40
9/6/2017 - 9/29/2017	12.00	3.60	55.7	258.0	2.92	6.54	<.929	23.00
11/28/2017 - 11/30/2017								19.10
3/12/2018 - 4/11/2018	10.20	5.85	47.2	836.0	2.19	1.50	1.290	3.75
7/10/2018 - 7/17/2018								
8/29/2018 - 9/27/2018	10.70	6.20	30.4	97.3	<3.00	3.64	2.320	16.60
12/16/2018								
3/26/2019 - 4/25/2019	5.85	6.28	55.7	328.0	<1.70 1.96J	<1.70	<1.700	26.30
9/17/2019 - 10/11/2019	11.50	<1.70 4.44J	57.9	144.0	<1.70 2.08J	24.20	<1.700	22.60
3/23/2020 - 4/22/2020	5.14	<1.90 3.95J	53.9	73.1			<1.900	37.20
8/5/2020 - 8/18/2020								
8/18/2020 - 9/17/2020							<1.900	
9/17/2020 - 10/8/2020	5.95	<1.90 3.33J	60.4	396.0				28.80
12/8/2020 - 12/10/2020								
3/11/2021 - 4/6/2021	5.26	<1.90 3.71J	54.2	988.0				54.90
6/17/2021 - 6/22/2021								
10/26/2021 - 11/24/2021	10.30	<1.90 4.40J	46.3	322.0				
2/8/2022 - 2/9/2022	<1.90 3.94J							
4/11/2022 - 5/11/2022	6.12	<1.90 2.55J	43.5	602.0				55.50
10/11/2022 - 11/10/2022	6.74	<1.90 3.17J	42.0	460.0				
3/20/2023 - 4/19/2023	<1.90 4.94J	<1.90	50.1	1270.0				50.90
8/8/2023 - 9/7/2023	8.76							
9/7/2023 - 10/5/2023		<1.90	40.0	402.0				
4/23/2024 - 5/23/2024	6.86	<2.10	47.0	30.4				52.10
5/23/2024 - 5/30/2024								
9/25/2024 - 10/25/2024	7.39	<2.10	38.3	353.0				
10/25/2024 - 11/1/2024								

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Nickel (ug/L)

Dates	OW-411B	OW-412B	OW-413B	OW-414B
2/24/2015 - 3/20/2015				
6/12/2015 - 6/26/2015				
8/20/2015 - 9/9/2015				
12/11/2015 - 12/17/2015				
3/7/2016 - 3/29/2016				
9/12/2016 - 10/11/2016				
12/6/2016 - 12/15/2016	126.00	10.50	19.50	118.0
3/17/2017 - 4/8/2017	30.00	37.30	7.99	69.0
6/13/2017 - 6/21/2017	26.70	19.50	6.02	54.3
9/6/2017 - 9/29/2017	18.50	11.70	1.76	63.9
11/28/2017 - 11/30/2017	18.30	10.20	3.42	67.6
3/12/2018 - 4/11/2018	18.00	7.81	5.37	54.6
7/10/2018 - 7/17/2018				
8/29/2018 - 9/27/2018	7.86 *	<1.00	<3.00 *	52.2 *
12/16/2018				
3/26/2019 - 4/25/2019	23.30	9.67	7.47	68.2
9/17/2019 - 10/11/2019	25.70	8.95	<1.70 3.70J	92.9
3/23/2020 - 4/22/2020	28.90	10.10	<1.90 3.89J	83.7
8/5/2020 - 8/18/2020				
8/18/2020 - 9/17/2020				
9/17/2020 - 10/8/2020	33.30	12.40	<1.90 3.70J	116.0
12/8/2020 - 12/10/2020				
3/11/2021 - 4/6/2021	29.90	14.40	<1.90 4.90J	93.3
6/17/2021 - 6/22/2021				
10/26/2021 - 11/24/2021			<1.90 3.60J	
2/8/2022 - 2/9/2022				
4/11/2022 - 5/11/2022	31.20	16.60	<1.90 4.59J	72.5
10/11/2022 - 11/10/2022			<1.90 3.01J	
3/20/2023 - 4/19/2023	29.90	21.30	5.23	74.5
8/8/2023 - 9/7/2023				
9/7/2023 - 10/5/2023			<1.90 2.03J	
4/23/2024 - 5/23/2024	28.50	20.50	7.58	67.2
5/23/2024 - 5/30/2024				
9/25/2024 - 10/25/2024			5.01	
10/25/2024 - 11/1/2024				

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Selenium (ug/L)

Dates	MW-308B	MW-312B	MW-319B	MW-409B	MW-501B	MW-601B	MW-602B
2/24/2015 - 3/20/2015	<3.340	<3.340	<3.340	<3.340	<3.340	3.76	<3.340
6/12/2015 - 6/26/2015						3.62	<3.340
8/20/2015 - 9/9/2015	<3.340	<3.340	<3.340	<3.340	<3.340	3.66	<3.340
12/11/2015 - 12/17/2015						<3.34	<3.340
3/7/2016 - 3/29/2016	1.020	<.630	.809	.641	<.630	2.92	1.680
9/12/2016 - 10/11/2016	<.630	<.630	<.630	<.630	<.630	2.76	.639
12/6/2016 - 12/15/2016							
3/17/2017 - 4/8/2017	<.928	<.928	<.928	<.928	<.928	3.58	1.140
6/13/2017 - 6/21/2017							
9/6/2017 - 9/29/2017	<.928	<.928	<.928	<.928	<.928	1.75	<.928
11/28/2017 - 11/30/2017							
3/12/2018 - 4/11/2018	<.928	<.928	<.900	<.900	<.900	2.47	<.900
7/10/2018 - 7/17/2018				<.900	<.900		
8/29/2018 - 9/27/2018	1.510	<.900	<.900	<.900		2.66	<.900
12/16/2018					<.900		
3/26/2019 - 4/25/2019	<1.000	<1.000	<1.000	<1.000	<1.000	<1.00 3.25J	<1.000
9/17/2019 - 10/11/2019	<1.000	<1.000	<1.000	<1.000	<1.000	<1.00 3.07J	<1.000
3/23/2020 - 4/22/2020			<1.000	<1.000 1.490J	<1.000	<1.00 2.23J	<1.000
8/18/2020 - 9/17/2020				<1.000			
9/17/2020 - 10/8/2020			<1.000	<1.000	<1.000	<1.00 2.52J	<1.000 2.160J
12/8/2020 - 12/10/2020							
3/11/2021 - 4/6/2021			<.960	<.960	<.960		<.960
6/17/2021 - 6/22/2021							
10/26/2021 - 11/24/2021			<.960 1.000J	<.960	<.960		<.960
4/11/2022 - 5/11/2022			<.960	<.960	<.960		<.960
10/11/2022 - 11/10/2022			<.960 .986J	<.960	<.960		<.960 1.560J
3/20/2023 - 4/19/2023			<1.400	<.960	<1.400		<1.400
8/8/2023 - 9/7/2023							
9/7/2023 - 10/5/2023			<1.400	<1.400	<1.400		<1.400 1.680J
4/23/2024 - 5/23/2024			<1.400	<1.400 1.660J	<1.400		<1.400
5/23/2024 - 5/30/2024							
9/25/2024 - 10/25/2024			<1.400 2.610J	<1.400	<1.400		<1.400
10/25/2024 - 11/1/2024				<1.400			

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Selenium (ug/L)

Dates	MW-603B	MW-604B	MW-605B	OW-105B	OW-113B	OW-114B	OW-205B	OW-209B
2/24/2015 - 3/20/2015	<3.340	<3.340	<3.34		<3.340	<3.340		<3.340
6/12/2015 - 6/26/2015	<3.340	<3.340	<3.34					
8/20/2015 - 9/9/2015	<3.340	<3.340	<3.34		<3.340	<3.340		<3.340
12/11/2015 - 12/17/2015	<3.340	<3.340	<3.34					
3/7/2016 - 3/29/2016	<.630	<.630	1.02	<.63	<.630	<.630	<.630	<.630
9/12/2016 - 10/11/2016	<.630	<.630	1.53		<.630	<.630		<.630
12/6/2016 - 12/15/2016						<.630	<.630	
3/17/2017 - 4/8/2017	<.928	<.928	1.14		<.928	<.928	<.928	<.928
6/13/2017 - 6/21/2017							<.928	
9/6/2017 - 9/29/2017	<.928	<.928	1.16		<.928	<.928	<.928	<.928
11/28/2017 - 11/30/2017							<.928	
3/12/2018 - 4/11/2018	<.900	<.900	1.05		<.900	<.928	<.928	<.900
7/10/2018 - 7/17/2018							<18.000	
8/29/2018 - 9/27/2018	<.900	<.900	1.00		<.900	.989	<.900	<.900
12/16/2018								
3/26/2019 - 4/25/2019	<1.000	<1.000	<1.00		<1.000	<1.000	<1.000	<1.000
9/17/2019 - 10/11/2019	<1.000	<1.000	<1.00 1.02J		<1.000	<1.000	<1.000	<1.000
3/23/2020 - 4/22/2020	<1.000	<1.000	<1.00	<1.00	<1.000	<1.000	<1.000	<1.000
8/18/2020 - 9/17/2020			<1.00					
9/17/2020 - 10/8/2020	<1.000	<1.000		<1.00	<1.000	<1.000	<1.000	<1.000
12/8/2020 - 12/10/2020				<1.00				
3/11/2021 - 4/6/2021	<.960	<.960	<.96 2.01J	<.96	<.960	<.960	<.960	<.960
6/17/2021 - 6/22/2021				<.96				
10/26/2021 - 11/24/2021	<.960	<.960		<.96	<.960	<.960	<.960	<.960
4/11/2022 - 5/11/2022	<.960	<.960		<.96	<.960	<.960	<.960	<.960
10/11/2022 - 11/10/2022	<.960	<.960		<.96	<.960	<.960	<.960	<.960
3/20/2023 - 4/19/2023	<1.400	<1.400		<1.40	<1.400	<1.400	<1.400	<.960
8/8/2023 - 9/7/2023							<1.400	<1.400
9/7/2023 - 10/5/2023	<1.400	<1.400		<1.40	<1.400	<1.400		
4/23/2024 - 5/23/2024	<1.400	<1.400		<1.40	<1.400	<1.400	<1.400	<1.400
5/23/2024 - 5/30/2024					<1.400			
9/25/2024 - 10/25/2024	<1.400	<1.400		<1.40	<1.400	<1.400		<1.400
10/25/2024 - 11/1/2024								

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Selenium (ug/L)

Dates	OW-216B	OW-401B	OW-402B	OW-403B	OW-405B	OW-406B	OW-410B
2/24/2015 - 3/20/2015	<3.340	<3.340	<3.340	<3.340	<3.340	<3.34	
6/12/2015 - 6/26/2015							
8/20/2015 - 9/9/2015	<3.340	<3.340	<3.340	<3.340	<3.340	3.53	
12/11/2015 - 12/17/2015							
3/7/2016 - 3/29/2016	<.630	1.020	.776	1.140	<.630	4.33	
9/12/2016 - 10/11/2016	<.630	<.630	<.630	<.630	<.630	2.39	
12/6/2016 - 12/15/2016		<.630	<.630				.970
3/17/2017 - 4/8/2017	<.928	<.928	<.928	.987	<.928	3.05	<.928
6/13/2017 - 6/21/2017							<.928
9/6/2017 - 9/29/2017	<.928	<.928	<.928	<.928	<.928	2.43	<.928
11/28/2017 - 11/30/2017							<.928
3/12/2018 - 4/11/2018	<.900	<.900	<.900	1.070	<.928	2.83	<.900
7/10/2018 - 7/17/2018							
8/29/2018 - 9/27/2018	<.900	<.900	<.900	<.900	<.900	2.72	<.900
12/16/2018							
3/26/2019 - 4/25/2019	<1.000	<1.000	<1.000	<1.000 1.520J	<1.000	<1.00 3.13J	<1.000
9/17/2019 - 10/11/2019	<1.000	<1.000	<1.000	<1.000	<1.000	<1.00 2.81J	<2.000
3/23/2020 - 4/22/2020	<1.000 1.110J	<1.000	<1.000			<1.00 3.25J	<1.000
8/18/2020 - 9/17/2020						<1.00 2.38J	
9/17/2020 - 10/8/2020	<1.000	<1.000 1.020J	<1.000				<1.000
12/8/2020 - 12/10/2020							
3/11/2021 - 4/6/2021	<.960	<.960 1.540J	<.960				<.960
6/17/2021 - 6/22/2021							
10/26/2021 - 11/24/2021	<.960	<.960	<.960				
4/11/2022 - 5/11/2022	<.960	<.960 1.200J	<.960				<.960
10/11/2022 - 11/10/2022	<.960	<.960	<.960				
3/20/2023 - 4/19/2023	<1.400 2.010J	<3.840	<.960				<.960
8/8/2023 - 9/7/2023							
9/7/2023 - 10/5/2023	<1.400	<1.400	<1.400				
4/23/2024 - 5/23/2024	<1.400	<1.400	<1.400				<1.400
5/23/2024 - 5/30/2024							
9/25/2024 - 10/25/2024	<1.400	<1.400	<1.400				
10/25/2024 - 11/1/2024							

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Selenium (ug/L)

Dates	OW-411B	OW-412B	OW-413B	OW-414B
2/24/2015 - 3/20/2015				
6/12/2015 - 6/26/2015				
8/20/2015 - 9/9/2015				
12/11/2015 - 12/17/2015				
3/7/2016 - 3/29/2016				
9/12/2016 - 10/11/2016				
12/6/2016 - 12/15/2016	<.630	1.020	<.630	.742
3/17/2017 - 4/8/2017	<.928	<.928	<.928	<.928
6/13/2017 - 6/21/2017	<.928	<.928	<.928	<.928
9/6/2017 - 9/29/2017	<.928	<.928	<.928	<.928
11/28/2017 - 11/30/2017	<.928	<.928	<.928	<.928
3/12/2018 - 4/11/2018	<.900	<.900	<.900	<.900
7/10/2018 - 7/17/2018				
8/29/2018 - 9/27/2018	<.900	12.300	<.900 *	<.900 *
12/16/2018				
3/26/2019 - 4/25/2019	<1.000	<1.000	<1.000	<1.000
9/17/2019 - 10/11/2019	<1.000	<1.000	<1.000	<1.000
3/23/2020 - 4/22/2020	<1.000	<1.000	<1.000	<1.000
8/18/2020 - 9/17/2020				
9/17/2020 - 10/8/2020	<1.000	<1.000	<1.000	<1.000
12/8/2020 - 12/10/2020				
3/11/2021 - 4/6/2021	<.960	<.960	<.960	<.960
6/17/2021 - 6/22/2021				
10/26/2021 - 11/24/2021			<.960	
4/11/2022 - 5/11/2022	<.960	<.960	<.960	<.960
10/11/2022 - 11/10/2022			<.960	
3/20/2023 - 4/19/2023	<1.400	<1.400	<1.400	<1.400
8/8/2023 - 9/7/2023				
9/7/2023 - 10/5/2023			<1.400	
4/23/2024 - 5/23/2024	<1.400	<1.400	<1.400	<1.400
5/23/2024 - 5/30/2024				
9/25/2024 - 10/25/2024			<1.400	
10/25/2024 - 11/1/2024				

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Silver (ug/L)

Dates	MW-308B	MW-312B	MW-319B	MW-409B	MW-501B	MW-601B	MW-602B	MW-603B
2/24/2015 - 3/20/2015	<.042	<.042	<.042	<.042	<.042	<.042	<.042	<.042
6/12/2015 - 6/26/2015						<.042	<.042	<.042
8/20/2015 - 9/9/2015	.134	<.042	.108	<.042	.111	<.042	<.042	<.042
12/11/2015 - 12/17/2015						<.042	<.042	<.042
3/7/2016 - 3/29/2016	<.153	<.153	<.153	<.153	<.153	<.153	<.153	<.153
9/12/2016 - 10/11/2016	<.153	<.153	<.153	<.153	<.153	<.153	<.153	<.153
12/6/2016 - 12/15/2016								
3/17/2017 - 4/8/2017	<.140	<.140	<.140	<.140	<.140	<.140	<.140	<.140
6/13/2017 - 6/21/2017								
9/6/2017 - 9/29/2017	<.140	<.140	<.140	<.140	<.140	<.140	.141	.152
11/28/2017 - 11/30/2017								
3/12/2018 - 4/11/2018	<.140	<.140	<.300	<.300	<.300	<.300	<.300	<.300
7/10/2018 - 7/17/2018				<.300	<.300			
8/29/2018 - 9/27/2018	<.300	<.300	<.300	<.300		<.300	<.300	<.300
12/16/2018					<.300			
3/26/2019 - 4/25/2019	<.370	<.370	<.370	<.370	<.370	<.370	<.370	<.370
9/17/2019 - 10/11/2019	<.370	<.370	<.370	<.370	<.370	<.370	<.370	<.370
3/23/2020 - 4/22/2020			<.370	<.370	<.370	<.370	<.370	<.370
8/18/2020 - 9/17/2020				<.370				
9/17/2020 - 10/8/2020			<.370	<.370	<.370	<.370	<.370	<.370
12/8/2020 - 12/10/2020								
3/11/2021 - 4/6/2021			<.420	<.420	<.420		<.420	<.420
6/17/2021 - 6/22/2021								
10/26/2021 - 11/24/2021			<.420	<.420	<.420		<.420	<.420
4/11/2022 - 5/11/2022			<.490	<.490	<.490		<.490	<.490
10/11/2022 - 11/10/2022			<.490	<.490	<.490		<.490	<.490
3/20/2023 - 4/19/2023			<.500	<.490	<.500		<.500	<.500
8/8/2023 - 9/7/2023								
9/7/2023 - 10/5/2023			<.500	<.500	<.500		<.500	<.500
4/23/2024 - 5/23/2024			<.500	<.500 .863J	<.500		<.500	<.500
5/23/2024 - 5/30/2024								
9/25/2024 - 10/25/2024			<.500	<.500	<.500		<.500	<.500
10/25/2024 - 11/1/2024				<.500				

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Silver (ug/L)

Dates	MW-604B	MW-605B	OW-105B	OW-113B	OW-114B	OW-205B	OW-209B	OW-216B
2/24/2015 - 3/20/2015	<.042	<.042		<.042	<.042		<.042	<.042
6/12/2015 - 6/26/2015	<.042	<.042						
8/20/2015 - 9/9/2015	.107	.128		<.042	<.042		<.042	.079
12/11/2015 - 12/17/2015	<.042	<.042						
3/7/2016 - 3/29/2016	.188	<.153	<.153	<.153	.190	<.153	<.153	<.153
9/12/2016 - 10/11/2016	<.153	<.153		<.153	<.153		<.153	<.153
12/6/2016 - 12/15/2016					<.153	<.153		
3/17/2017 - 4/8/2017	<.140	<.140		<.140	<.140	<.140	<.140	<.140
6/13/2017 - 6/21/2017						<.140		
9/6/2017 - 9/29/2017	<.140	<.140		<.140	<.140	<.140	.193	<.140
11/28/2017 - 11/30/2017						.171		
3/12/2018 - 4/11/2018	<.300	<.140		<.300	<.140	.167	<.300	<.300
7/10/2018 - 7/17/2018						<6.000		
8/29/2018 - 9/27/2018	<.300	<.300		<.300	<.300	<.300	<.300	<.300
12/16/2018								
3/26/2019 - 4/25/2019	<.370	<.370		<.370	<.370	<.370	<.370	<.370
9/17/2019 - 10/11/2019	<.370	<.370		<.370	<.370	<.370	<.370	<.370
3/23/2020 - 4/22/2020	<.370	<.370	<.370	<.370	<.370	<.370	<.370	<.370
8/18/2020 - 9/17/2020		<.370						
9/17/2020 - 10/8/2020	<.370		<.370	<.370	<.370	<.370	<.370	<.370
12/8/2020 - 12/10/2020			<.370					
3/11/2021 - 4/6/2021	<.420	<.420	<.420	<.420	<.420	<.420	<.420	<.420
6/17/2021 - 6/22/2021			<.420					
10/26/2021 - 11/24/2021	<.420		<.420	<.420	<.420	<.420	<.420	<.420
4/11/2022 - 5/11/2022	<.490		<.490	<.490	<.490	<.490	<.490	<.490
10/11/2022 - 11/10/2022	<.490		<.490	<.490	<.490	<.490	<.490	<.490
3/20/2023 - 4/19/2023	<.500		<.500	<.500	<.500	<.500	<.490	<.500
8/8/2023 - 9/7/2023						<.500	<.500	
9/7/2023 - 10/5/2023	<.500		<.500	<.500	<.500			<.500
4/23/2024 - 5/23/2024	<.500		<.500	<.500	<.500	<.500	<.500	<.500
5/23/2024 - 5/30/2024				<.500				
9/25/2024 - 10/25/2024	<.500		<.500	<.500	<.500		<.500	<.500
10/25/2024 - 11/1/2024								

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Silver (ug/L)

Dates	OW-401B	OW-402B	OW-403B	OW-405B	OW-406B	OW-410B	OW-411B	OW-412B
2/24/2015 - 3/20/2015	<.042	.055	<.042	<.042	<.042			
6/12/2015 - 6/26/2015								
8/20/2015 - 9/9/2015	.053	<.042	<.042	<.042	.101			
12/11/2015 - 12/17/2015								
3/7/2016 - 3/29/2016	<.153	<.153	<.153	<.153	.318			
9/12/2016 - 10/11/2016	<.153	<.153	<.153	<.153	<.153			
12/6/2016 - 12/15/2016	<.153	<.153				<.153	<.153	<.153
3/17/2017 - 4/8/2017	<.140	<.140	<.140	<.140	<.140	<.140	<.140	<.140
6/13/2017 - 6/21/2017						<.140	<.140	<.140
9/6/2017 - 9/29/2017	.161	<.140	<.140	<.140	<.140	<.140	<.140	<.140
11/28/2017 - 11/30/2017						.170	<.140	<.140
3/12/2018 - 4/11/2018	<.300	<.300	<.140	<.140	<.140	<.300	<.300	<.300
7/10/2018 - 7/17/2018								
8/29/2018 - 9/27/2018	<.300	<.300	<.300	.312	<.300	<.300	<.300	.332
12/16/2018								
3/26/2019 - 4/25/2019	<.370	<.370	<.370	<.370	<.370	<.370	<.370	<.370
9/17/2019 - 10/11/2019	<.370	<.370	<.370	<.370	<.370	<.740	<.370	<.370
3/23/2020 - 4/22/2020	<.370	<.370			<.370	<.370	<.370	<.370
8/18/2020 - 9/17/2020					<.370			
9/17/2020 - 10/8/2020	<.370	<.370				<.370	<.370	<.370
12/8/2020 - 12/10/2020								
3/11/2021 - 4/6/2021	<.420	<.420				<.420	<.420	<.420
6/17/2021 - 6/22/2021								
10/26/2021 - 11/24/2021	<.420	<.420						
4/11/2022 - 5/11/2022	<.490 .516J	<.490				<.490	<.490	<.490
10/11/2022 - 11/10/2022	<.490	<.490						
3/20/2023 - 4/19/2023	<1.960	<.490				<.490	<.500	<.500
8/8/2023 - 9/7/2023								
9/7/2023 - 10/5/2023	<.500	<.500						
4/23/2024 - 5/23/2024	<.500	<.500				<.500	<.500	<.500
5/23/2024 - 5/30/2024								
9/25/2024 - 10/25/2024	<.500	<.500 .645J						
10/25/2024 - 11/1/2024								

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Silver (ug/L)

Dates	OW-413B	OW-414B
2/24/2015 - 3/20/2015		
6/12/2015 - 6/26/2015		
8/20/2015 - 9/9/2015		
12/11/2015 - 12/17/2015		
3/7/2016 - 3/29/2016		
9/12/2016 - 10/11/2016		
12/6/2016 - 12/15/2016	<.153	<.153
3/17/2017 - 4/8/2017	.164	<.140
6/13/2017 - 6/21/2017	<.140	<.140
9/6/2017 - 9/29/2017	.184	<.140
11/28/2017 - 11/30/2017	<.140	<.140
3/12/2018 - 4/11/2018	<.300	<.300
7/10/2018 - 7/17/2018		
8/29/2018 - 9/27/2018	<.300 *	<.300 *
12/16/2018		
3/26/2019 - 4/25/2019	<.370	<.370
9/17/2019 - 10/11/2019	<.370	<.370
3/23/2020 - 4/22/2020	<.370	<.370
8/18/2020 - 9/17/2020		
9/17/2020 - 10/8/2020	<.370	<.370
12/8/2020 - 12/10/2020		
3/11/2021 - 4/6/2021	<.420	<.420
6/17/2021 - 6/22/2021		
10/26/2021 - 11/24/2021	<.420	
4/11/2022 - 5/11/2022	<.490	<.490
10/11/2022 - 11/10/2022	<.490	
3/20/2023 - 4/19/2023	<.500	<.500
8/8/2023 - 9/7/2023		
9/7/2023 - 10/5/2023	<.500	
4/23/2024 - 5/23/2024	<.500	<.500
5/23/2024 - 5/30/2024		
9/25/2024 - 10/25/2024	<.500	
10/25/2024 - 11/1/2024		

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Thallium (ug/L)

Dates	MW-308B	MW-312B	MW-319B	MW-409B	MW-501B	MW-601B	MW-602B	MW-603B
2/24/2015 - 3/20/2015	<.0325	<.0325	<.0325	<.0325	<.0325	<.0325	<.0325	<.0325
6/12/2015 - 6/26/2015						<.0325	<.0325	<.0325
8/20/2015 - 9/9/2015	<.0325	<.0325	<.0325	.0440	<.0325	<.0325	<.0325	<.0325
12/11/2015 - 12/17/2015						<.0325	<.0325	<.0325
3/7/2016 - 3/29/2016	<.0255	<.0255	<.0255	.0260	<.0255	<.0255	<.0255	<.0255
9/12/2016 - 10/11/2016	<.0255	.0340	<.0255	<.0255	<.0255	<.0255	<.0255	<.0255
12/6/2016 - 12/15/2016								
3/17/2017 - 4/8/2017	<.0644	<.0644	<.0644	<.0644	<.0644	<.0644	<.0644	<.0644
6/13/2017 - 6/21/2017								
9/6/2017 - 9/29/2017	<.0644	<.0644	<.0644	<.0644	<.0644	<.0644	<.0644	<.0644
11/28/2017 - 11/30/2017								
3/12/2018 - 4/11/2018	<.0644	<.0644	<.1700	<.1700	<.1700	<.1700	<.1700	<.1700
7/10/2018 - 7/17/2018				<.1700	<.1700			
8/29/2018 - 9/27/2018	<.1700	<.1700	<.1700	<.1700		<.1700	<.1700	<.1700
12/16/2018					<.1700			
3/26/2019 - 4/25/2019	<.2700	<.2700	<.2700	<.2700	<.2700	<.2700	<.2700	<.2700
9/17/2019 - 10/11/2019	<.2700	<.2700	<.2700	<.2700	<.2700	<.2700	<.2700	<.2700
3/23/2020 - 4/22/2020			<.2600	<.2600	<.2600	<.2600	<.2600	<.2600
8/18/2020 - 9/17/2020				<.2600				
9/17/2020 - 10/8/2020			<.2600	<.2600	<.2600	<.2600	<.2600 .3810J	<.2600
12/8/2020 - 12/10/2020								
3/11/2021 - 4/6/2021			<.2600	<.2600	<.2600		<.2600 .8230J	<.2600
6/17/2021 - 6/22/2021								
10/26/2021 - 11/24/2021			<.2600	<.2600	<.2600		<.2600	<.2600 .4420J
4/11/2022 - 5/11/2022			<.2600	<.2600	<.2600		<.2600	<.2600
10/11/2022 - 11/10/2022			<.2600	<.2600	<.2600		<.2600	<.2600
3/20/2023 - 4/19/2023			<.2600	<.2600	<.2600		<.2600	<.2600
8/8/2023 - 9/7/2023								
9/7/2023 - 10/5/2023			<.2600	<.2600	<.2600		<.2600	<.2600
4/23/2024 - 5/23/2024			<.5700	<.5700	<.5700		<.5700	<.5700
5/23/2024 - 5/30/2024								
9/25/2024 - 10/25/2024			<.5700	<.5700	<.5700		<.5700	<.5700
10/25/2024 - 11/1/2024				<.5700				

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Thallium (ug/L)

Dates	MW-604B	MW-605B	OW-105B	OW-113B	OW-114B	OW-205B	OW-209B	OW-216B
2/24/2015 - 3/20/2015	<.0325	<.0325		<.0325	<.0325		<.0325	<.0325
6/12/2015 - 6/26/2015	<.0325	<.0325						
8/20/2015 - 9/9/2015	<.0325	<.0325		.0440	<.0325		.0340	<.0325
12/11/2015 - 12/17/2015	<.0325	<.0325						
3/7/2016 - 3/29/2016	<.0255	<.0255	.042	<.0255	.0360	<.0255	.0260	<.0255
9/12/2016 - 10/11/2016	<.0255	.0440		<.0255	.1510		.0390	<.0255
12/6/2016 - 12/15/2016					<.0255	<.0255		
3/17/2017 - 4/8/2017	<.0644	<.0644		<.0644	<.0644	<.0644	<.0644	<.0644
6/13/2017 - 6/21/2017						<.0644		
9/6/2017 - 9/29/2017	<.0644	<.0644		<.0644	<.0644	<.0644	<.0644	<.0644
11/28/2017 - 11/30/2017						<.0644		
3/12/2018 - 4/11/2018	<.1700	<.0644		<.1700	.1290	<.0644	<.1700	<.1700
7/10/2018 - 7/17/2018						<3.4000		
8/29/2018 - 9/27/2018	<.1700	<.1700		<.1700	<.1700	<.1700	<.1700	<.1700
12/16/2018								
3/26/2019 - 4/25/2019	<.2700	<.2700		<.2700	<.2700	<.2700	<.2700	<.2700
9/17/2019 - 10/11/2019	<.2700	<.2700		<.2700	<.2700	<.2700	<.2700	<.2700
3/23/2020 - 4/22/2020	<.2600	<.2600	<.260	<.2600	<.2600	<.2600	<.2600	<.2600
8/18/2020 - 9/17/2020		<.2600						
9/17/2020 - 10/8/2020	<.2600		<.260	<.2600	<.2600	<.2600	<.2600	<.2600
12/8/2020 - 12/10/2020			<.260					
3/11/2021 - 4/6/2021	<.2600	<.2600	<.260	<.2600	<.2600	<.2600	<.2600	<.2600
6/17/2021 - 6/22/2021			<.260					
10/26/2021 - 11/24/2021	<.2600		<.260	<.2600	<.2600	<.2600	<.2600	<.2600
4/11/2022 - 5/11/2022	<.2600		<.260	<.2600	<.2600	<.2600	<.2600	<.2600
10/11/2022 - 11/10/2022	<.2600		<.260	<.2600	<.2600	<.2600	<.2600	<.2600
3/20/2023 - 4/19/2023	<.2600		<.260	<.2600	<.2600	<.2600	<.2600	<.2600 .3810J
8/8/2023 - 9/7/2023						<.2600 .4150J	<.2600	
9/7/2023 - 10/5/2023	<.2600		<.260	<.2600	<.2600			<.2600 .6760J
4/23/2024 - 5/23/2024	<.5700		<.570	<.5700	<.5700	<.5700	<.5700	<.5700
5/23/2024 - 5/30/2024				<.5700				
9/25/2024 - 10/25/2024	<.5700		<.570	<.5700	1.5000		<.5700	<.5700
10/25/2024 - 11/1/2024								

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Thallium (ug/L)

Dates	OW-401B	OW-402B	OW-403B	OW-405B	OW-406B	OW-410B	OW-411B	OW-412B
2/24/2015 - 3/20/2015	<.0325	.0380	<.0325	<.0325	<.0325			
6/12/2015 - 6/26/2015								
8/20/2015 - 9/9/2015	<.0325	.0350	<.0325	.0380	<.0325			
12/11/2015 - 12/17/2015								
3/7/2016 - 3/29/2016	<.0255	<.0255	<.0255	<.0255	.2740			
9/12/2016 - 10/11/2016	<.0255	.0380	<.0255	<.0255	<.0255			
12/6/2016 - 12/15/2016	<.0255	.0280				<.0255	<.0255	<.0255
3/17/2017 - 4/8/2017	<.0644	<.0644	<.0644	<.0644	<.0644	<.0644	<.0644	<.0644
6/13/2017 - 6/21/2017						.0940	<.0644	<.0644
9/6/2017 - 9/29/2017	<.0644	<.0644	<.0644	<.0644	<.0644	<.0644	<.0644	<.0644
11/28/2017 - 11/30/2017						<.0644	<.0644	<.0644
3/12/2018 - 4/11/2018	<.1700	<.1700	<.0644	<.0644	<.0644	<.1700	<.1700	<.1700
7/10/2018 - 7/17/2018								
8/29/2018 - 9/27/2018	<.1700	<.1700	<.1700	<.1700	<.1700	<.1700	<.1700	<.1700
12/16/2018								
3/26/2019 - 4/25/2019	<.2700	<.2700	<.2700	<.2700	<.2700	<.2700	<.2700	<.2700
9/17/2019 - 10/11/2019	<.2700	<.2700	<.2700	<.2700	<.2700	<.5400	<.2700	<.2700
3/23/2020 - 4/22/2020	<.2600	<.2600			<.2600	<.2600	<.2600	<.2600
8/18/2020 - 9/17/2020					<.2600			
9/17/2020 - 10/8/2020	<.2600	<.2600				<.2600	<.2600	<.2600
12/8/2020 - 12/10/2020								
3/11/2021 - 4/6/2021	<.2600 .9620J	<.2600				<.2600	<.2600	<.2600
6/17/2021 - 6/22/2021								
10/26/2021 - 11/24/2021	<.2600	<.2600						
4/11/2022 - 5/11/2022	<.2600	<.2600				<.2600	<.2600	<.2600
10/11/2022 - 11/10/2022	<.2600	<.2600						
3/20/2023 - 4/19/2023	<1.0400	<.2600				<.2600	<.2600	2.4200
8/8/2023 - 9/7/2023								
9/7/2023 - 10/5/2023	<.2600	<.2600						
4/23/2024 - 5/23/2024	<.5700	<.5700				<.5700	<.5700	<.5700
5/23/2024 - 5/30/2024								
9/25/2024 - 10/25/2024	<.5700	<.5700						
10/25/2024 - 11/1/2024								

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Thallium (ug/L)

Dates	OW-413B	OW-414B
2/24/2015 - 3/20/2015		
6/12/2015 - 6/26/2015		
8/20/2015 - 9/9/2015		
12/11/2015 - 12/17/2015		
3/7/2016 - 3/29/2016		
9/12/2016 - 10/11/2016		
12/6/2016 - 12/15/2016	<.0255	<.0255
3/17/2017 - 4/8/2017	<.0644	<.0644
6/13/2017 - 6/21/2017	<.0644	<.0644
9/6/2017 - 9/29/2017	<.0644	<.0644
11/28/2017 - 11/30/2017	<.0644	<.0644
3/12/2018 - 4/11/2018	<.1700	<.1700
7/10/2018 - 7/17/2018		
8/29/2018 - 9/27/2018	<.1700 *	<.1700 *
12/16/2018		
3/26/2019 - 4/25/2019	<.2700	<.2700
9/17/2019 - 10/11/2019	<.2700	<.2700
3/23/2020 - 4/22/2020	<.2600	<.2600
8/18/2020 - 9/17/2020		
9/17/2020 - 10/8/2020	<.2600	<.2600
12/8/2020 - 12/10/2020		
3/11/2021 - 4/6/2021	<.2600	<.2600
6/17/2021 - 6/22/2021		
10/26/2021 - 11/24/2021	<.2600	
4/11/2022 - 5/11/2022	<.2600	<.2600
10/11/2022 - 11/10/2022	<.2600	
3/20/2023 - 4/19/2023	<.2600	<.2600
8/8/2023 - 9/7/2023		
9/7/2023 - 10/5/2023	<.2600	
4/23/2024 - 5/23/2024	<.5700	<.5700
5/23/2024 - 5/30/2024		
9/25/2024 - 10/25/2024	<.5700	
10/25/2024 - 11/1/2024		

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Total suspended solids (mg/L)

Dates	MW-308B	MW-312B	MW-319B	MW-409B	MW-501B	MW-601B	MW-602B
2/24/2015 - 3/20/2015	<1.200	1.650	<1.600	8.33	1.830	4.500	7.800
6/12/2015 - 6/26/2015						2.630	1.130
8/20/2015 - 9/9/2015	<1.200	1.250	<1.200	13.90	<1.200	1.750	3.380
12/11/2015 - 12/17/2015						4.380	15.600
3/7/2016 - 3/29/2016	1.250	2.130	<.581	7.33	1.630	8.470	9.290
9/12/2016 - 10/11/2016	2.630	1.250	.750	23.30	3.000	6.630	13.500
12/6/2016 - 12/15/2016							
3/17/2017 - 4/8/2017	1.630	1.630	1.000	15.80	4.250	5.130	3.750
6/13/2017 - 6/21/2017							
9/6/2017 - 9/29/2017	3.870	.750	3.130	8.00	3.380	4.000	3.250
11/28/2017 - 11/30/2017							
3/12/2018 - 4/11/2018	2.880	1.250	1.000	9.00	10.600	4.000	2.130
7/10/2018 - 7/17/2018				17.00	2.130		
8/29/2018 - 9/27/2018	2.500	1.130	2.500	38.70		7.000	6.330
12/16/2018			1.000		1.880		
3/26/2019 - 4/25/2019	<.638 1.750J	2.380	<.638	13.50	<.638 1.380J	9.500	5.130
9/17/2019 - 10/11/2019	8.500	<.638 1.380J	1.880	22.40	2.750	<.638 1.630J	2.130
11/25/2019							
3/23/2020 - 4/22/2020			<.638 1.000J	17.40	<.638	3.130	<.638 .875J
8/5/2020 - 8/18/2020					<.638		
8/18/2020 - 9/17/2020				38.00			
9/17/2020 - 10/8/2020			<.638 1.500J	38.00	<.638 .875J	4.130	<.638 1.630J
12/8/2020 - 12/10/2020							
3/11/2021 - 4/6/2021			<.638 1.250J	19.00	<.638 1.250J		<.638 1.630J
6/17/2021 - 6/22/2021							
10/26/2021 - 11/24/2021			2.380	21.00	<.638 1.000J		2.130
2/8/2022 - 2/9/2022							
4/11/2022 - 5/11/2022			<.638 1.750J	16.00	<.638 1.630J		<.638 1.000J
7/14/2022 - 7/27/2022							
10/11/2022 - 11/10/2022			<.638 .750J	43.00	<.638 1.250J		<.638
3/20/2023 - 4/19/2023			<1.700	14.80	2.630		2.500
8/8/2023 - 9/7/2023							
9/7/2023 - 10/5/2023			<.638 1.630J	12.50	<.638 1.500J		<.638 1.380J
4/23/2024 - 5/23/2024			4.750	38.00	2.000		<1.390 1.750J
5/23/2024 - 5/30/2024							
7/26/2024 - 8/9/2024							
9/25/2024 - 10/25/2024			<1.390 1.500J	29.50	<1.390 1.630J		<1.390 1.500J
10/25/2024 - 11/1/2024				29.50			

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Total suspended solids (mg/L)

Dates	MW-603B	MW-604B	MW-605B	OW-105B	OW-113B	OW-114B
2/24/2015 - 3/20/2015	3.670	<1.600	3.830		<1.130	2.500
6/12/2015 - 6/26/2015	4.250	2.750	2.130			
8/20/2015 - 9/9/2015	2.880	1.750	<1.200		1.380	<1.200
12/11/2015 - 12/17/2015	3.380	5.500	2.380			
3/7/2016 - 3/29/2016	3.760	4.940	4.120	.625	1.630	4.600
9/12/2016 - 10/11/2016	4.250	2.500	1.130		3.870	<.581
12/6/2016 - 12/15/2016						1.000
3/17/2017 - 4/8/2017	1.880	2.130	1.000		2.880	5.370
6/13/2017 - 6/21/2017						
9/6/2017 - 9/29/2017	1.250	2.880	72.900		4.880	2.250
11/28/2017 - 11/30/2017						
3/12/2018 - 4/11/2018	3.870	2.000	2.500		2.250	2.500
7/10/2018 - 7/17/2018						
8/29/2018 - 9/27/2018	1.880	2.750	1.630		7.500	1.000
12/16/2018					3.130	
3/26/2019 - 4/25/2019	3.750	<.638 1.500J	2.500		4.500	<.638 .875J
9/17/2019 - 10/11/2019	<.638 1.630J	<.638 1.380J	<.638 1.000J		2.630	<.638 1.250J
11/25/2019						
3/23/2020 - 4/22/2020	<.638 .875J	<.638 1.250J	<.638 .875J	<.638	8.330	<1.280 1.750J
8/5/2020 - 8/18/2020					9.000	
8/18/2020 - 9/17/2020			<.638 1.750J			
9/17/2020 - 10/8/2020	<.638 1.000J	<.638 1.130J		<.638 1.130J	3.630	<.638
12/8/2020 - 12/10/2020	<.638	<.638		<.638		
3/11/2021 - 4/6/2021	<.638 1.500J	<1.020 2.600J	<.638 1.130J	<.638	<.638 1.380J	<.638
6/17/2021 - 6/22/2021				<.638 1.500J		
10/26/2021 - 11/24/2021	.625	<.638 1.750J		<.638 1.000J	<1.700 2.330J	<.638 1.000J
2/8/2022 - 2/9/2022				<1.700		
4/11/2022 - 5/11/2022	<.638 1.380J	<.638 1.130J		<.638 1.250J	<1.700 2.670J	<.638 .875J
7/14/2022 - 7/27/2022						
10/11/2022 - 11/10/2022	<.638 1.000J	2.750		<.638 1.130J	6.500	<.638 .750J
3/20/2023 - 4/19/2023	<.638 1.250J	<.638 1.630J		<1.700	3.630	<1.700
8/8/2023 - 9/7/2023						
9/7/2023 - 10/5/2023	<.638	<.638 1.750J		<1.700	5.670	<1.700
4/23/2024 - 5/23/2024	<1.390	2.630		<1.390	33.000	1.880
5/23/2024 - 5/30/2024					33.000	
7/26/2024 - 8/9/2024						
9/25/2024 - 10/25/2024	<1.390	2.380		<1.390	11.300	<1.390
10/25/2024 - 11/1/2024						

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Total suspended solids (mg/L)

Dates	OW-205B	OW-209B	OW-216B	OW-401B	OW-402B	OW-403B	OW-405B
2/24/2015 - 3/20/2015		<1.200	7.830	68.7	<3.200	<1.600	<1.60
6/12/2015 - 6/26/2015							
8/20/2015 - 9/9/2015		<1.200	7.620	56.9	<1.200	<1.200	2.00
12/11/2015 - 12/17/2015							
3/7/2016 - 3/29/2016	20.80	.625	6.250	89.8	2.130	.750	3.50
9/12/2016 - 10/11/2016		.625	7.750	74.0	1.750	.625	1.50
12/6/2016 - 12/15/2016	7.00			77.9	3.870		
3/17/2017 - 4/8/2017	26.60	1.250	22.600	83.1	8.250	1.000	2.00
6/13/2017 - 6/21/2017	14.00						
9/6/2017 - 9/29/2017	9.00	.750	21.800	58.5	3.870	3.130	3.13
11/28/2017 - 11/30/2017	9.12						
3/12/2018 - 4/11/2018	22.90	1.380	2.500	56.1	6.120	1.880	5.25
7/10/2018 - 7/17/2018	13.30						1.75
8/29/2018 - 9/27/2018	7.25	1.250	3.130	86.0	1.000	1.750	1.88
12/16/2018							
3/26/2019 - 4/25/2019	21.90	<.638 1.250J	4.500	92.0	8.500	2.250	2.00
9/17/2019 - 10/11/2019	5.25	<.638 .875J	3.750	64.7	<.638 1.630J	<.638 1.630J	6.25
11/25/2019							
3/23/2020 - 4/22/2020	48.00	<.638 .750J	4.620	68.0	<.638 1.630J		
8/5/2020 - 8/18/2020		<.638 .875J					
8/18/2020 - 9/17/2020							
9/17/2020 - 10/8/2020	6.00	<.638	9.870	72.0	3.870		
12/8/2020 - 12/10/2020							
3/11/2021 - 4/6/2021	20.30	<.638 .875J	4.250	26.0	<1.700 2.670J		
6/17/2021 - 6/22/2021							
10/26/2021 - 11/24/2021	<2.55 7.00J	<.638 1.000J	3.000	90.0	2.500		
2/8/2022 - 2/9/2022		<1.700 3.670J					
4/11/2022 - 5/11/2022	34.00	<1.700	<.638 1.750J	102.0	3.250		
7/14/2022 - 7/27/2022		<.638 1.130J					
10/11/2022 - 11/10/2022	14.00	<.638 .750J	8.870	85.0	5.000		
3/20/2023 - 4/19/2023	18.80	<.638 1.000J	<1.700	48.0	8.330		
8/8/2023 - 9/7/2023	16.50	<.638 1.130J					
9/7/2023 - 10/5/2023			<1.700	76.0	5.750		
4/23/2024 - 5/23/2024	10.00	2.500	2.880	76.0	<1.390		
5/23/2024 - 5/30/2024							
7/26/2024 - 8/9/2024				73.0			
9/25/2024 - 10/25/2024		1.880	5.250	77.0	7.130		
10/25/2024 - 11/1/2024							

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Total suspended solids (mg/L)

Dates	OW-406B	OW-410B	OW-411B	OW-412B	OW-413B	OW-414B
2/24/2015 - 3/20/2015	<1.600					
6/12/2015 - 6/26/2015						
8/20/2015 - 9/9/2015	<1.200					
12/11/2015 - 12/17/2015						
3/7/2016 - 3/29/2016	1.250					
9/12/2016 - 10/11/2016	3.870					
12/6/2016 - 12/15/2016		6.38	4.25	6.67	36.5	13.4
3/17/2017 - 4/8/2017	3.000	2.88	4.75	3.50	48.0	53.9
6/13/2017 - 6/21/2017		3.33	6.00	4.00	62.0	38.0
9/6/2017 - 9/29/2017	1.250	6.38	6.00	3.38	46.0	38.9
11/28/2017 - 11/30/2017		4.50	10.60	3.67	78.1	34.8
3/12/2018 - 4/11/2018	3.500	6.50	5.75	3.00	56.6	22.6
7/10/2018 - 7/17/2018						
8/29/2018 - 9/27/2018	4.380	10.00	14.00	6.38	62.5 *	42.8 *
12/16/2018						
3/26/2019 - 4/25/2019	<.638 1.380J	26.90	23.50	5.63	78.0	25.7
9/17/2019 - 10/11/2019	<.638 1.500J	19.00	29.00	14.40	37.4	15.4
11/25/2019	<.638					
3/23/2020 - 4/22/2020	2.000	40.00	29.50	4.88	51.0	15.5
8/5/2020 - 8/18/2020						
8/18/2020 - 9/17/2020	2.250					
9/17/2020 - 10/8/2020		24.30	15.50	6.25	36.5	13.3
12/8/2020 - 12/10/2020						
3/11/2021 - 4/6/2021		62.00	27.00	6.00	66.3	36.8
6/17/2021 - 6/22/2021						
10/26/2021 - 11/24/2021					40.0	
2/8/2022 - 2/9/2022						
4/11/2022 - 5/11/2022		62.00	46.00	10.30	52.0	29.0
7/14/2022 - 7/27/2022						
10/11/2022 - 11/10/2022					83.0	
3/20/2023 - 4/19/2023		62.00	38.50	10.00	74.0	25.7
8/8/2023 - 9/7/2023						
9/7/2023 - 10/5/2023					80.0	
4/23/2024 - 5/23/2024		80.00	40.00	9.00	128.0	34.7
5/23/2024 - 5/30/2024						
7/26/2024 - 8/9/2024						
9/25/2024 - 10/25/2024					75.0	
10/25/2024 - 11/1/2024						

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Turbidity, field (NTU)

Dates	MW-308B	MW-312B	MW-319B	MW-409B	MW-501B	MW-601B	MW-602B	MW-603B
2/24/2015 - 3/20/2015	2.564	.6625	1.9700 *	5.2340 *	2.6960 *	4.9300 *	56.440 *	24.0300 *
6/12/2015 - 6/26/2015						2.7730	8.782	.9514
8/20/2015 - 9/9/2015	4.312	.0004	3.1490 *	.3369 *	3.2250 *	.7933 *	32.470 *	.7255 *
3/7/2016 - 3/29/2016	2.545	6.8010	5.9450 *	2.6640 *	1.4150 *			
9/12/2016 - 10/11/2016	4.628	9.7190	6.1040 *	1.9870 *	3.6000 *	3.5110 *	11.780 *	.4871 *
12/6/2016 - 12/15/2016								
3/17/2017 - 4/8/2017	3.981	3.1060	.4582	7.4440	15.1500	54.2000	9.519	2.8640
6/13/2017 - 6/21/2017								
9/6/2017 - 9/29/2017	1.521	.5793	1.9520	.4152	.8201	.6475	4.116	4.5220
11/28/2017 - 11/30/2017								
1/10/2018								
3/12/2018 - 4/11/2018	7.084 *	.2593 *	3.4450 *	18.3100 *	10.0100 *	.9743 *	3.675 *	3.5960 *
7/10/2018 - 7/17/2018				39.4600 *	3.6910 *			
8/29/2018 - 9/27/2018	1.811 *	3.2390 *	4.8790 *	4.6360 *		2.6710 *	3.014 *	5.5420 *
12/16/2018			3.1650 *		62.9500 *			
3/26/2019 - 4/25/2019	7.170 *	4.6000 *	3.5400 *	2.3700 *	55.2800 *	11.6600 *	15.060 *	3.1400 *
6/19/2019 - 6/25/2019		29.2500						
9/17/2019 - 10/11/2019	17.550 *	4.7400 *	7.6900 *	3.7300 *	3.0300 *	3.0500 *	1.520 *	7.5000 *
11/25/2019								
3/23/2020 - 4/22/2020			.6900 *	34.1500 *	1.2500 *	1.4200 *	1.080 *	15.8100 *
8/5/2020 - 8/18/2020					1.4000			
8/18/2020 - 9/17/2020				7.8600				
9/17/2020 - 10/8/2020			1.8100	7.8600	1.1700	5.3100	2.520	1.0900
12/8/2020 - 12/10/2020								5.4700
3/11/2021 - 4/6/2021			.0000	6.1800	.0000		.250	1.7600
6/17/2021 - 6/22/2021								
10/26/2021 - 11/24/2021			1.8900	14.1000	.0000			
4/11/2022 - 5/11/2022			3.5800	6.4200	.0000		.000	3.5300
10/11/2022 - 11/10/2022			.1600	.1900	.0000		.000	.0000
3/20/2023 - 4/19/2023			1.0300	10.9700	.5100		.940	3.9900
8/8/2023 - 9/7/2023								
9/7/2023 - 10/5/2023			2.8800	3.1100	3.7900		1.220	2.3400
4/23/2024 - 5/23/2024			6.3600	18.4200				1.8600
5/23/2024 - 5/30/2024								
7/26/2024 - 8/9/2024								
9/25/2024 - 10/25/2024			1.9400	3.8800	5.8300		2.510	1.0100
10/25/2024 - 11/1/2024				3.8800				

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Table 9

Analytical Data Summary for Turbidity, field (NTU)

Dates	MW-604B	MW-605B	OW-105B	OW-113B	OW-114B	OW-205B	OW-209B	OW-216B
2/24/2015 - 3/20/2015	.0774 *	8.834 *		.530 *	10.3500 *		4.1710 *	19.680 *
6/12/2015 - 6/26/2015	4.0360	5.231						
8/20/2015 - 9/9/2015	1.9750 *	1.173 *		1.324 *	.8530 *		.5909 *	5.373 *
3/7/2016 - 3/29/2016			.019 *	4.027 *	1.2282 *	108.000 *	.3373 *	27.630 *
9/12/2016 - 10/11/2016	5.5880 *	1.967 *		10.360 *	6.8330 *		.8506 *	7.411 *
12/6/2016 - 12/15/2016					.0031	12.470		
3/17/2017 - 4/8/2017	.8619	1.445		50.640	18.6400	39.530	.0160	98.730
6/13/2017 - 6/21/2017						3.316		
9/6/2017 - 9/29/2017	1.6910	1.105		2.817	3.0100	6.944	.2910	14.240
11/28/2017 - 11/30/2017					.9006	2.733		
1/10/2018						51.260		
3/12/2018 - 4/11/2018	.2892 *	1.624 *		7.532 *	8.1650	98.700 *	.1760 *	21.140 *
7/10/2018 - 7/17/2018					14.8300 *	6.709 *		
8/29/2018 - 9/27/2018	1.5250 *	4.229 *		6.252 *	1.8610 *	10.480 *	1.1470 *	7.607 *
12/16/2018				9.840 *				
3/26/2019 - 4/25/2019	.0000 *	.020 *		13.230 *	.4300 *	152.170 *	31.5800 *	29.510
6/19/2019 - 6/25/2019				25.970 *				
9/17/2019 - 10/11/2019	14.7200 *	1.370 *		13.160 *	3.4600 *	.530 *	2.7400 *	9.260 *
11/25/2019						10.690 *		
3/23/2020 - 4/22/2020	.2400 *	13.890 *	.590 *	28.540 *	.6900 *	136.350 *	.2700 *	21.690 *
8/5/2020 - 8/18/2020				27.380			1.4400	
8/18/2020 - 9/17/2020		1.880						
9/17/2020 - 10/8/2020	1.8200		1.440	13.770	.4300	1.670	1.5700	35.880
12/8/2020 - 12/10/2020	.3000		.260					
3/11/2021 - 4/6/2021	.1900	.420	.250	.080	.0900	289.850	.9500	23.700
6/17/2021 - 6/22/2021			3.670	21.630		2.450		
10/26/2021 - 11/24/2021			.000		.0000		.4500	4.060
4/11/2022 - 5/11/2022	.0000		.000		1.1500			5.540
10/11/2022 - 11/10/2022	.5000		.000	2.920	.0000	.000	.0000	5.260
3/20/2023 - 4/19/2023	1.9100		.840	19.390	2.7600	144.300	15.4400	.950
8/8/2023 - 9/7/2023						.810	62.0500	
9/7/2023 - 10/5/2023	1.2200		1.270	2.960	2.0100			3.050
4/23/2024 - 5/23/2024			4.150	135.600	19.1100	59.730	2.2800	3.710
5/23/2024 - 5/30/2024				135.600				
7/26/2024 - 8/9/2024								
9/25/2024 - 10/25/2024	1.8000		5.380	29.250	1.5500		1.2400	8.280
10/25/2024 - 11/1/2024								

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Turbidity, field (NTU)

Dates	OW-401B	OW-402B	OW-403B	OW-405B	OW-406B	OW-410B	OW-411B	OW-412B
2/24/2015 - 3/20/2015	2.087 *	.6035 *	<.0000	.0330	.5056 *			
6/12/2015 - 6/26/2015								
8/20/2015 - 9/9/2015	4.091 *	.9930 *	.3290	2.6160	.4405 *			
3/7/2016 - 3/29/2016	3.148 *	.7932 *	.0782	9.5530	4.2120 *			
9/12/2016 - 10/11/2016	1.788 *	.2166 *	2.3150	8.4010	5.6420 *			
12/6/2016 - 12/15/2016	9.256	5.7530				3.868		1.7780
3/17/2017 - 4/8/2017	1.462	1.0690	.5811	.9183	2.1910	.743	.6127	.0391
6/13/2017 - 6/21/2017	18.200					1.646	3.8990	52.7300
9/6/2017 - 9/29/2017	3.131	2.0170	.4795	5.3260	8.0660	2.491	.4519	1.4550
11/28/2017 - 11/30/2017		7.8460					.7708	.6655
1/10/2018								9.5230
3/12/2018 - 4/11/2018	1.581 *	1.1370 *	4.3750 *	5.2790 *	6.1730 *	62.710 *	.0197 *	11.4600 *
7/10/2018 - 7/17/2018	53.510 *	2.9170 *		1.8180 *				
8/29/2018 - 9/27/2018	7.114 *	1.9270 *	8.6630 *	1.0440 *	2.3670 *	20.310 *	1.1140 *	1.8290 *
12/16/2018								
3/26/2019 - 4/25/2019	20.150 *	4.7700 *	.6600 *	5.7400 *	1.3200 *	156.760 *	.0000 *	13.5300 *
6/19/2019 - 6/25/2019								
9/17/2019 - 10/11/2019	.850 *	.7900 *	5.4400 *	6.6500 *	9.1500 *	.620 *	.6200 *	31.0700 *
11/25/2019					.7800 *			
3/23/2020 - 4/22/2020	5.090 *	.0533 *			2.1300 *	126.840 *	4.6700 *	15.9100 *
8/5/2020 - 8/18/2020								
8/18/2020 - 9/17/2020					2.5900			
9/17/2020 - 10/8/2020	2.580	.6300				8.280	2.1600	11.0100
12/8/2020 - 12/10/2020								
3/11/2021 - 4/6/2021	2.940	.0000				111.540	.8600	1.0100
6/17/2021 - 6/22/2021	14.550	2.4000						
10/26/2021 - 11/24/2021		.1300						
4/11/2022 - 5/11/2022	.000	.0000				63.900	.0000	23.4200
10/11/2022 - 11/10/2022	.000	.0000						
3/20/2023 - 4/19/2023	8.590	.3800				102.950	1.2200	31.6300
8/8/2023 - 9/7/2023								
9/7/2023 - 10/5/2023	2.090	1.2800						
4/23/2024 - 5/23/2024	3.370	.8200				182.750	.7700	74.3300
5/23/2024 - 5/30/2024								
7/26/2024 - 8/9/2024	7.540							
9/25/2024 - 10/25/2024	8.380	.7600						
10/25/2024 - 11/1/2024								

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Turbidity, field (NTU)

Dates	OW-413B	OW-414B
2/24/2015 - 3/20/2015		
6/12/2015 - 6/26/2015		
8/20/2015 - 9/9/2015		
3/7/2016 - 3/29/2016		
9/12/2016 - 10/11/2016		
12/6/2016 - 12/15/2016	24.970	17.560
3/17/2017 - 4/8/2017	5.833	4.469
6/13/2017 - 6/21/2017	24.730	3.440
9/6/2017 - 9/29/2017	15.800	2.734
11/28/2017 - 11/30/2017	15.130	2.638
1/10/2018		
3/12/2018 - 4/11/2018	99.730 *	6.704 *
7/10/2018 - 7/17/2018		
8/29/2018 - 9/27/2018	16.540 *	2.988 *
12/16/2018		
3/26/2019 - 4/25/2019	2.410	79.180 *
6/19/2019 - 6/25/2019		
9/17/2019 - 10/11/2019	4.220 *	21.465 *
11/25/2019		
3/23/2020 - 4/22/2020	64.670 *	7.360 *
8/5/2020 - 8/18/2020		
8/18/2020 - 9/17/2020		
9/17/2020 - 10/8/2020	13.150	14.150
12/8/2020 - 12/10/2020		
3/11/2021 - 4/6/2021	136.320	3.290
6/17/2021 - 6/22/2021		
10/26/2021 - 11/24/2021	.460	
4/11/2022 - 5/11/2022	18.930	.980
10/11/2022 - 11/10/2022	27.840	
3/20/2023 - 4/19/2023	118.550	2.930
8/8/2023 - 9/7/2023		
9/7/2023 - 10/5/2023	40.290	
4/23/2024 - 5/23/2024	81.810	1.010
5/23/2024 - 5/30/2024		
7/26/2024 - 8/9/2024		
9/25/2024 - 10/25/2024	25.270	
10/25/2024 - 11/1/2024		

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Vanadium (ug/L)

Dates	MW-308B	MW-312B	MW-319B	MW-409B	MW-501B	MW-601B	MW-602B
2/24/2015 - 3/20/2015	.929	.516	.576	<.449	.495	.993	1.620
6/12/2015 - 6/26/2015						.924	.632
8/20/2015 - 9/9/2015	.964	<.449	.936	<.449	<.449	1.050	1.970
12/11/2015 - 12/17/2015						.980	2.960
3/7/2016 - 3/29/2016	.931	.594	.448	.417	.322	.685	1.700
9/12/2016 - 10/11/2016	.885	.817	.641	<.255	.375	1.200	3.780
12/6/2016 - 12/15/2016							
3/17/2017 - 4/8/2017	1.060	<.840	<.840	<.840	<.840	1.010	1.200
6/13/2017 - 6/21/2017							
9/6/2017 - 9/29/2017	1.120	<.840	<.840	<.840	<.840	<.840	1.030
11/28/2017 - 11/30/2017							
3/12/2018 - 4/11/2018	1.380	1.680	.653	.657	1.310	.886	1.140
7/10/2018 - 7/17/2018				<.520	.774		
8/29/2018 - 9/27/2018	1.170	<.520	.828	<.520		.898	1.160
12/16/2018					.844		
3/26/2019 - 4/25/2019	<.820 1.310J	<.820	<.820	<.820	<.820	<.820 .864J	<.820 1.060J
9/17/2019 - 10/11/2019	<.820 1.340J	<.820	<.820 1.050J	<.820	<.820 .935J	<.820 .901J	<.820 .865J
3/23/2020 - 4/22/2020			<.820	<.820 1.040J	<.820 .940J	<.820	<.820
8/18/2020 - 9/17/2020				<.850			
9/17/2020 - 10/8/2020			<.850	<.850	<.850	<.850	<.850
12/8/2020 - 12/10/2020							
3/11/2021 - 4/6/2021			<1.100	<1.100	<1.100		<1.100
6/17/2021 - 6/22/2021							
10/26/2021 - 11/24/2021			<1.100 1.310J	<1.100	<1.100		<1.100
4/11/2022 - 5/11/2022			<1.100	<1.100 1.310J	<1.100		<1.100
10/11/2022 - 11/10/2022			<1.100	<1.100	<1.100		<1.100
3/20/2023 - 4/19/2023			<1.100	<1.100	<1.100		<1.100
8/8/2023 - 9/7/2023							
9/7/2023 - 10/5/2023			<1.100	<1.100	<1.100		<1.100
4/23/2024 - 5/23/2024			<1.100	<1.100	<1.100		<1.100
5/23/2024 - 5/30/2024							
9/25/2024 - 10/25/2024			<1.100 1.270J	<1.100	<1.100		<1.100 1.760J
10/25/2024 - 11/1/2024				<1.100			

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Vanadium (ug/L)

Dates	MW-603B	MW-604B	MW-605B	OW-105B	OW-113B	OW-114B	OW-205B	OW-209B
2/24/2015 - 3/20/2015	1.300	1.150	1.040		<.449	<.449		<.449
6/12/2015 - 6/26/2015	<.449	.834	.838					
8/20/2015 - 9/9/2015	.594	.890	.971		<.449	<.449		<.449
12/11/2015 - 12/17/2015	.749	1.030	.926					
3/7/2016 - 3/29/2016	.396	.605	.595	<.255	<.255	<.255	<.255	<.255
9/12/2016 - 10/11/2016	1.120	.972	.945		<.255	<.255		<.255
12/6/2016 - 12/15/2016						<.255	<.255	
3/17/2017 - 4/8/2017	<.840	<.840	<.840		<.840	<.840	<.840	<.840
6/13/2017 - 6/21/2017							<.840	
9/6/2017 - 9/29/2017	<.840	<.840	.891		<.840	<.840	<.840	<.840
11/28/2017 - 11/30/2017							<.840	
3/12/2018 - 4/11/2018	<.520	.787	1.120		<.520	<.840	<.840	<.520
7/10/2018 - 7/17/2018							<10.400	
8/29/2018 - 9/27/2018	<.520	.775	.921		<.520	<.520	<.520	<.520
12/16/2018								
3/26/2019 - 4/25/2019	<.820	<.820	<.820 .883J		<.820	<.820	<.820	<.820
9/17/2019 - 10/11/2019	<.820	<.820	<.820		<.820	<.820	<.820	<.820
3/23/2020 - 4/22/2020	<.820	<.820	<.820	<.820	<.820	<.820	<.820	<.820
8/18/2020 - 9/17/2020			<.850					
9/17/2020 - 10/8/2020	<.850	<.850 .870J		<.850	<.850	<.850	<.850	<.850
12/8/2020 - 12/10/2020				<.850				
3/11/2021 - 4/6/2021	<1.100	<1.100	<1.100	<1.100	<1.100	<1.100	<1.100	<1.100
6/17/2021 - 6/22/2021				<1.100				
10/26/2021 - 11/24/2021	<1.100	<1.100		<1.100	<1.100	<1.100	<1.100	<1.100 1.220J
4/11/2022 - 5/11/2022	<1.100	<1.100		<1.100	<1.100	<1.100	<1.100	<1.100
10/11/2022 - 11/10/2022	<1.100	<1.100		<1.100	<1.100	<1.100	<1.100	<1.100
3/20/2023 - 4/19/2023	<1.100	<1.100		<1.100	<1.100	<1.100	<1.100	<1.100
8/8/2023 - 9/7/2023							<1.100	<1.100
9/7/2023 - 10/5/2023	<1.100	<1.100		<1.100	<1.100	<1.100		
4/23/2024 - 5/23/2024	<1.100	<1.100		<1.100	<1.100	<1.100	<1.100	<1.100
5/23/2024 - 5/30/2024					<1.100			
9/25/2024 - 10/25/2024	<1.100	<1.100		<1.100	<1.100	<1.100		<1.100
10/25/2024 - 11/1/2024								

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Vanadium (ug/L)

Dates	OW-216B	OW-401B	OW-402B	OW-403B	OW-405B	OW-406B	OW-410B
2/24/2015 - 3/20/2015	<.449	1.15	<.449	.866	.457	.633	
6/12/2015 - 6/26/2015							
8/20/2015 - 9/9/2015	<.449	1.26	<.449	.976	.483	.701	
12/11/2015 - 12/17/2015							
3/7/2016 - 3/29/2016	<.255	1.31	<.255	.518	.584	.792	
9/12/2016 - 10/11/2016	.863	1.54	.309	<.255	.524	.868	
12/6/2016 - 12/15/2016		1.61	<.255				1.93
3/17/2017 - 4/8/2017	<.840	1.61	<.840	<.840	<.840	<.840	1.56
6/13/2017 - 6/21/2017							2.65
9/6/2017 - 9/29/2017	<.840	1.90	<.840	.878	<.840	<.840	3.07
11/28/2017 - 11/30/2017							1.80
3/12/2018 - 4/11/2018	<.520	1.95	<.520	.871	<.840	.939	<.52
7/10/2018 - 7/17/2018							
8/29/2018 - 9/27/2018	<.520	1.77	<.520	.838	.628	.919	1.59
12/16/2018							
3/26/2019 - 4/25/2019	<.820	<.82 2.21J	<.820	<.820 1.110J	<.820 .843J	<.820 .949J	<.82 1.38J
9/17/2019 - 10/11/2019	<.820	<.82 2.52J	<.820	<.820 .942J	<.820	<.820 .891J	<1.64
3/23/2020 - 4/22/2020	<.820	<.82 3.41J	<.820			<.820	<.82 1.43J
8/18/2020 - 9/17/2020						<.850	
9/17/2020 - 10/8/2020	<.850	<.85 2.86J	<.850				<.85
12/8/2020 - 12/10/2020							
3/11/2021 - 4/6/2021	<1.100	<1.10 3.93J	<1.100				<1.10 1.49J
6/17/2021 - 6/22/2021							
10/26/2021 - 11/24/2021	<1.100	<1.10 3.64J	<1.100				
4/11/2022 - 5/11/2022	<1.100	<1.10 3.11J	<1.100				<1.10 1.19J
10/11/2022 - 11/10/2022	<1.100	<1.10 2.25J	<1.100				
3/20/2023 - 4/19/2023	<1.100	<4.40	<1.100				<1.10 1.38J
8/8/2023 - 9/7/2023							
9/7/2023 - 10/5/2023	<1.100	<1.10 2.17J	<1.100				
4/23/2024 - 5/23/2024	<1.100	<1.10 2.55J	<1.100				<1.10 1.76J
5/23/2024 - 5/30/2024							
9/25/2024 - 10/25/2024	<1.100	<1.10 3.15J	<1.100				
10/25/2024 - 11/1/2024							

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Vanadium (ug/L)

Dates	OW-411B	OW-412B	OW-413B	OW-414B
2/24/2015 - 3/20/2015				
6/12/2015 - 6/26/2015				
8/20/2015 - 9/9/2015				
12/11/2015 - 12/17/2015				
3/7/2016 - 3/29/2016				
9/12/2016 - 10/11/2016				
12/6/2016 - 12/15/2016	3.070	3.340	1.05	1.810
3/17/2017 - 4/8/2017	1.320	2.710	<.84	1.010
6/13/2017 - 6/21/2017	1.130	2.510	.94	.872
9/6/2017 - 9/29/2017	<.840	1.510	1.58	1.590
11/28/2017 - 11/30/2017	1.020	2.930	1.23	1.590
3/12/2018 - 4/11/2018	1.830	2.140	1.70	.829
7/10/2018 - 7/17/2018				
8/29/2018 - 9/27/2018	2.360	6.260	2.20 *	1.090 *
12/16/2018				
3/26/2019 - 4/25/2019	<.820	<.820 .849J	<.82 1.92J	<.820 .997J
9/17/2019 - 10/11/2019	<.820 .924J	<.820 1.990J	<.82	<.820
3/23/2020 - 4/22/2020	<.820 1.410J	<.820 .945J	<.82 1.43J	<.820
8/18/2020 - 9/17/2020				
9/17/2020 - 10/8/2020	<.850 .912J	<.850 .921J	<.85 1.18J	<.850 1.290J
12/8/2020 - 12/10/2020				
3/11/2021 - 4/6/2021	<1.100	<1.100	<1.10 1.11J	<1.100 1.120J
6/17/2021 - 6/22/2021				
10/26/2021 - 11/24/2021			<1.10 1.14J	
4/11/2022 - 5/11/2022	<1.100	<1.100	<1.10 1.18J	<1.100
10/11/2022 - 11/10/2022			<1.10 1.75J	
3/20/2023 - 4/19/2023	<1.100	<1.100 1.520J	<1.10 3.82J	<1.100
8/8/2023 - 9/7/2023				
9/7/2023 - 10/5/2023			<1.10 2.11J	
4/23/2024 - 5/23/2024	<1.100	<1.100	5.91	<1.100
5/23/2024 - 5/30/2024				
9/25/2024 - 10/25/2024			<1.10 3.51J	
10/25/2024 - 11/1/2024				

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Zinc (ug/L)

Dates	MW-308B	MW-312B	MW-319B	MW-409B	MW-501B	MW-601B	MW-602B	MW-603B
2/24/2015 - 3/20/2015	<6.95	<6.95	<6.95	<6.95	<6.95	8.72	<6.95	<6.95
6/12/2015 - 6/26/2015						<6.95	<6.95	<6.95
8/20/2015 - 9/9/2015	<6.95	<6.95	<6.95	7.29	<6.95	11.50	15.50	12.40
12/11/2015 - 12/17/2015						17.40	8.18	7.21
3/7/2016 - 3/29/2016	6.80	<5.21	<5.21	<5.21	<5.21	<5.21	<5.21	<5.21
9/12/2016 - 10/11/2016	<5.21	<5.21	<5.21	6.18	<5.21	<5.21	<5.21	<5.21
12/6/2016 - 12/15/2016								
3/17/2017 - 4/8/2017	<11.50	<11.50	<11.50	<11.50	<11.50	<11.50	<11.50	<11.50
6/13/2017 - 6/21/2017								
9/6/2017 - 9/29/2017	<11.50	<11.50	<11.50	<11.50	<11.50	<11.50	<11.50	<11.50
11/28/2017 - 11/30/2017								
3/12/2018 - 4/11/2018	<11.50	<11.50	<10.00	<10.00	<10.00	<10.00	<10.00	<10.00
7/10/2018 - 7/17/2018				<10.00	<10.00			
8/29/2018 - 9/27/2018	<10.00	<10.00	<10.00	<10.00		<10.00	<10.00	<10.00
12/16/2018					14.10			
3/26/2019 - 4/25/2019	<10.00	<10.00	<10.00	<10.00	<10.00	<10.00	<10.00	<10.00
9/17/2019 - 10/11/2019	<10.00	<10.00	<10.00	<10.00	<10.00	<10.00	<10.00	<10.00
3/23/2020 - 4/22/2020			<10.00	<10.00	<10.00	<10.00	<10.00	<10.00
8/18/2020 - 9/17/2020				<10.00				
9/17/2020 - 10/8/2020			<10.00	<10.00	<10.00	<10.00	<10.00	<10.00
12/8/2020 - 12/10/2020								
3/11/2021 - 4/6/2021			<10.00	<10.00	<10.00		<10.00	<10.00
6/17/2021 - 6/22/2021								
10/26/2021 - 11/24/2021			<10.00	<10.00	<10.00		<10.00	<10.00
4/11/2022 - 5/11/2022			<10.00	<10.00	<10.00		<10.00	<10.00
10/11/2022 - 11/10/2022			<10.00	<10.00	<10.00		<10.00	<10.00
3/20/2023 - 4/19/2023			<6.40	<10.00	<6.40		<6.40	<6.40
8/8/2023 - 9/7/2023								
9/7/2023 - 10/5/2023			<6.40	<6.40 7.86J	<6.40		<6.40 8.50J	<6.40
4/23/2024 - 5/23/2024			<9.70	<9.70	<9.70		<9.70	<9.70
5/23/2024 - 5/30/2024								
9/25/2024 - 10/25/2024			<9.70	<9.70	<9.70		<9.70	<9.70
10/25/2024 - 11/1/2024				<9.70				

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Zinc (ug/L)

Dates	MW-604B	MW-605B	OW-105B	OW-113B	OW-114B	OW-205B	OW-209B	OW-216B
2/24/2015 - 3/20/2015	7.62	10.60		<6.95	<6.95		<6.95	<6.95
6/12/2015 - 6/26/2015	<6.95	<6.95						
8/20/2015 - 9/9/2015	<6.95	7.31		<6.95	<6.95		<6.95	<6.95
12/11/2015 - 12/17/2015	10.40	21.00						
3/7/2016 - 3/29/2016	5.86	<5.21	<5.21	<5.21	28.40	<5.21	<5.21	<5.21
9/12/2016 - 10/11/2016	<5.21	<5.21		<5.21	6.03		<5.21	<5.21
12/6/2016 - 12/15/2016					<5.21	5.28		
3/17/2017 - 4/8/2017	<11.50	<11.50		<11.50	<11.50	<11.50	<11.50	<11.50
6/13/2017 - 6/21/2017						<11.50		
9/6/2017 - 9/29/2017	<11.50	<11.50		<11.50	<11.50	<11.50	<11.50	<11.50
11/28/2017 - 11/30/2017						<11.50		
3/12/2018 - 4/11/2018	<10.00	<11.50		<10.00	<11.50	<11.50	<10.00	<10.00
7/10/2018 - 7/17/2018						<200.00		
8/29/2018 - 9/27/2018	<10.00	<10.00		<10.00	<10.00	<10.00	<10.00	<10.00
12/16/2018								
3/26/2019 - 4/25/2019	<10.00	<10.00		<10.00	<10.00	<10.00	<10.00	<10.00
9/17/2019 - 10/11/2019	<10.00	<10.00		<10.00	<10.00	<10.00	<10.00	<10.00
3/23/2020 - 4/22/2020	<10.00	<10.00	<10.00	<10.00	<10.00	<10.00	<10.00	<10.00
8/18/2020 - 9/17/2020		<10.00						
9/17/2020 - 10/8/2020	<10.00		<10.00	<10.00	<10.00	<10.00	<10.00	<10.00
12/8/2020 - 12/10/2020			<10.00					
3/11/2021 - 4/6/2021	<10.00	<10.00	<10.00	<10.00	<10.00	<10.00	<10.00	<10.00
6/17/2021 - 6/22/2021			<10.00					
10/26/2021 - 11/24/2021	<10.00		<10.00	<10.00	<10.00	<10.00	<10.00	<10.00
4/11/2022 - 5/11/2022	<10.00		<10.00	<10.00	<10.00	<10.00	<10.00	<10.00
10/11/2022 - 11/10/2022	<10.00		<10.00	<10.00	<10.00	<10.00	<10.00	<10.00
3/20/2023 - 4/19/2023	<6.40		<6.40	<6.40	<6.40	<6.40	<10.00	<6.40
8/8/2023 - 9/7/2023						<6.40	<6.40	
9/7/2023 - 10/5/2023	<6.40		<6.40	<6.40	<6.40 10.20J			<6.40
4/23/2024 - 5/23/2024	<9.70		<9.70	<9.70	<9.70	<9.70	<9.70	<9.70
5/23/2024 - 5/30/2024				<9.70				
9/25/2024 - 10/25/2024	<9.70		<9.70	<9.70	<9.70		<9.70	<9.70
10/25/2024 - 11/1/2024								

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Zinc (ug/L)

Dates	OW-401B	OW-402B	OW-403B	OW-405B	OW-406B	OW-410B	OW-411B	OW-412B
2/24/2015 - 3/20/2015	<6.95	<6.95	<6.95	<6.95	<6.95			
6/12/2015 - 6/26/2015								
8/20/2015 - 9/9/2015	<6.95	<6.95	<6.95	<6.95	<6.95			
12/11/2015 - 12/17/2015								
3/7/2016 - 3/29/2016	<5.21	<5.21	<5.21	<5.21	<5.21			
9/12/2016 - 10/11/2016	<5.21	<5.21	<5.21	<5.21	<5.21			
12/6/2016 - 12/15/2016	5.99	<5.21				7.98	13.3	<5.21
3/17/2017 - 4/8/2017	<11.50	<11.50	<11.50	21.00	<11.50	<11.50	<11.5	<11.50
6/13/2017 - 6/21/2017						<11.50	<11.5	<11.50
9/6/2017 - 9/29/2017	<11.50	<11.50	<11.50	<11.50	<11.50	<11.50	<11.5	<11.50
11/28/2017 - 11/30/2017						<11.50	<11.5	<11.50
3/12/2018 - 4/11/2018	<10.00	<10.00	<11.50	<11.50	<11.50	<10.00	<10.0	<10.00
7/10/2018 - 7/17/2018								
8/29/2018 - 9/27/2018	<10.00	<10.00	<10.00	<10.00	<10.00	<10.00	<10.0	<10.00
12/16/2018								
3/26/2019 - 4/25/2019	<10.00	<10.00	<10.00	<10.00	<10.00	<10.00	<10.0	<10.00
9/17/2019 - 10/11/2019	<10.00	<10.00	<10.00	<10.00	<10.00	<20.00	<10.0	<10.00
3/23/2020 - 4/22/2020	<10.00	<10.00			<10.00	<10.00	<10.0	<10.00
8/18/2020 - 9/17/2020					<10.00			
9/17/2020 - 10/8/2020	<10.00	<10.00				<10.00	<10.0	<10.00
12/8/2020 - 12/10/2020								
3/11/2021 - 4/6/2021	<10.00	<10.00				<10.00	<10.0	<10.00
6/17/2021 - 6/22/2021								
10/26/2021 - 11/24/2021	<10.00	<10.00						
4/11/2022 - 5/11/2022	<10.00	<10.00				<10.00	<10.0	<10.00
10/11/2022 - 11/10/2022	<10.00	<10.00						
3/20/2023 - 4/19/2023	<40.00	<10.00				<10.00	<6.4	<6.40
8/8/2023 - 9/7/2023								
9/7/2023 - 10/5/2023	<6.40	<6.40						
4/23/2024 - 5/23/2024	<9.70	<9.70				<9.70	<9.7	<9.70
5/23/2024 - 5/30/2024								
9/25/2024 - 10/25/2024	<9.70	<9.70						
10/25/2024 - 11/1/2024								

* - The displayed value is the arithmetic mean of multiple database matches.

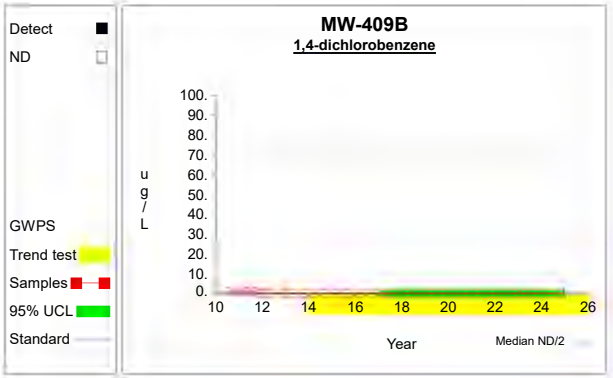
Table 9

Analytical Data Summary for Zinc (ug/L)

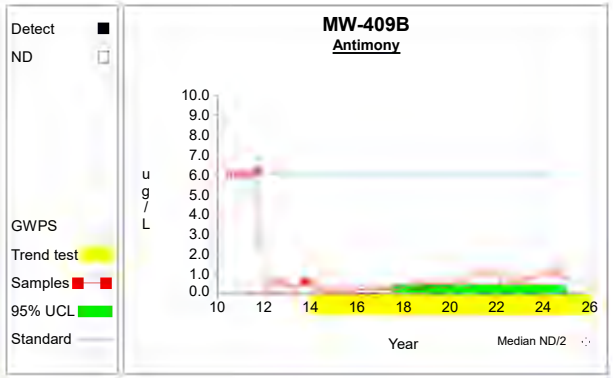
Dates	OW-413B	OW-414B
2/24/2015 - 3/20/2015		
6/12/2015 - 6/26/2015		
8/20/2015 - 9/9/2015		
12/11/2015 - 12/17/2015		
3/7/2016 - 3/29/2016		
9/12/2016 - 10/11/2016		
12/6/2016 - 12/15/2016	<5.21	6.39
3/17/2017 - 4/8/2017	<11.50	<11.50
6/13/2017 - 6/21/2017	<11.50	<11.50
9/6/2017 - 9/29/2017	<11.50	<11.50
11/28/2017 - 11/30/2017	<11.50	<11.50
3/12/2018 - 4/11/2018	<10.00	<10.00
7/10/2018 - 7/17/2018		
8/29/2018 - 9/27/2018	<10.00 *	<10.00 *
12/16/2018		
3/26/2019 - 4/25/2019	<10.00	<10.00
9/17/2019 - 10/11/2019	<10.00	<10.00
3/23/2020 - 4/22/2020	<10.00	<10.00
8/18/2020 - 9/17/2020		
9/17/2020 - 10/8/2020	<10.00	<10.00
12/8/2020 - 12/10/2020		
3/11/2021 - 4/6/2021	<10.00	<10.00
6/17/2021 - 6/22/2021		
10/26/2021 - 11/24/2021	<10.00	
4/11/2022 - 5/11/2022	<10.00	<10.00
10/11/2022 - 11/10/2022	<10.00	
3/20/2023 - 4/19/2023	<6.40	<6.40
8/8/2023 - 9/7/2023		
9/7/2023 - 10/5/2023	<6.40	
4/23/2024 - 5/23/2024	<9.70	<9.70
5/23/2024 - 5/30/2024		
9/25/2024 - 10/25/2024	<9.70	
10/25/2024 - 11/1/2024		

* - The displayed value is the arithmetic mean of multiple database matches.

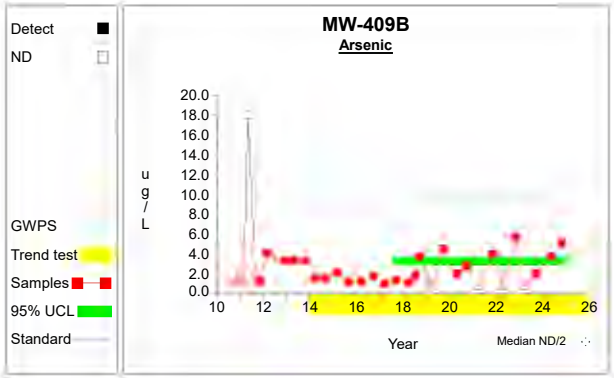
Confidence Limits (Assessment)



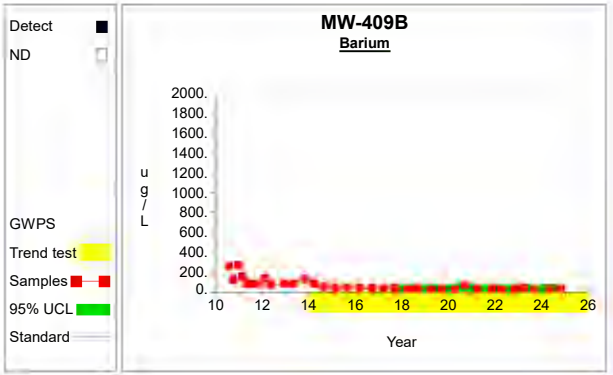
Graph 1



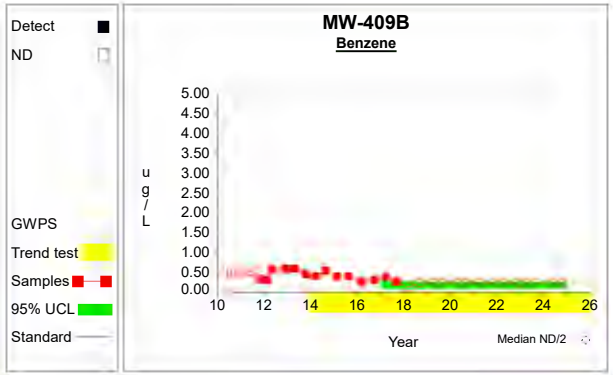
Graph 2



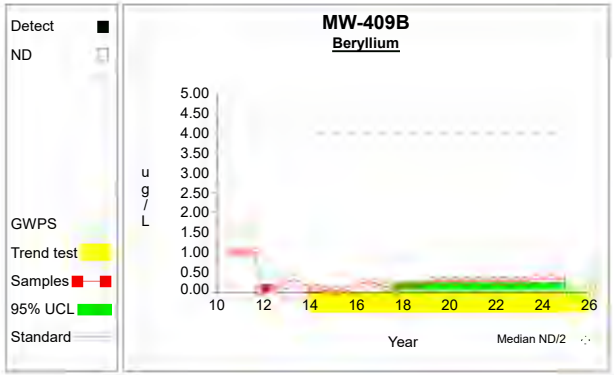
Graph 3



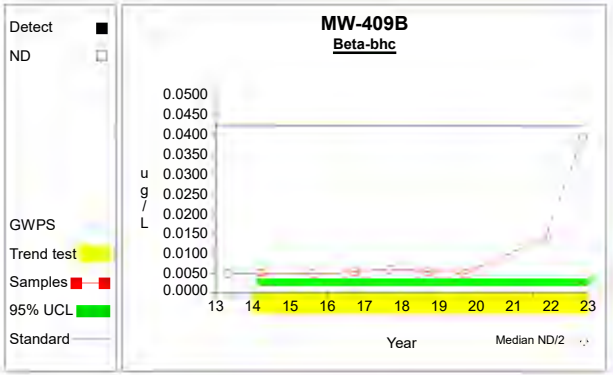
Graph 4



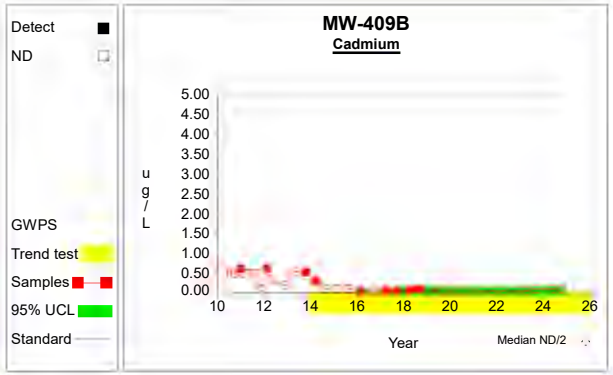
Graph 5



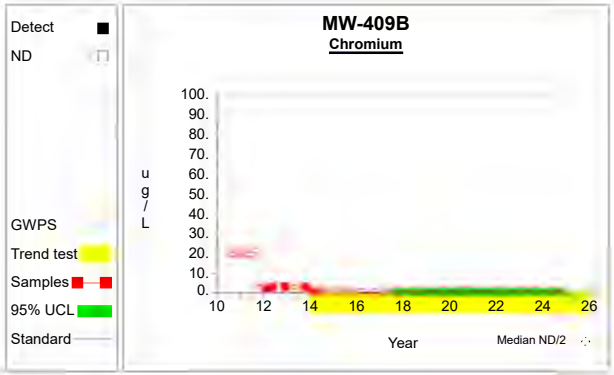
Graph 6



Graph 7

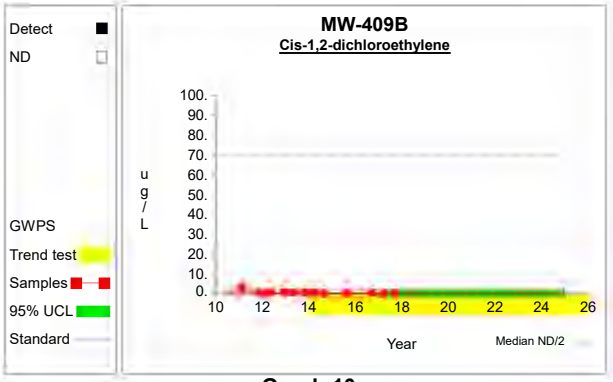


Graph 8

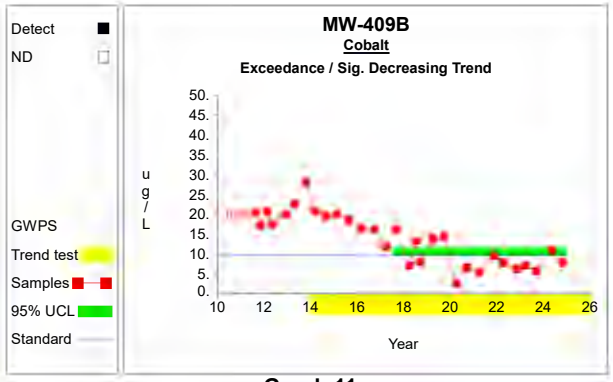


Graph 9

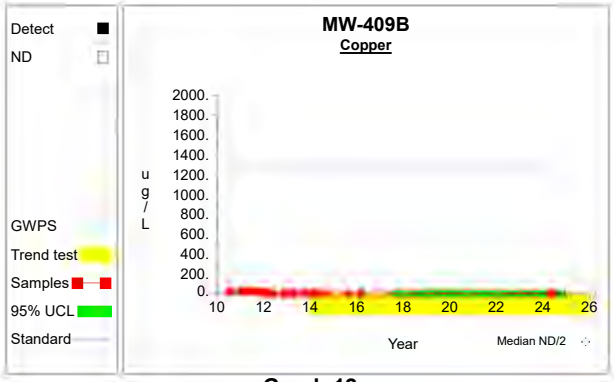
Confidence Limits (Assessment)



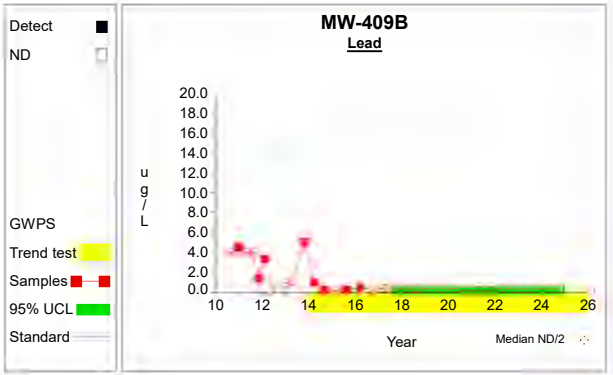
Graph 10



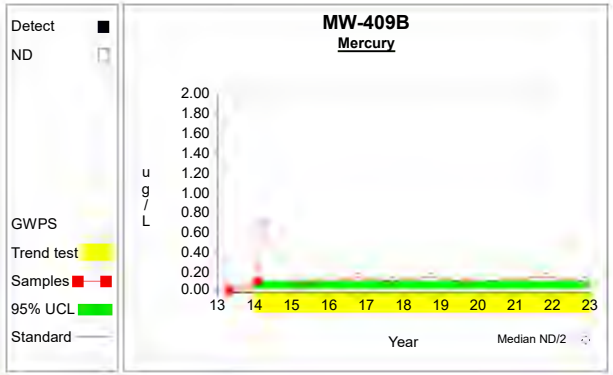
Graph 11



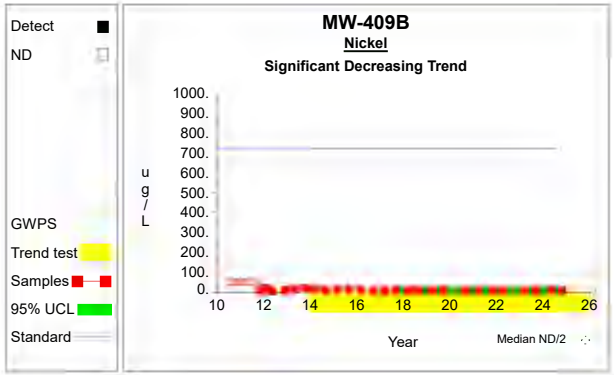
Graph 12



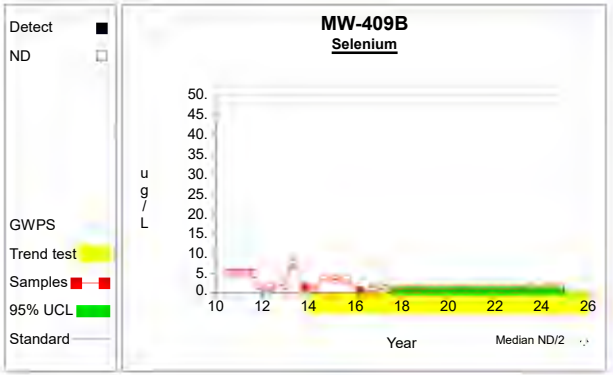
Graph 13



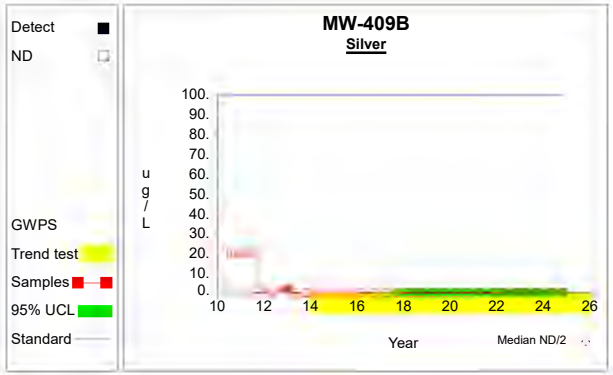
Graph 14



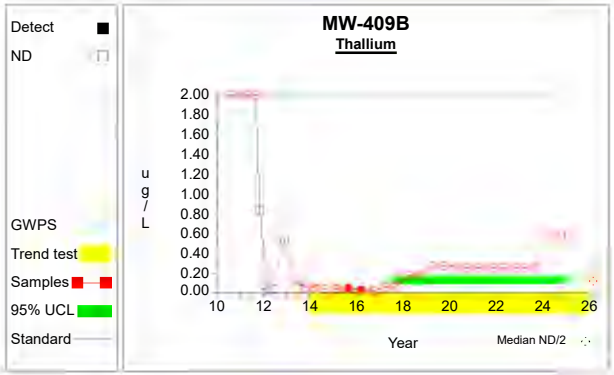
Graph 15



Graph 16

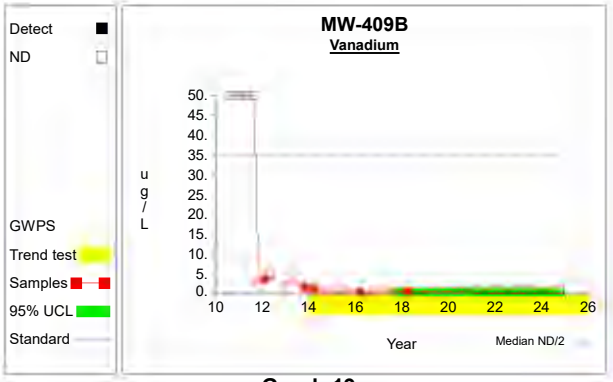


Graph 17

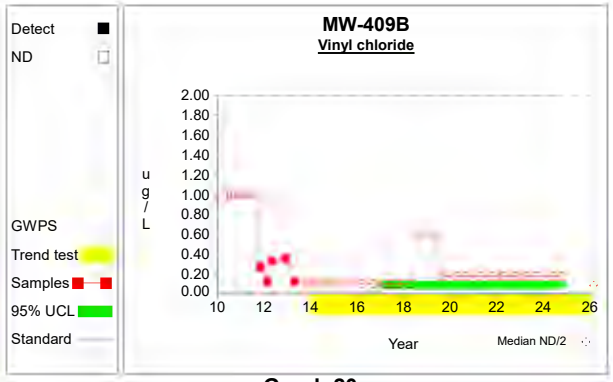


Graph 18

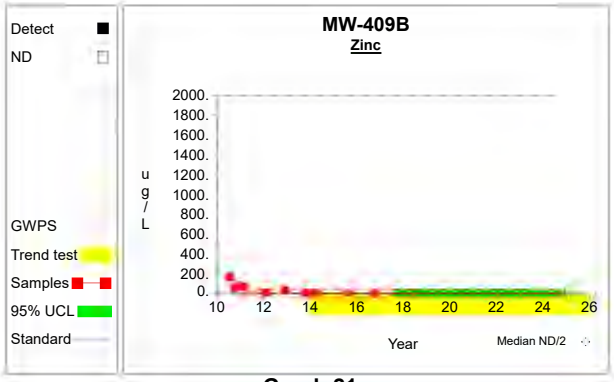
Confidence Limits (Assessment)



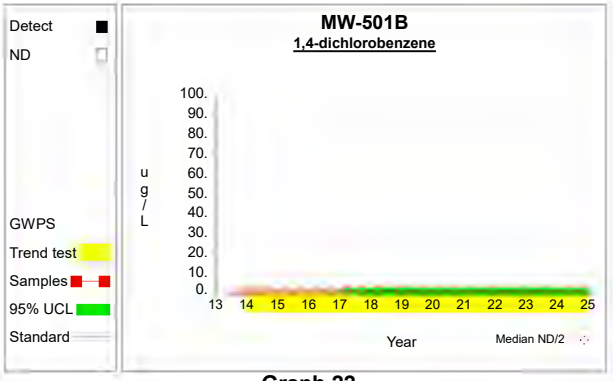
Graph 19



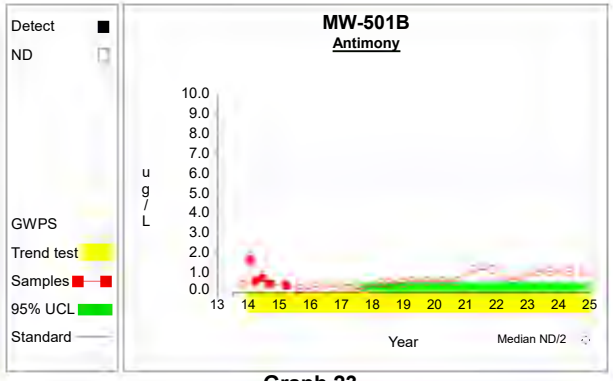
Graph 20



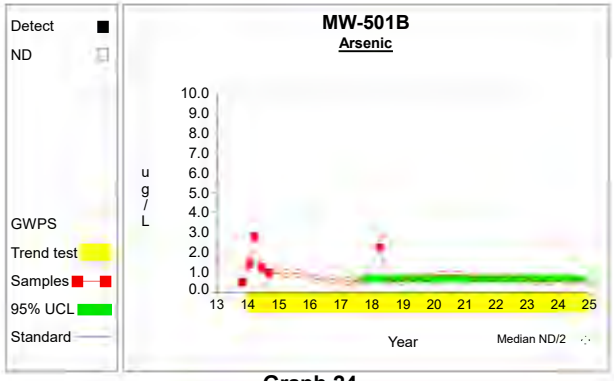
Graph 21



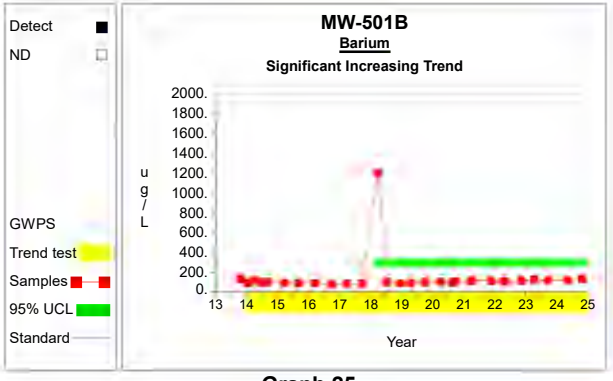
Graph 22



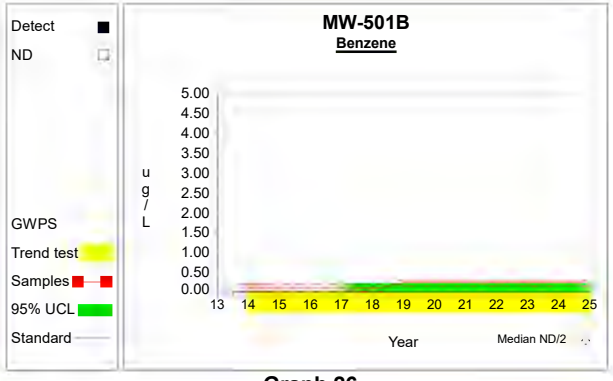
Graph 23



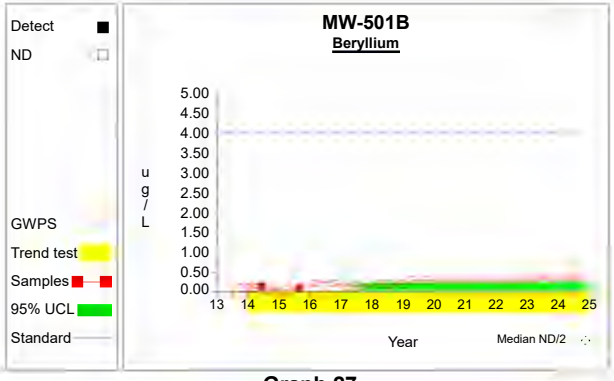
Graph 24



Graph 25

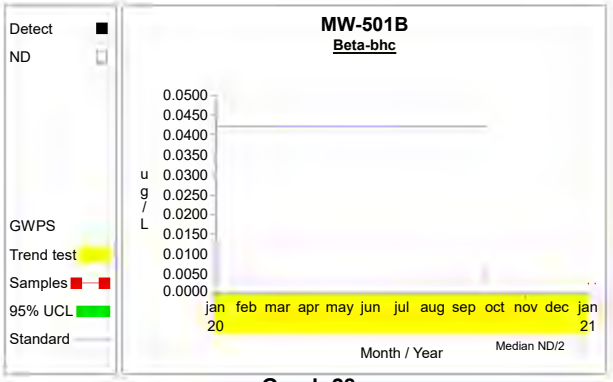


Graph 26

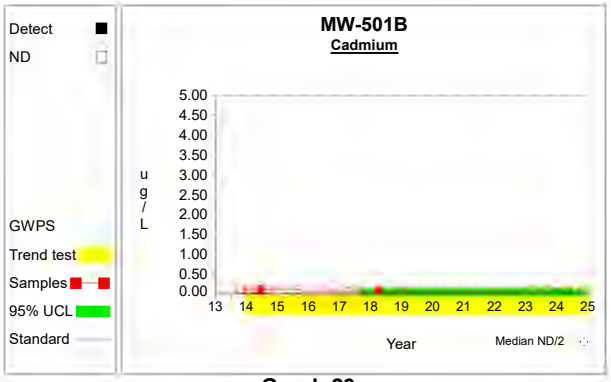


Graph 27

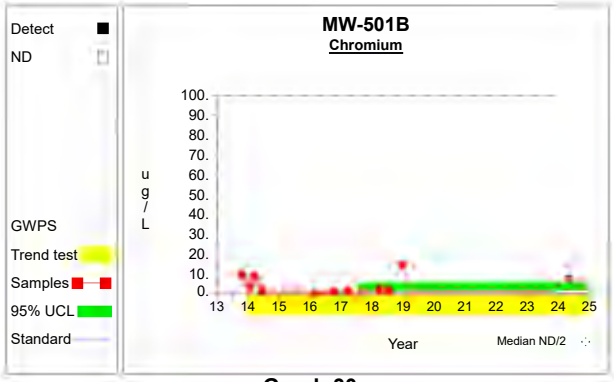
Confidence Limits (Assessment)



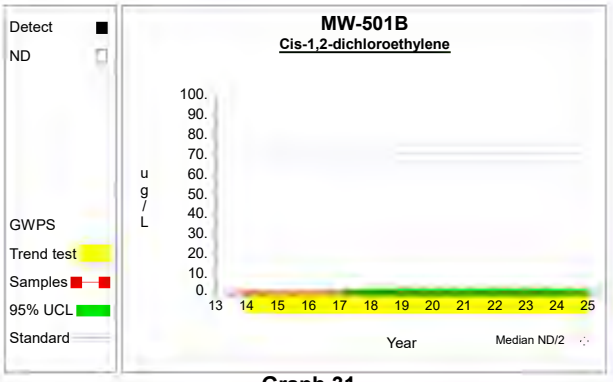
Graph 28



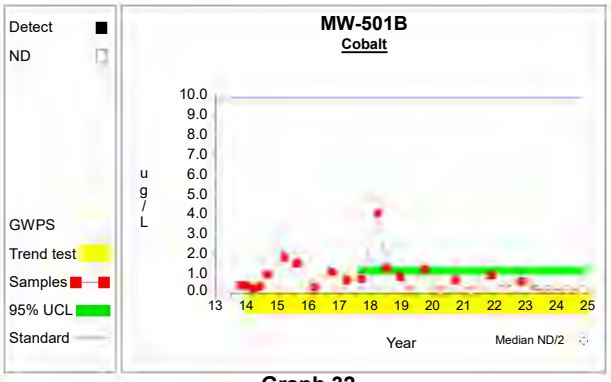
Graph 29



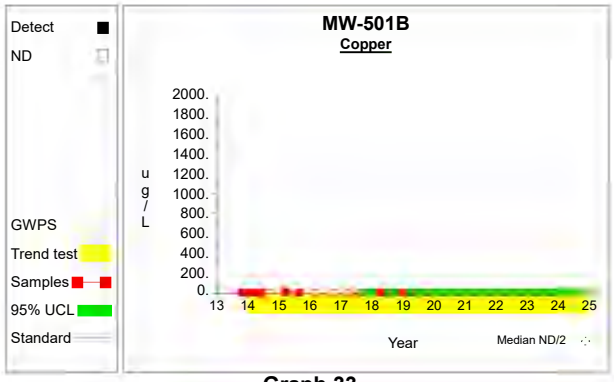
Graph 30



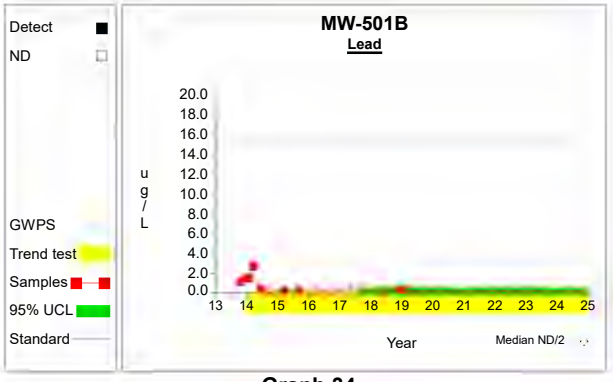
Graph 31



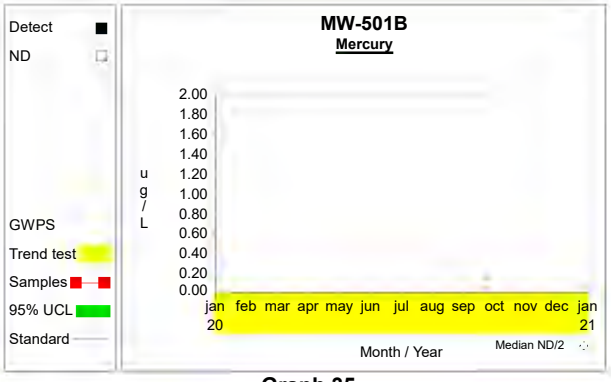
Graph 32



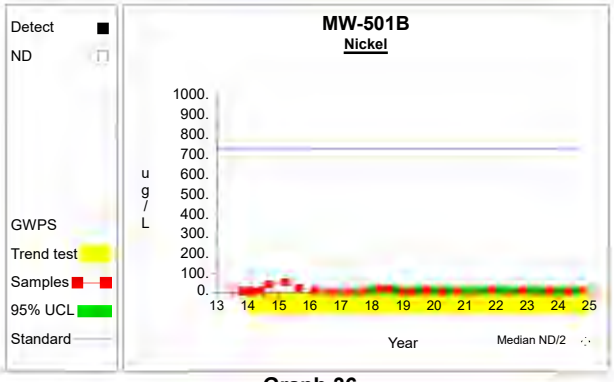
Graph 33



Graph 34

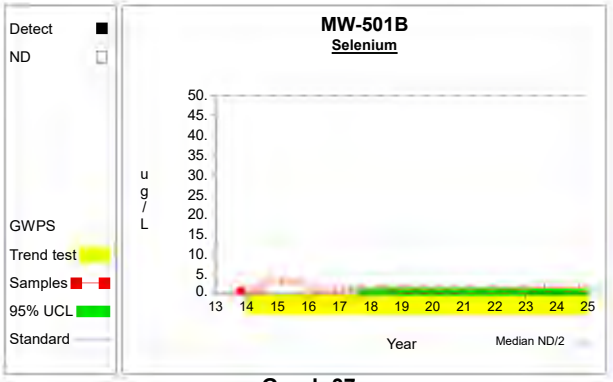


Graph 35

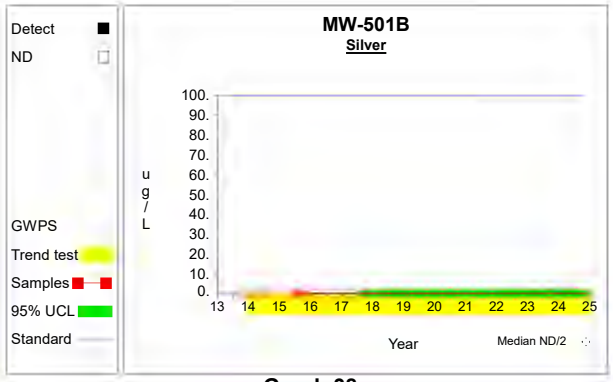


Graph 36

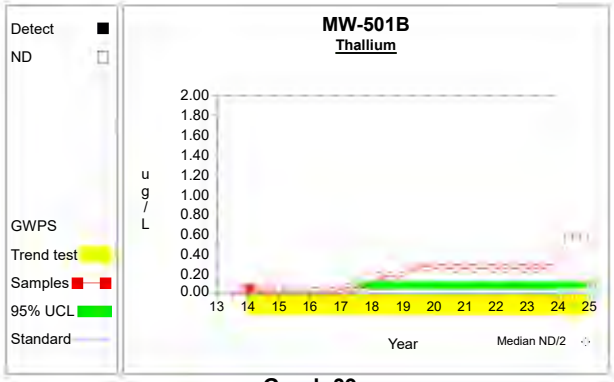
Confidence Limits (Assessment)



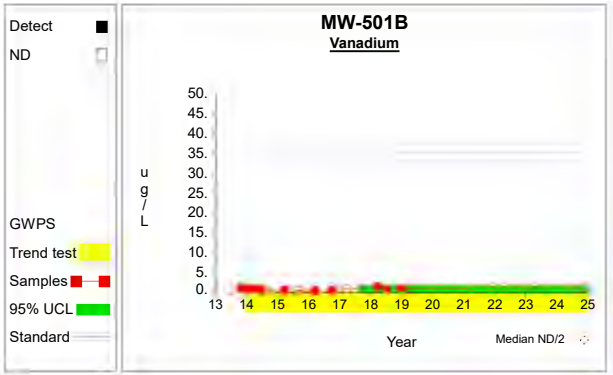
Graph 37



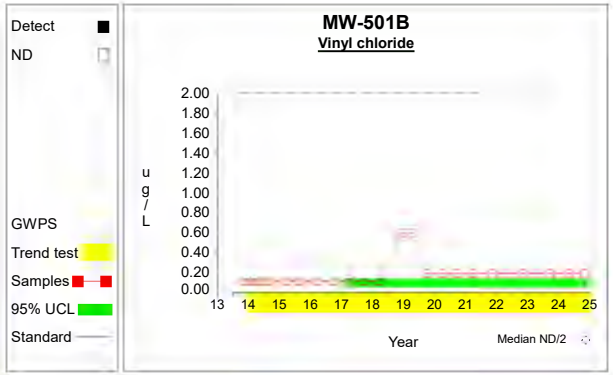
Graph 38



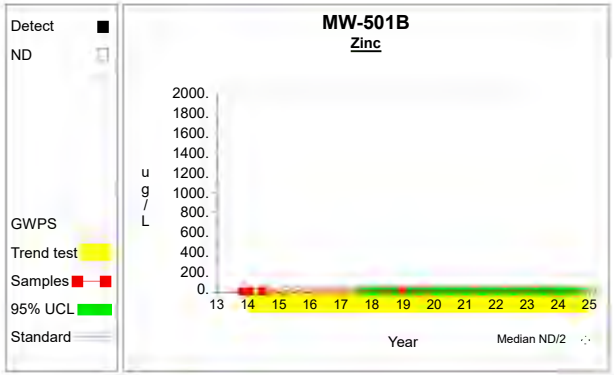
Graph 39



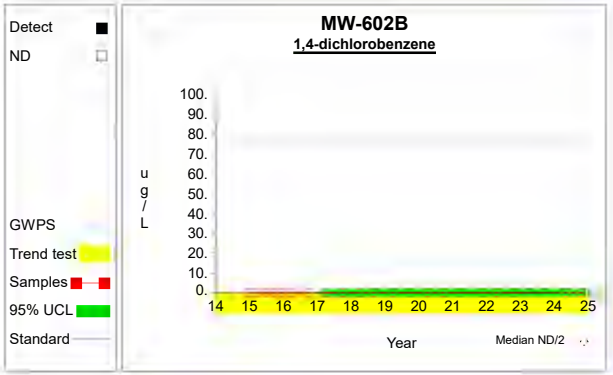
Graph 40



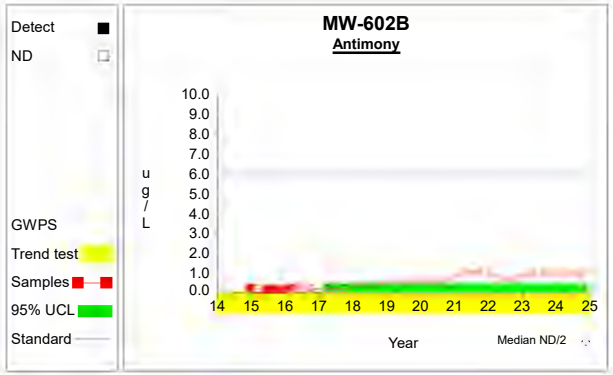
Graph 41



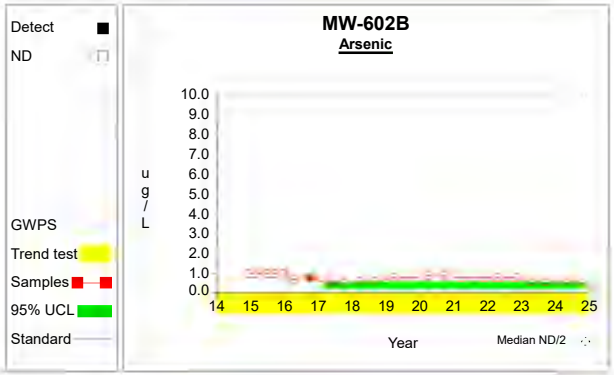
Graph 42



Graph 43

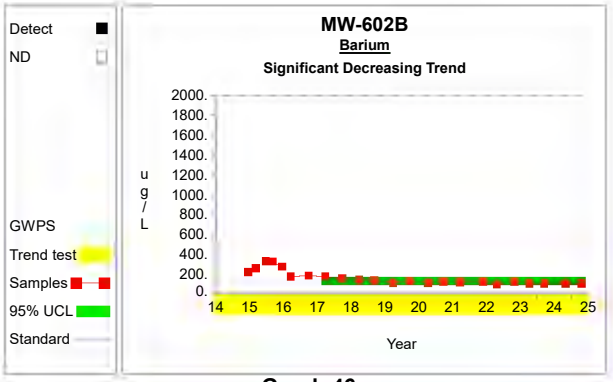


Graph 44

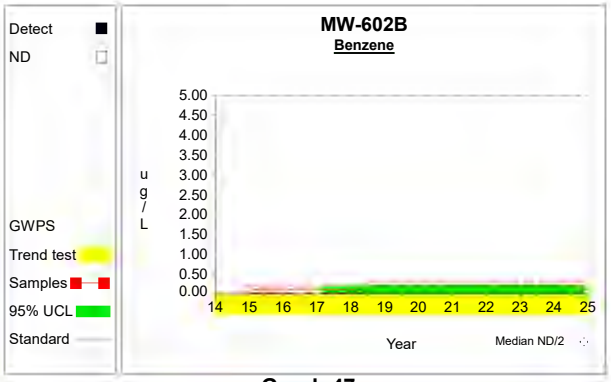


Graph 45

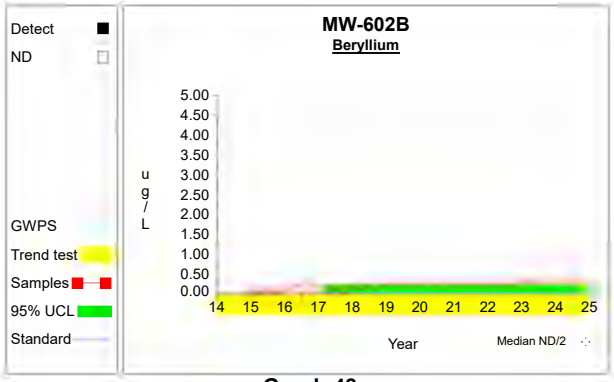
Confidence Limits (Assessment)



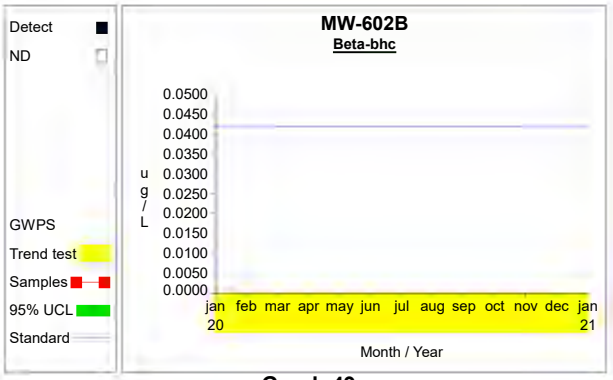
Graph 46



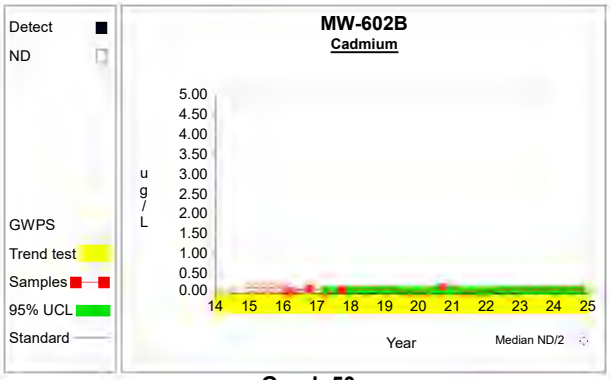
Graph 47



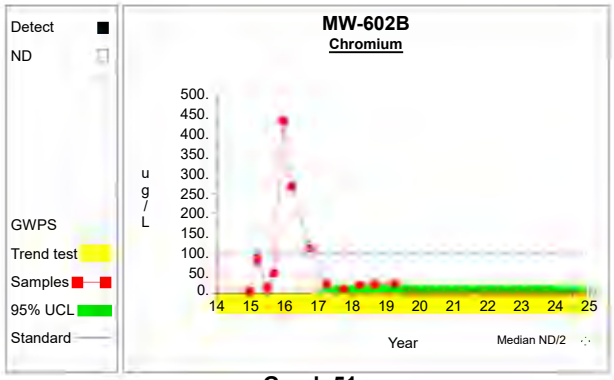
Graph 48



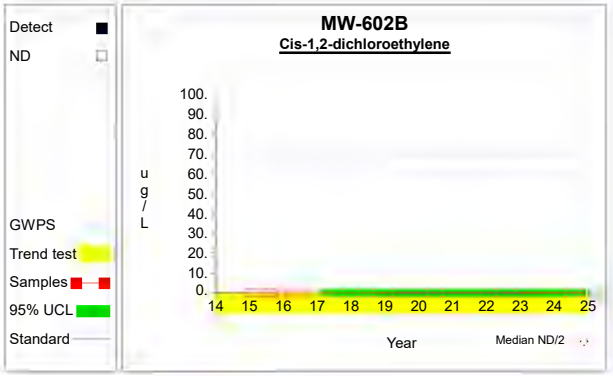
Graph 49



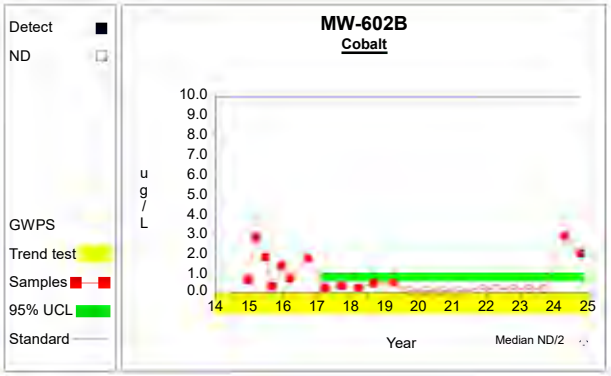
Graph 50



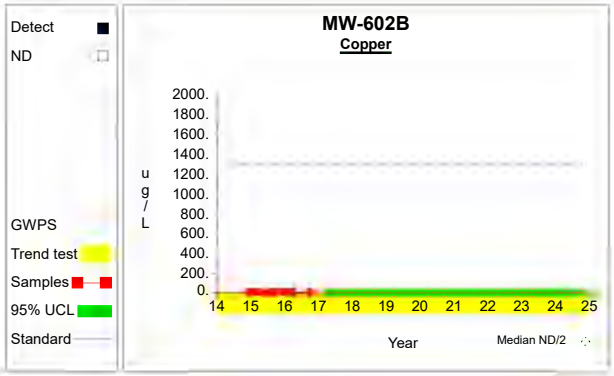
Graph 51



Graph 52

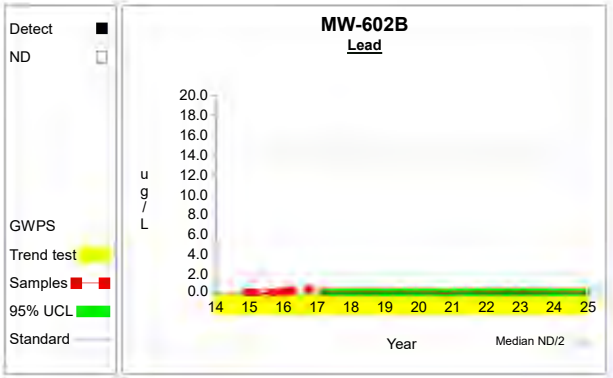


Graph 53

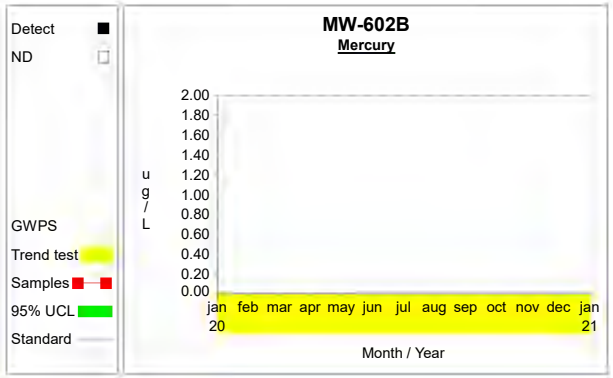


Graph 54

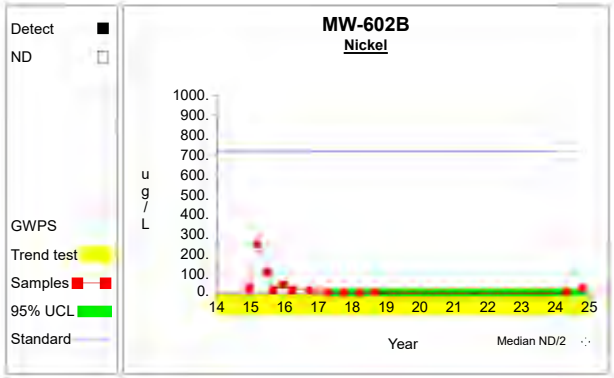
Confidence Limits (Assessment)



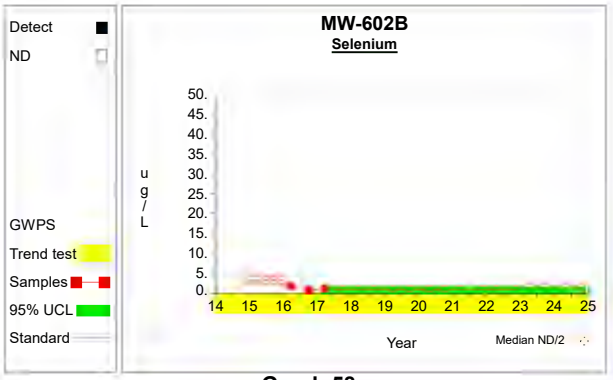
Graph 55



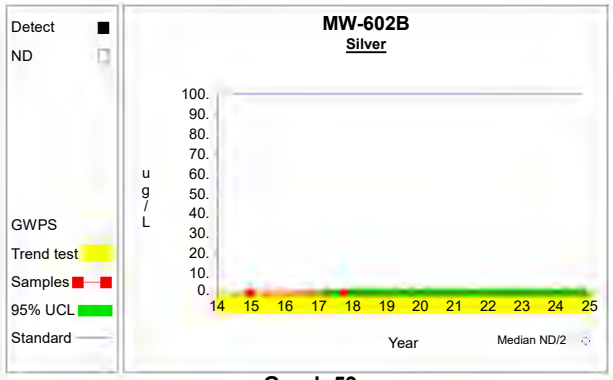
Graph 56



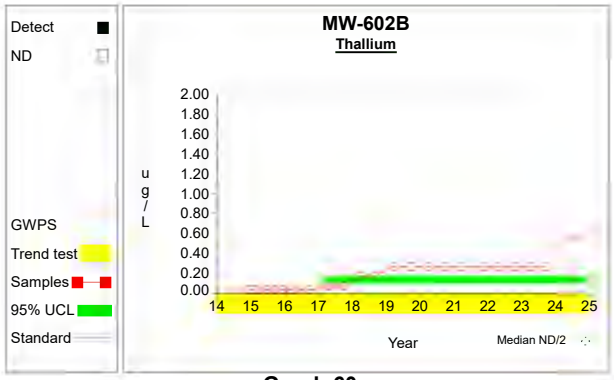
Graph 57



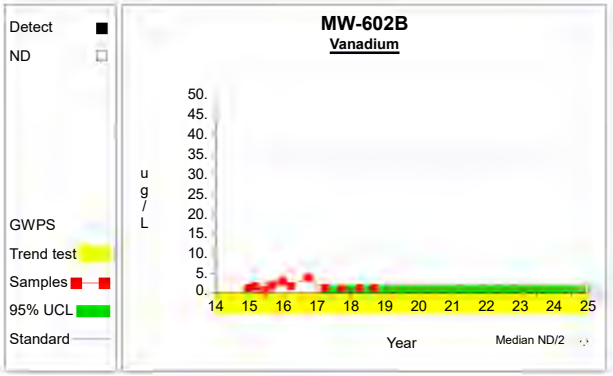
Graph 58



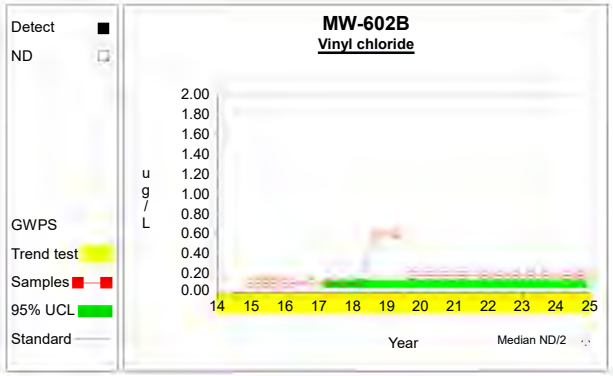
Graph 59



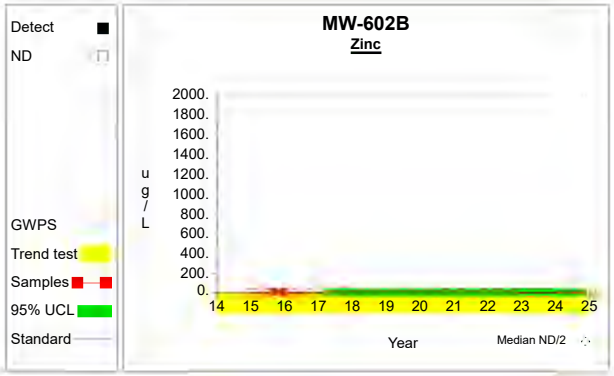
Graph 60



Graph 61

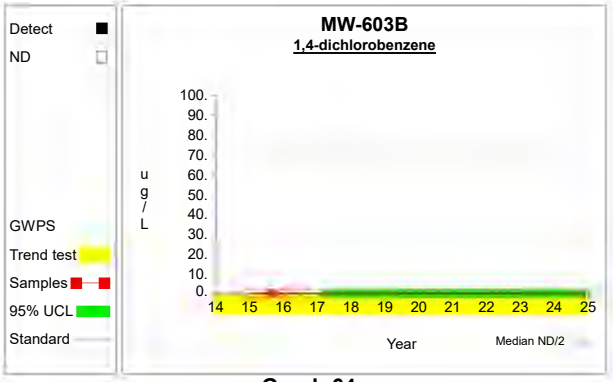


Graph 62

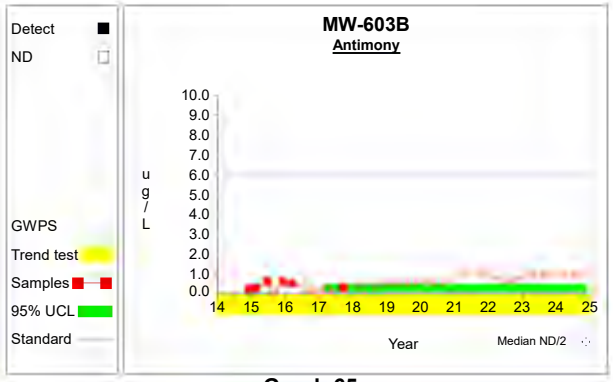


Graph 63

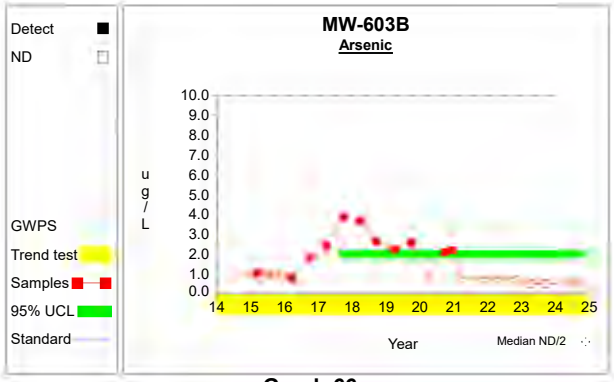
Confidence Limits (Assessment)



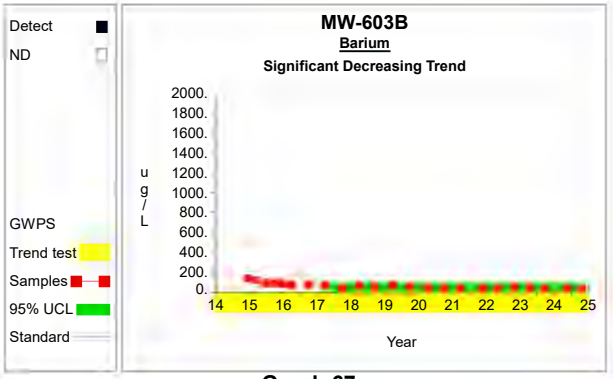
Graph 64



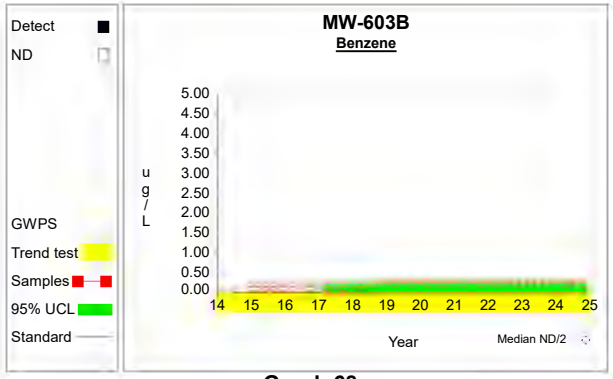
Graph 65



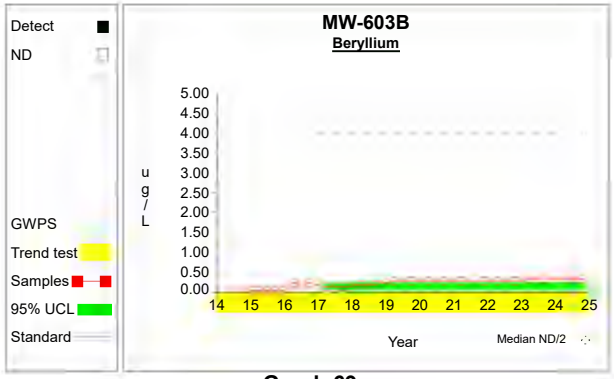
Graph 66



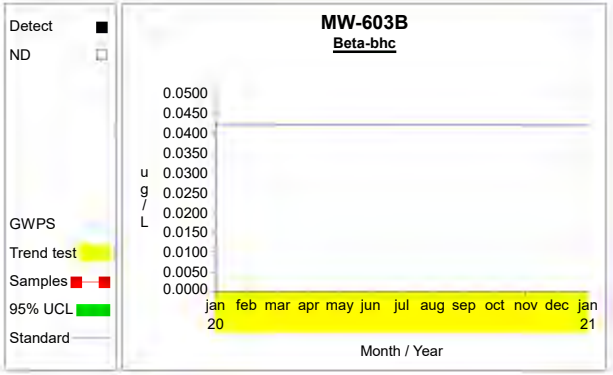
Graph 67



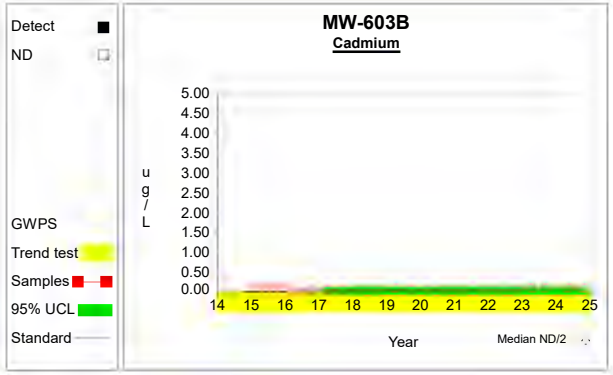
Graph 68



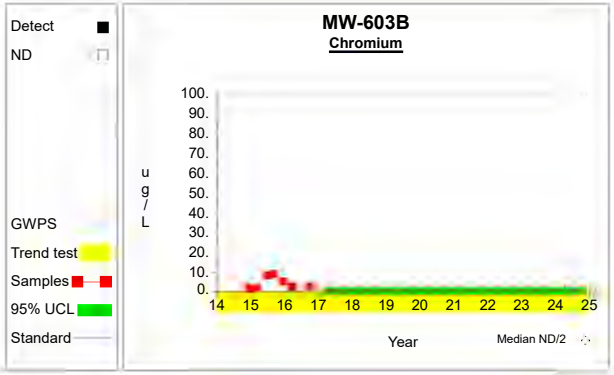
Graph 69



Graph 70

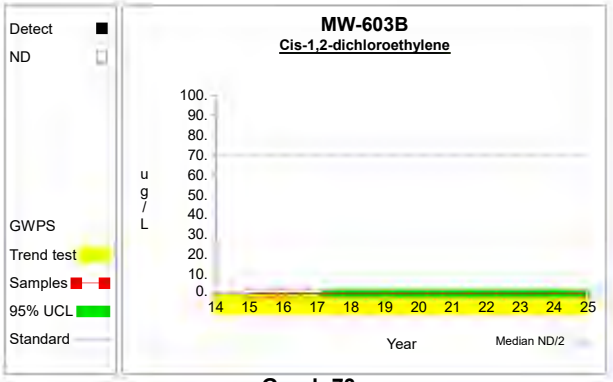


Graph 71

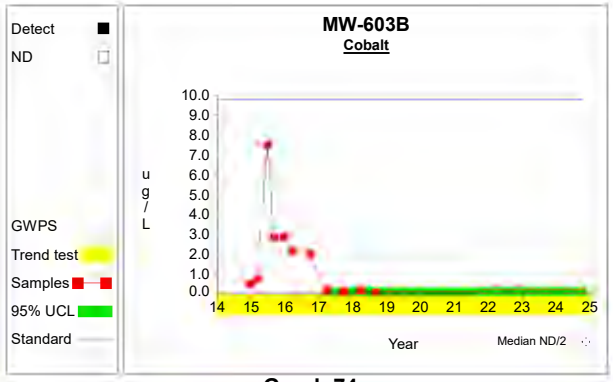


Graph 72

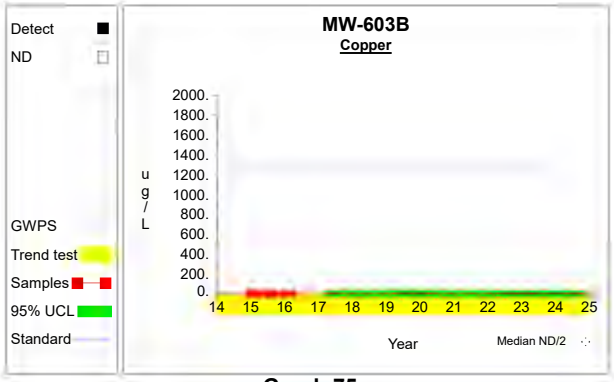
Confidence Limits (Assessment)



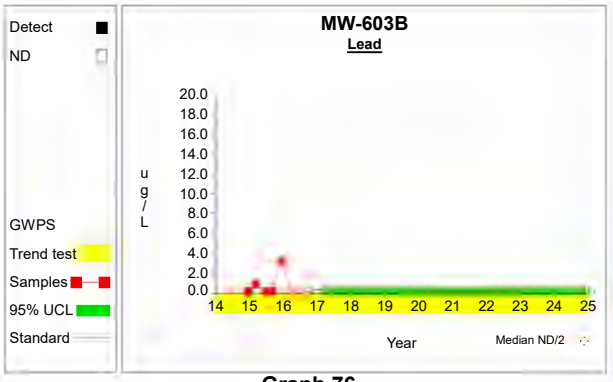
Graph 73



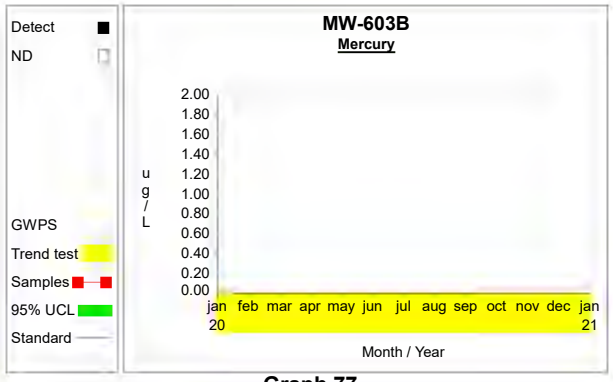
Graph 74



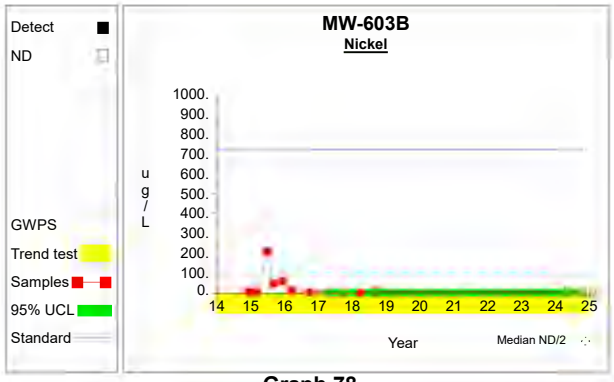
Graph 75



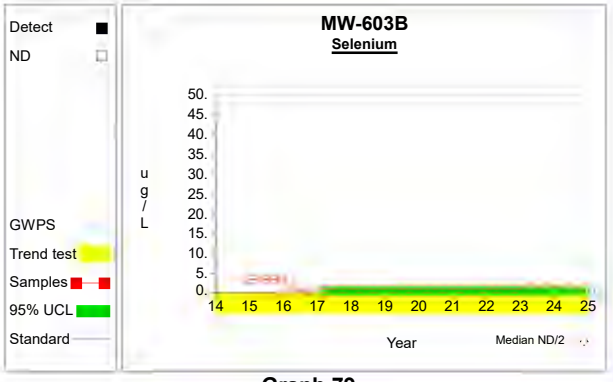
Graph 76



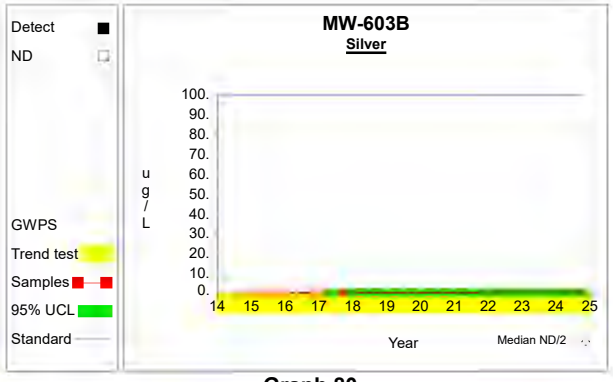
Graph 77



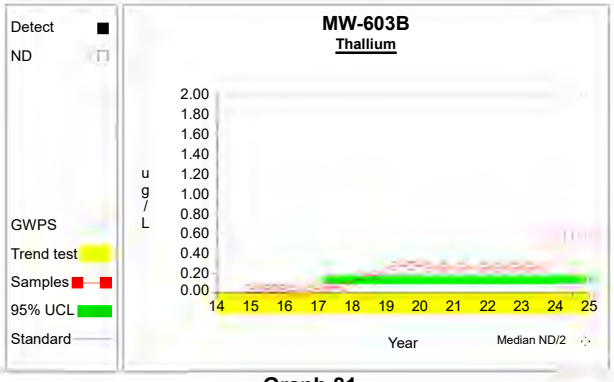
Graph 78



Graph 79

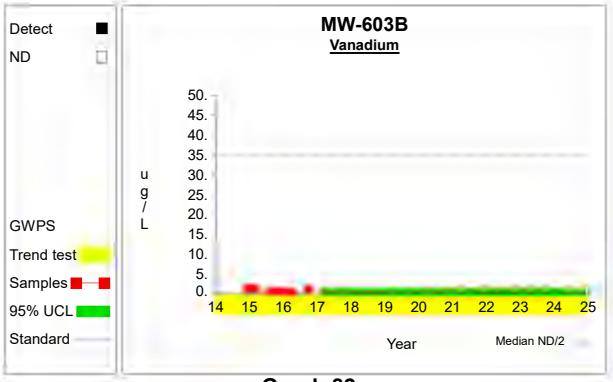


Graph 80

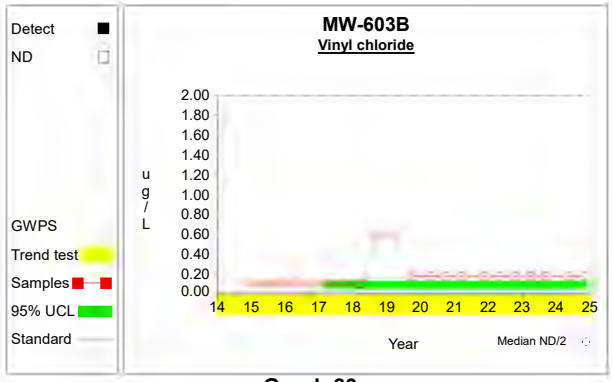


Graph 81

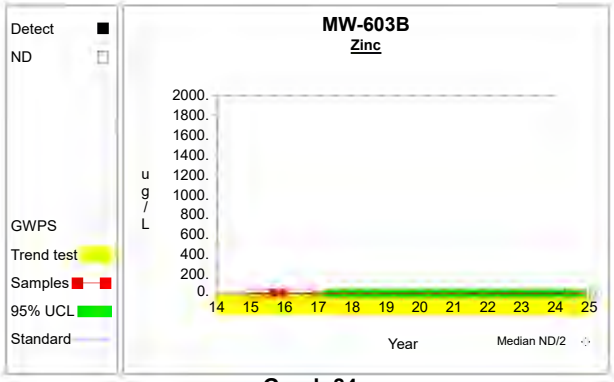
Confidence Limits (Assessment)



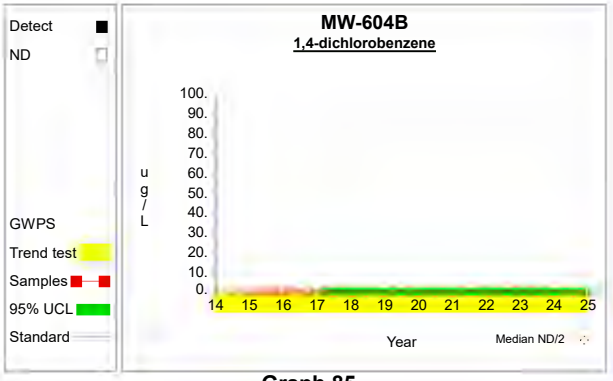
Graph 82



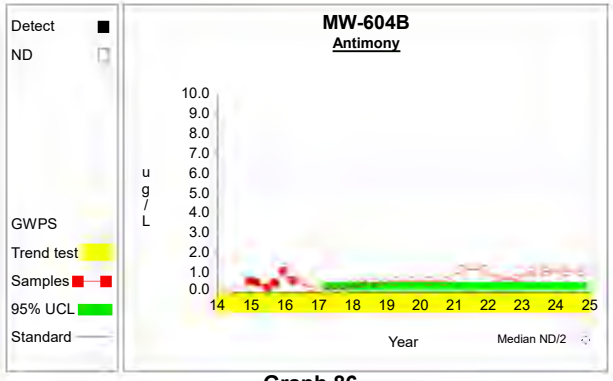
Graph 83



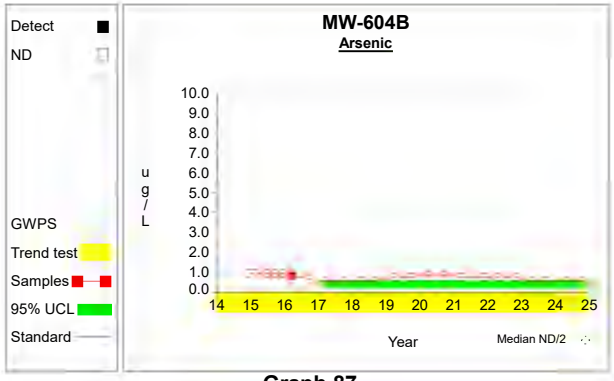
Graph 84



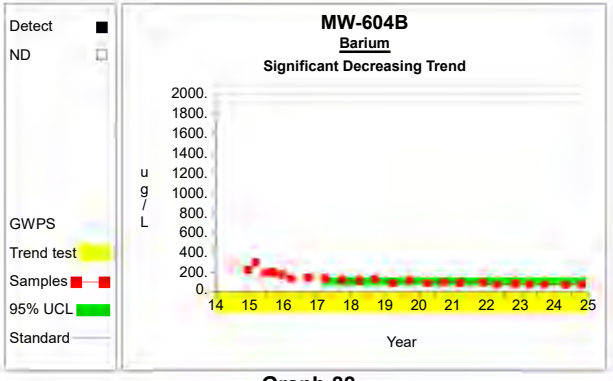
Graph 85



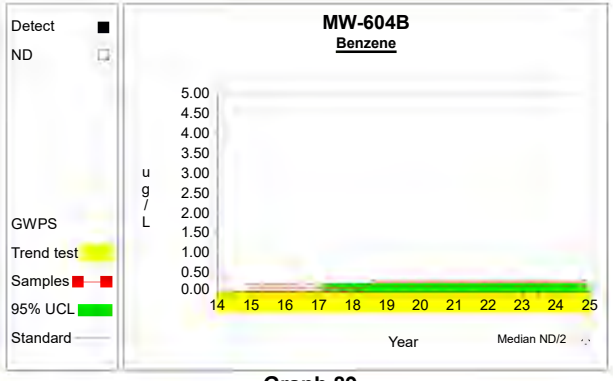
Graph 86



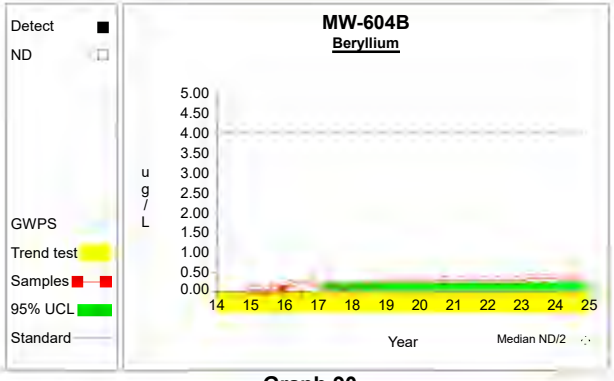
Graph 87



Graph 88

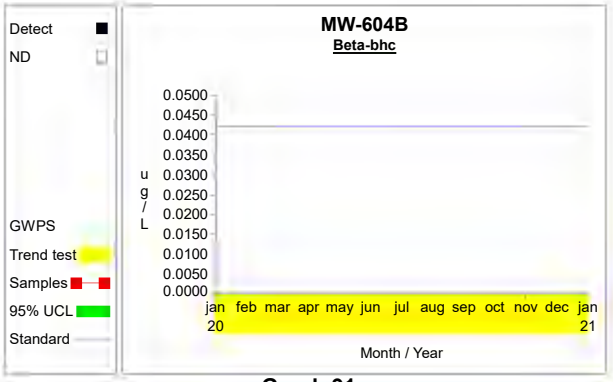


Graph 89

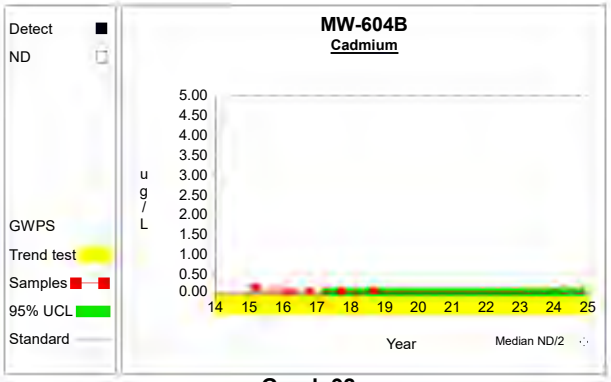


Graph 90

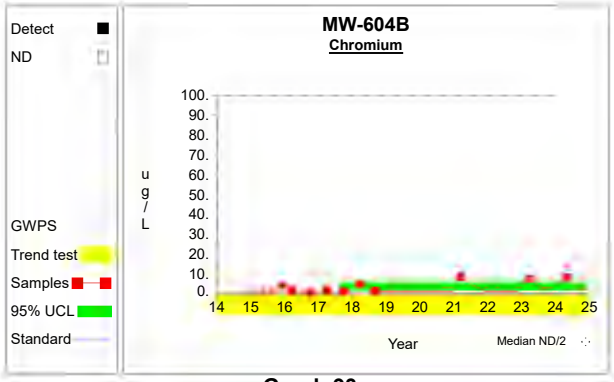
Confidence Limits (Assessment)



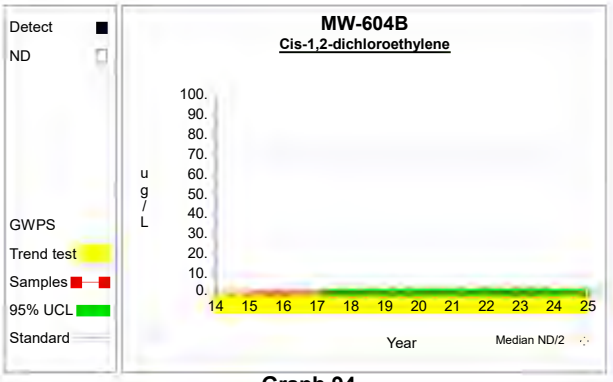
Graph 91



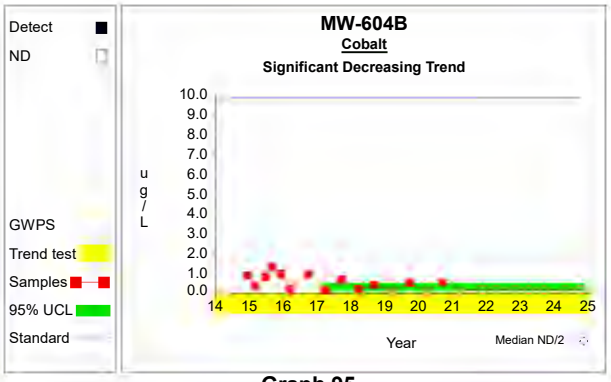
Graph 92



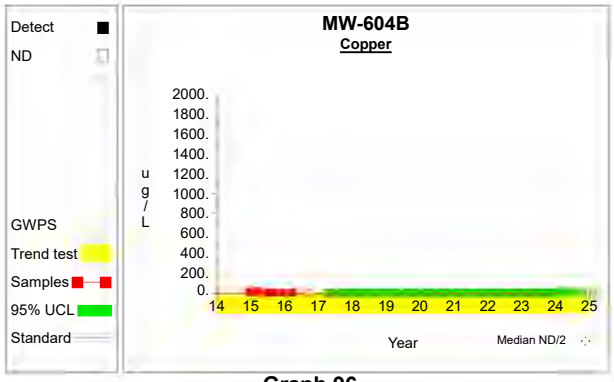
Graph 93



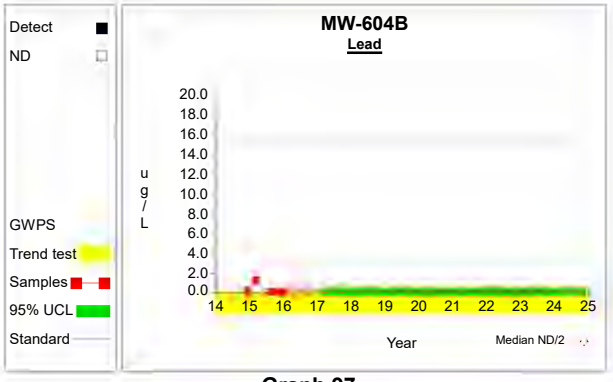
Graph 94



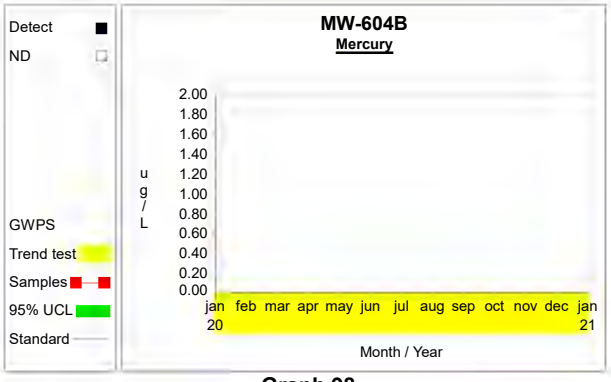
Graph 95



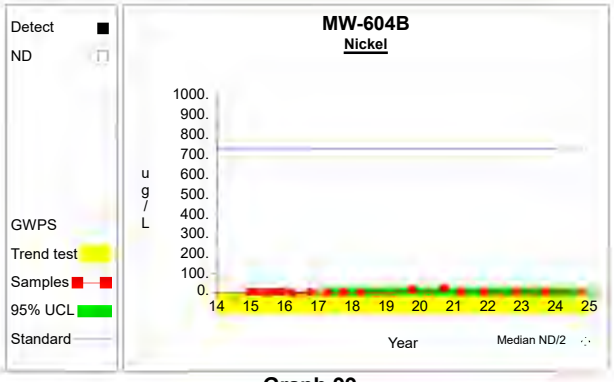
Graph 96



Graph 97

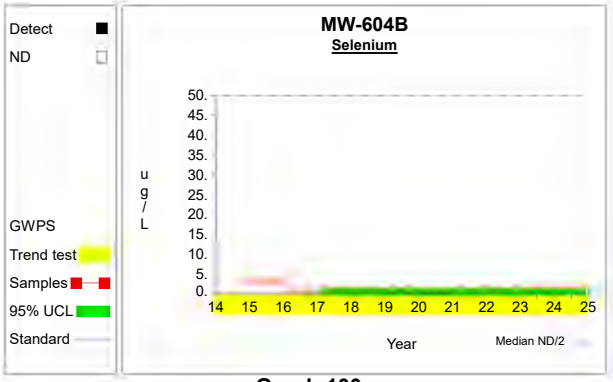


Graph 98

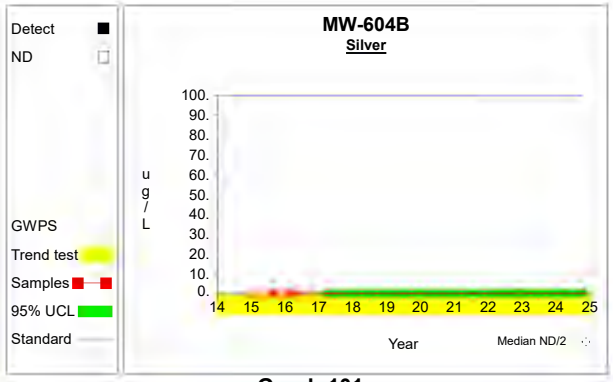


Graph 99

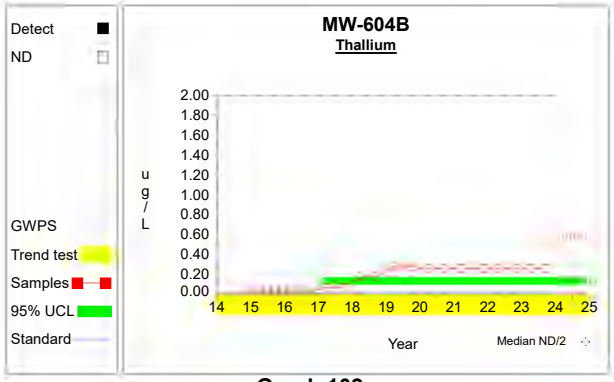
Confidence Limits (Assessment)



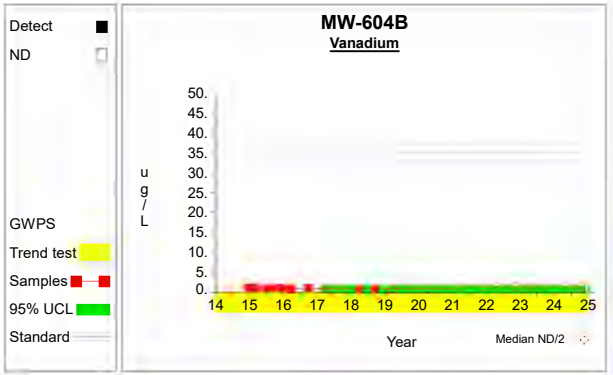
Graph 100



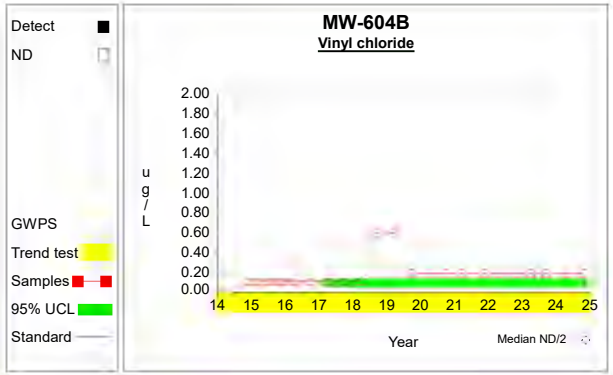
Graph 101



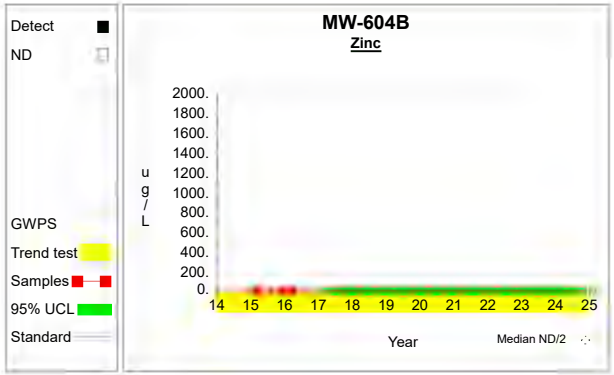
Graph 102



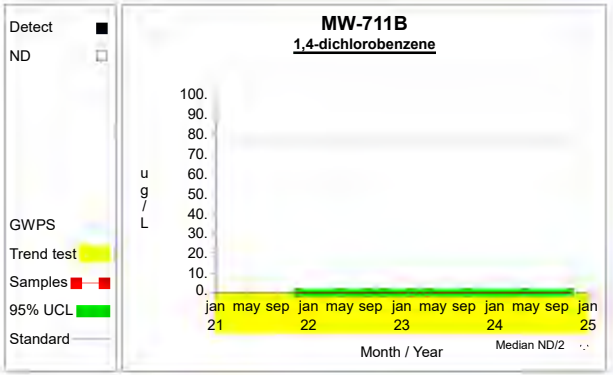
Graph 103



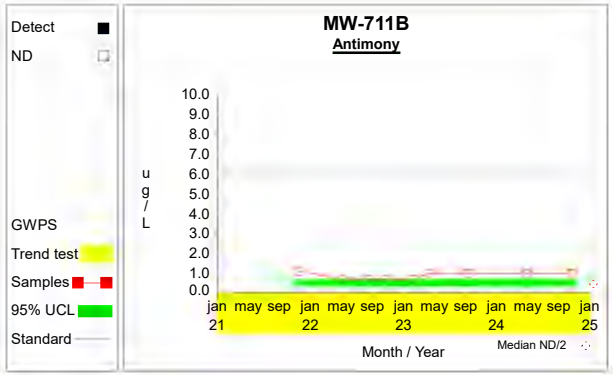
Graph 104



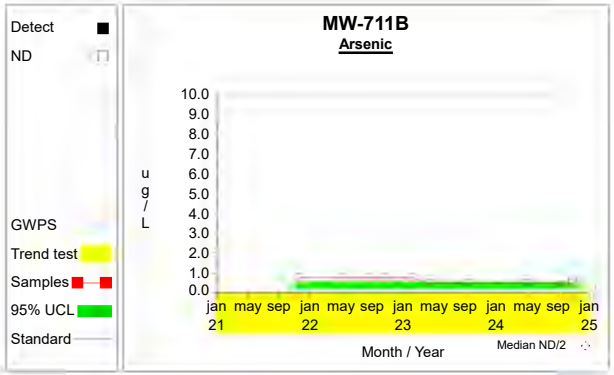
Graph 105



Graph 106

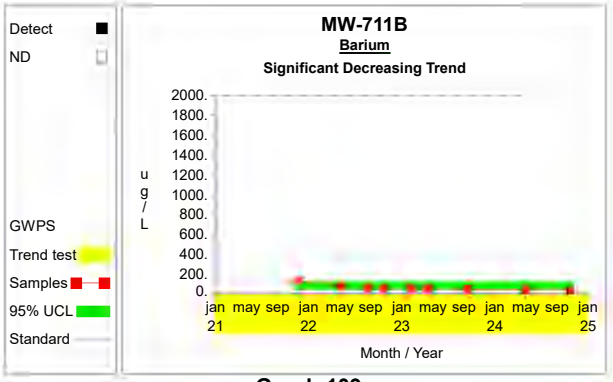


Graph 107

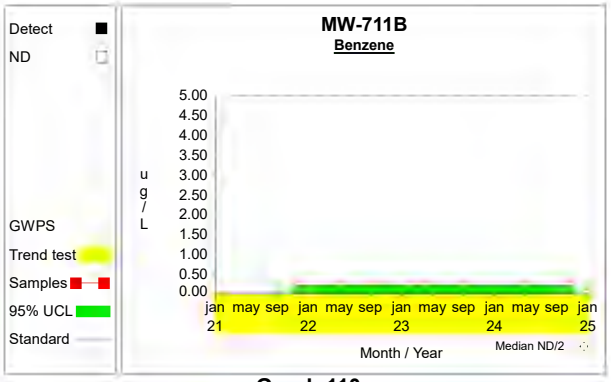


Graph 108

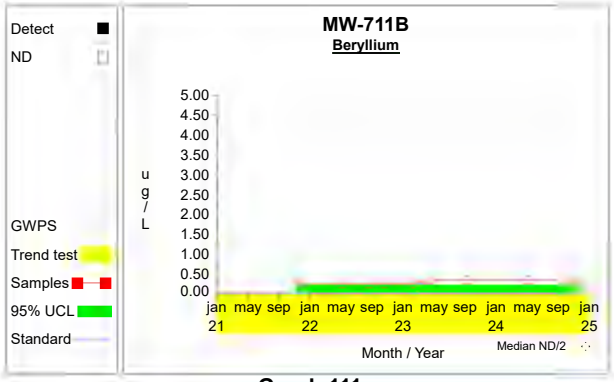
Confidence Limits (Assessment)



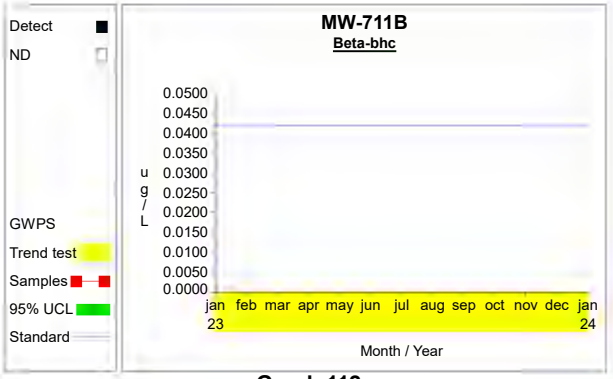
Graph 109



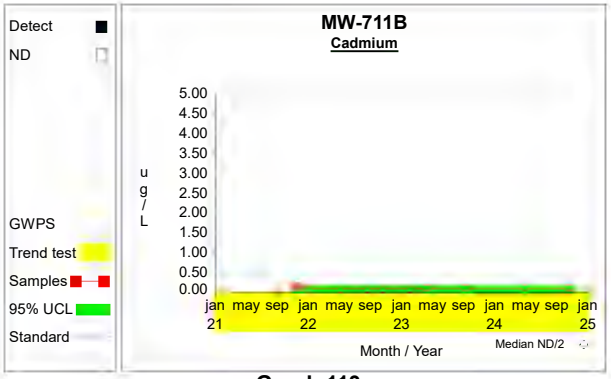
Graph 110



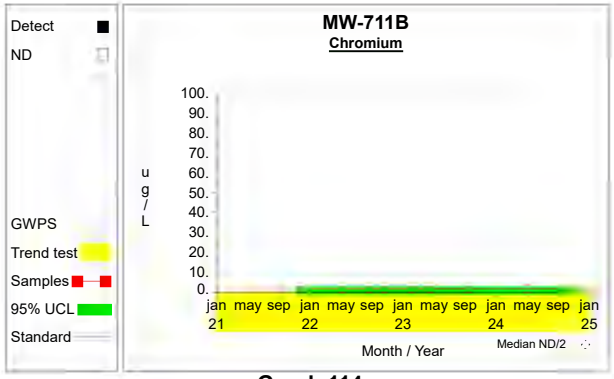
Graph 111



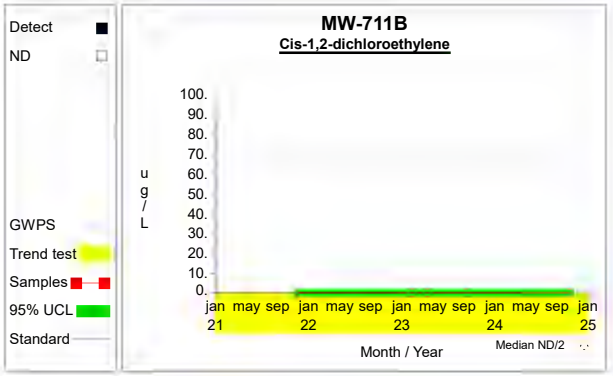
Graph 112



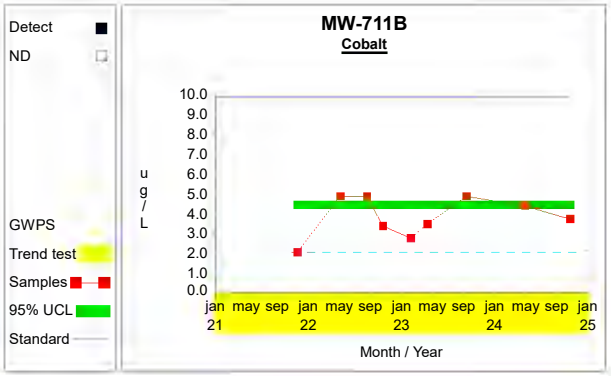
Graph 113



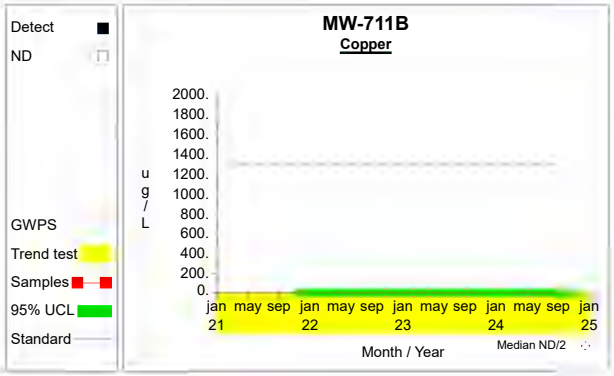
Graph 114



Graph 115

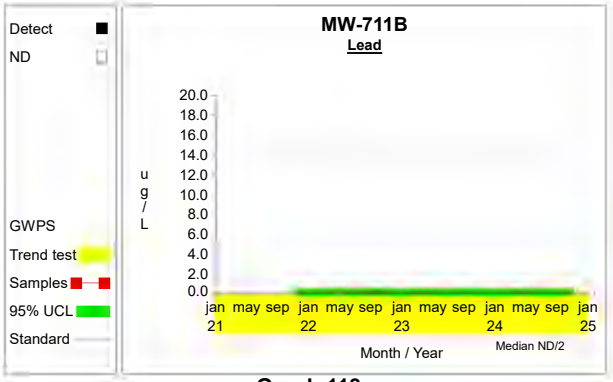


Graph 116

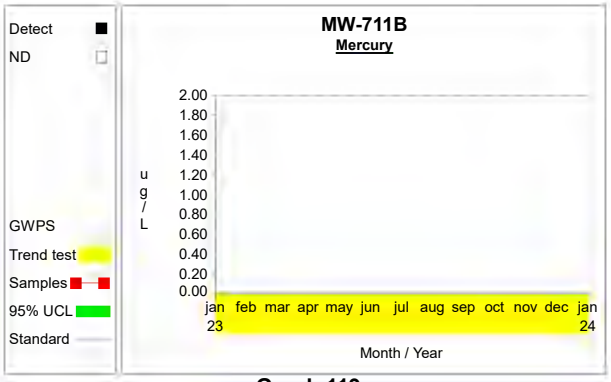


Graph 117

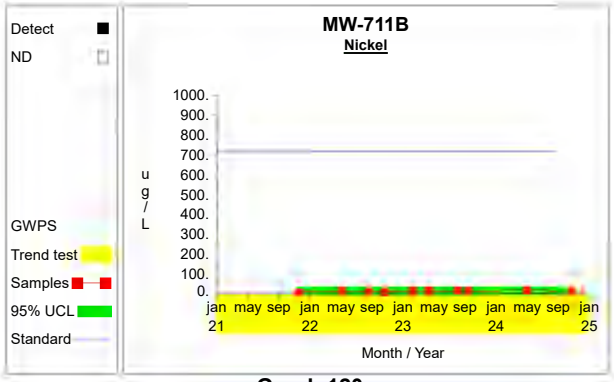
Confidence Limits (Assessment)



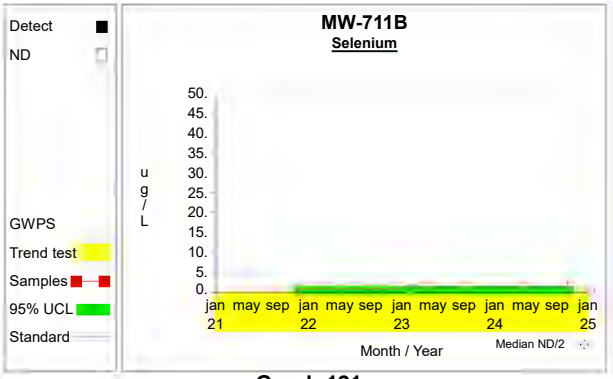
Graph 118



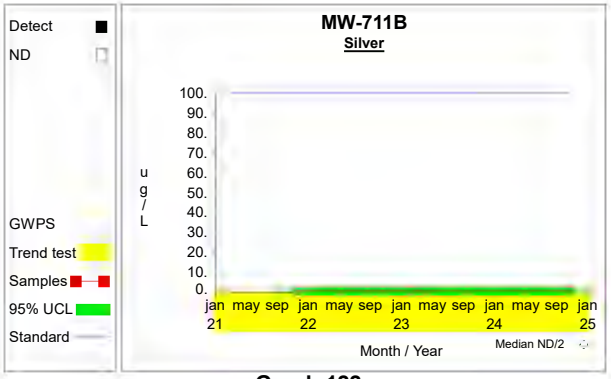
Graph 119



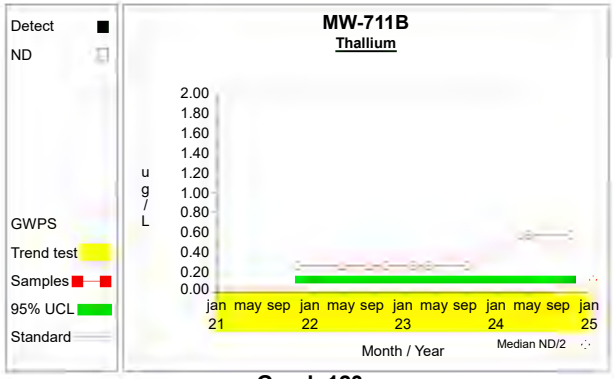
Graph 120



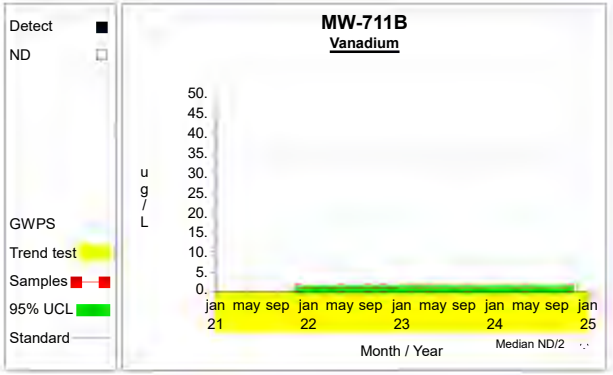
Graph 121



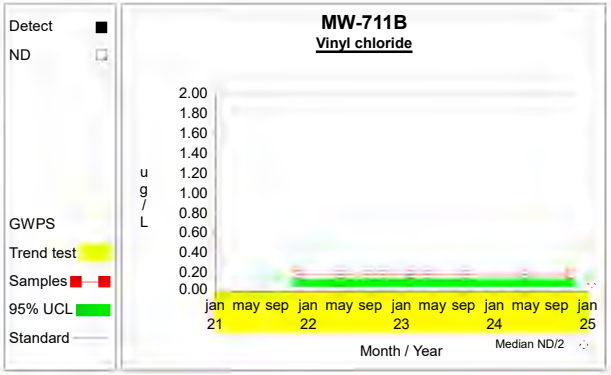
Graph 122



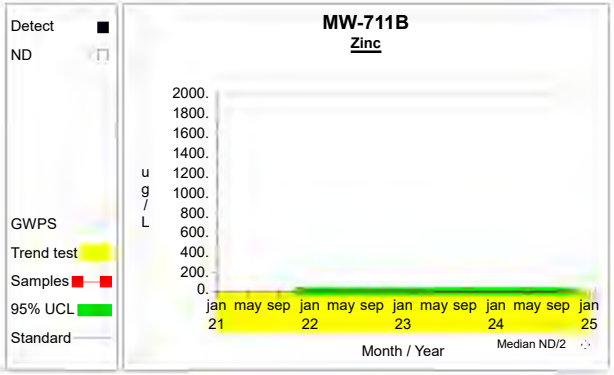
Graph 123



Graph 124

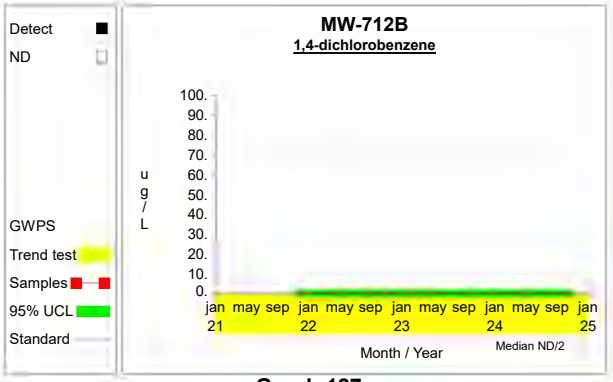


Graph 125

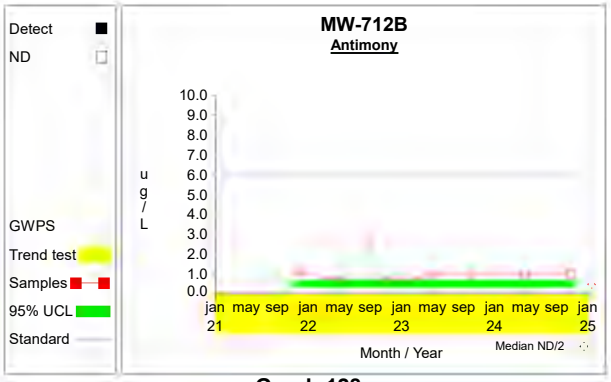


Graph 126

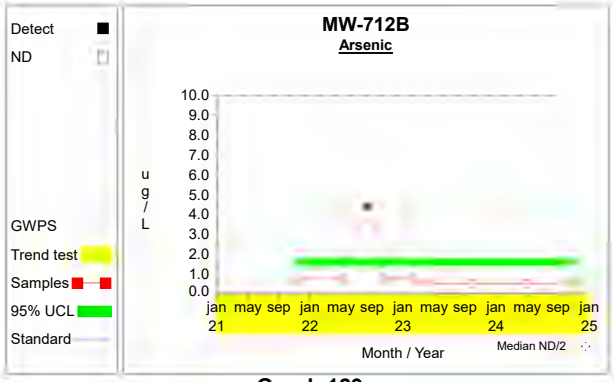
Confidence Limits (Assessment)



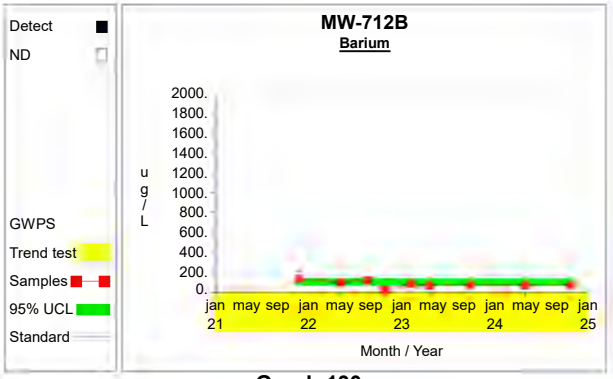
Graph 127



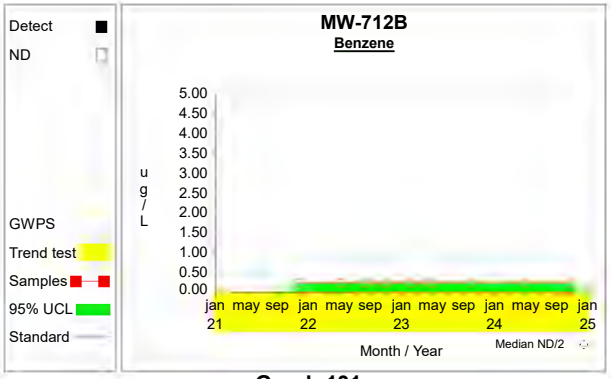
Graph 128



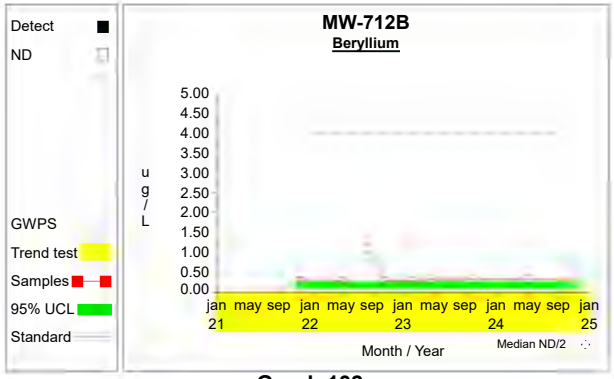
Graph 129



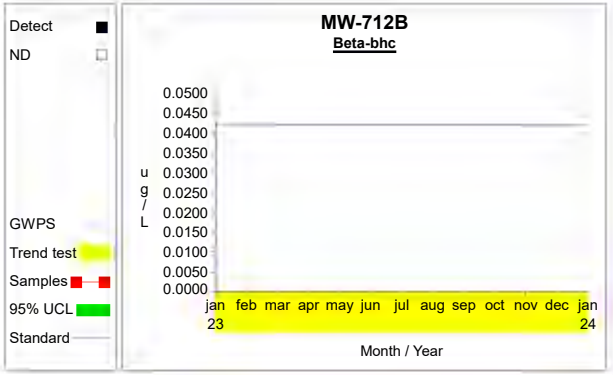
Graph 130



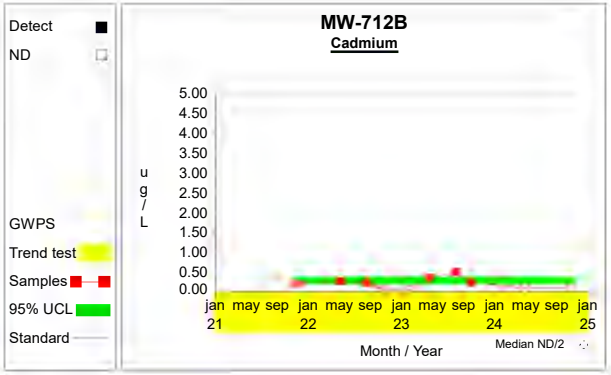
Graph 131



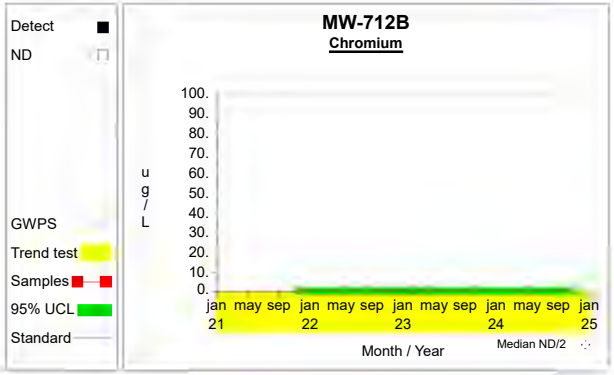
Graph 132



Graph 133

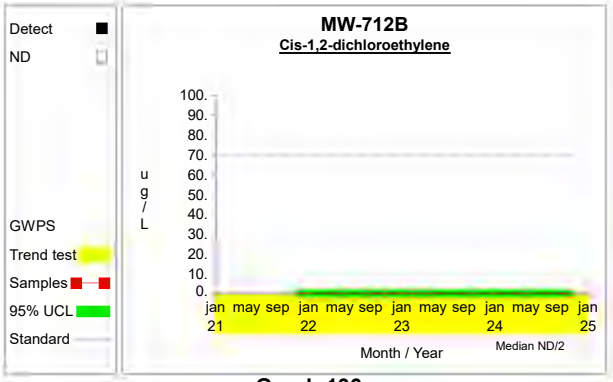


Graph 134

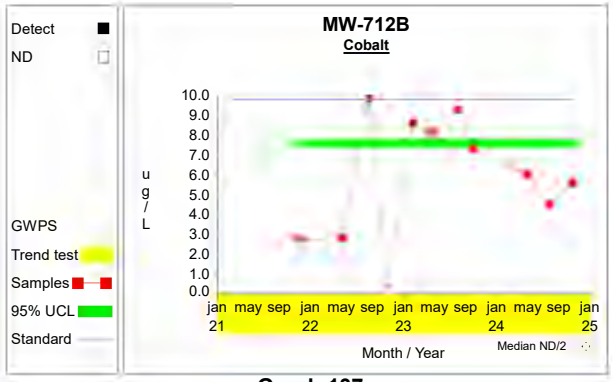


Graph 135

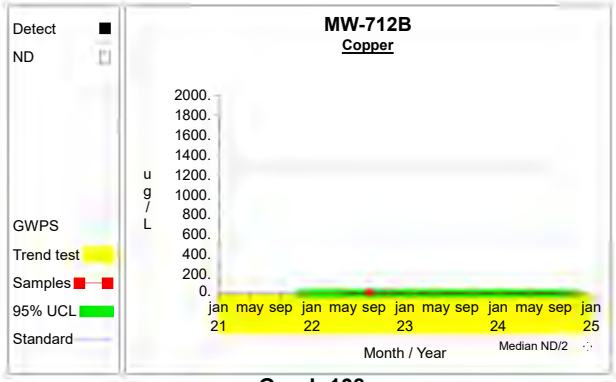
Confidence Limits (Assessment)



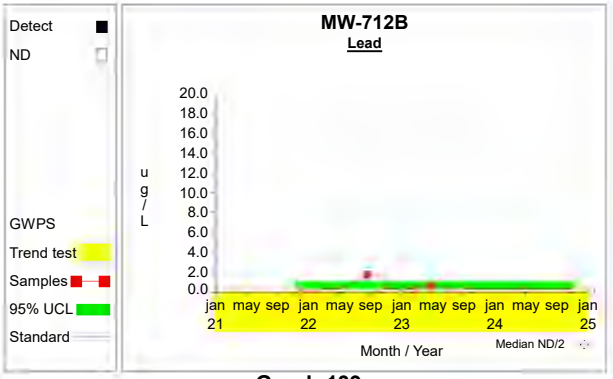
Graph 136



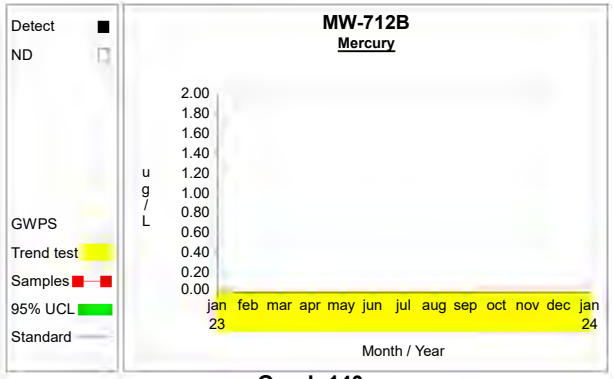
Graph 137



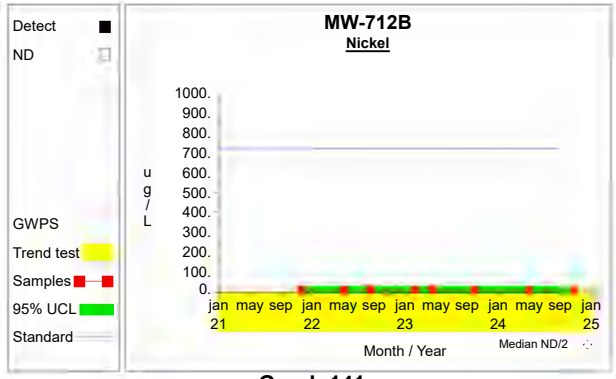
Graph 138



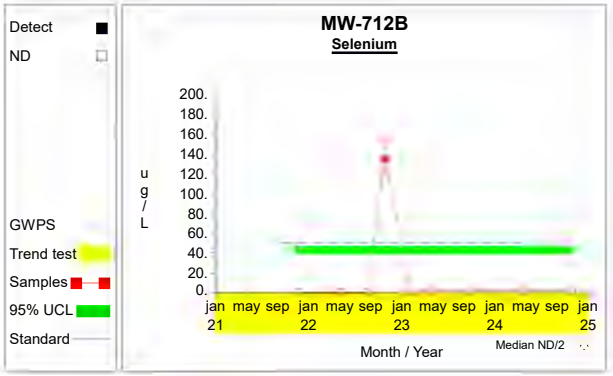
Graph 139



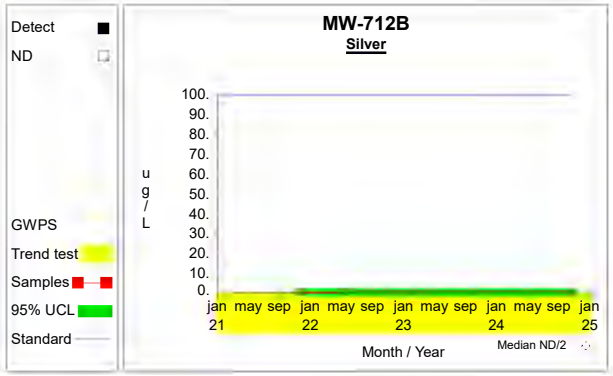
Graph 140



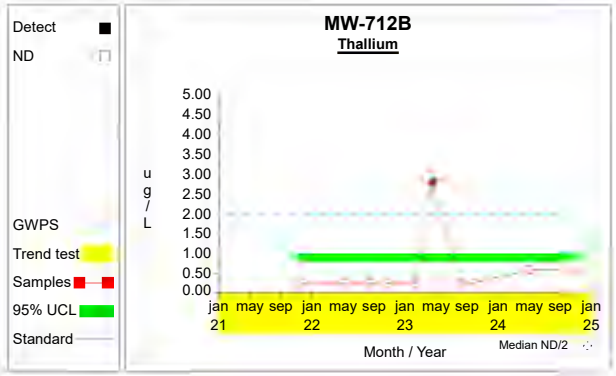
Graph 141



Graph 142

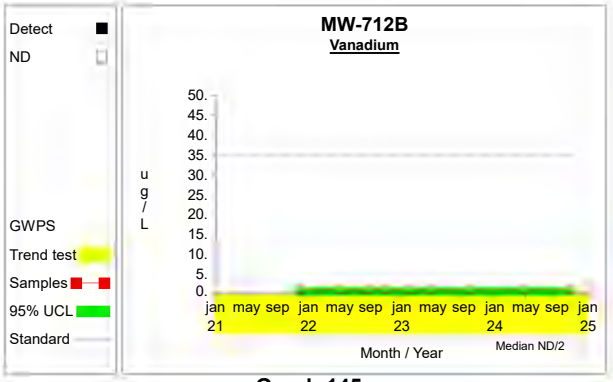


Graph 143

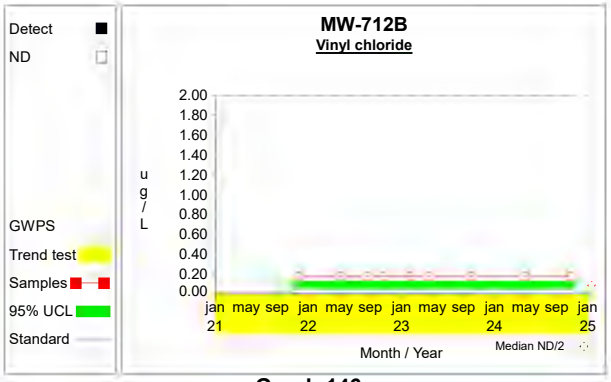


Graph 144

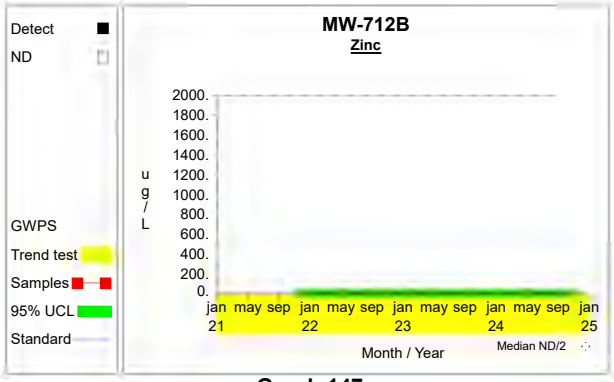
Confidence Limits (Assessment)



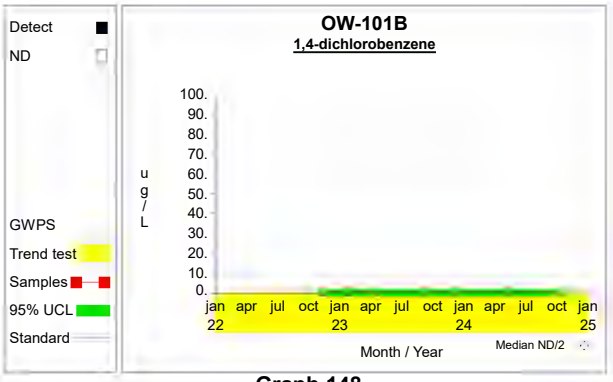
Graph 145



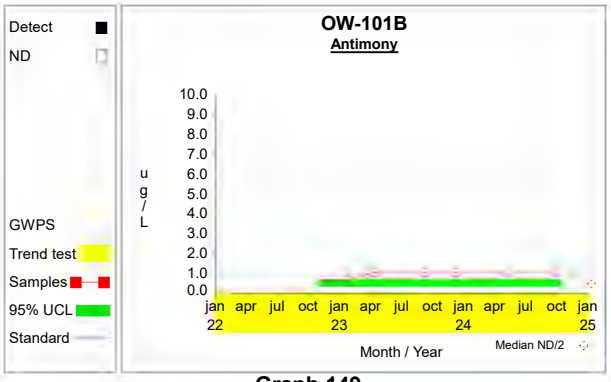
Graph 146



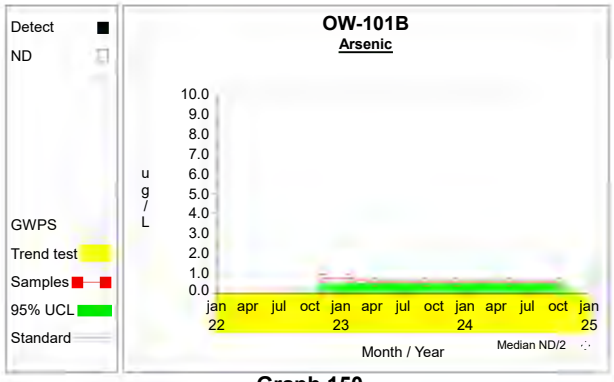
Graph 147



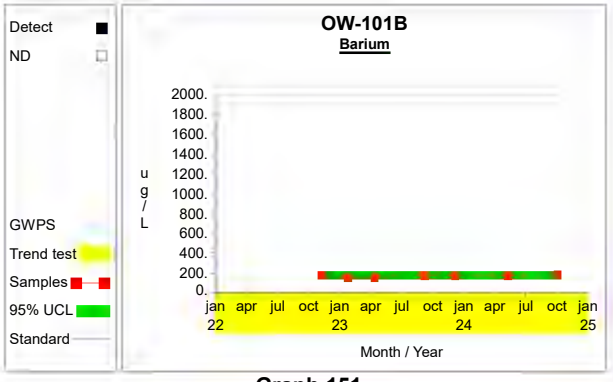
Graph 148



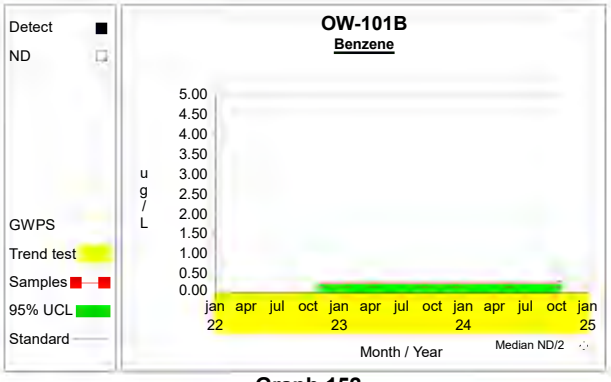
Graph 149



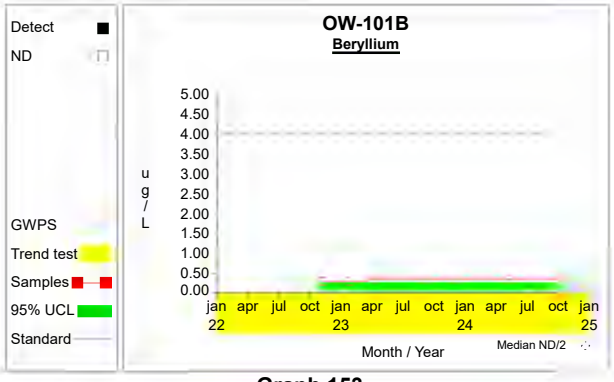
Graph 150



Graph 151

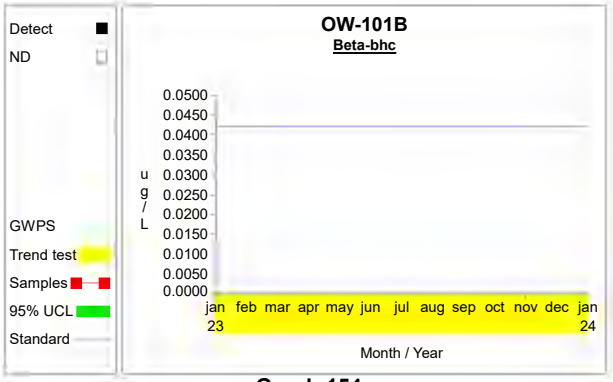


Graph 152

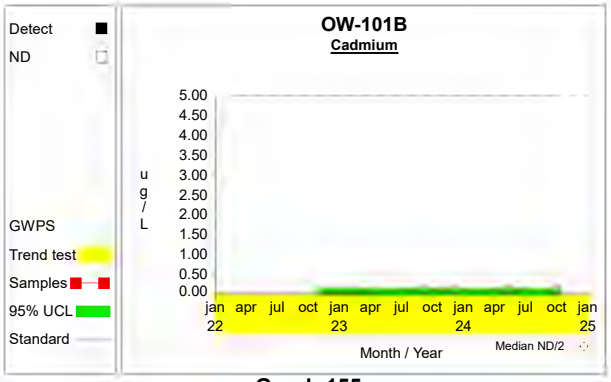


Graph 153

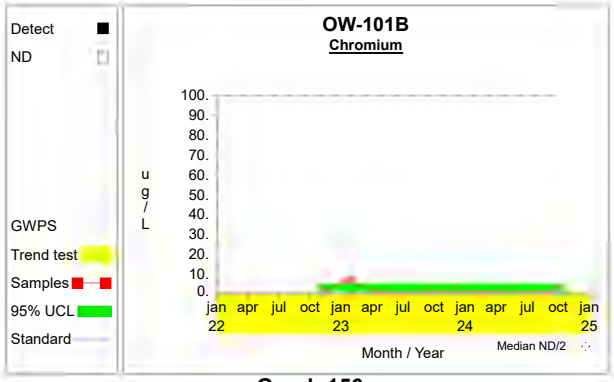
Confidence Limits (Assessment)



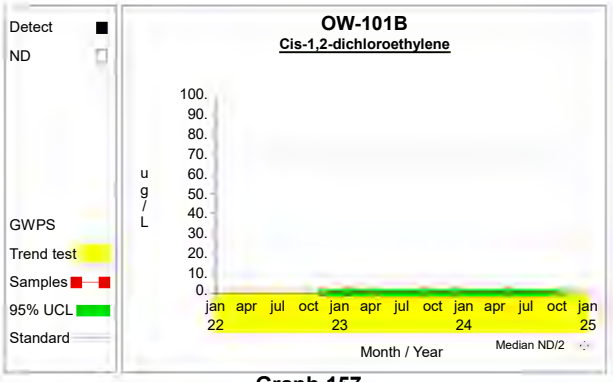
Graph 154



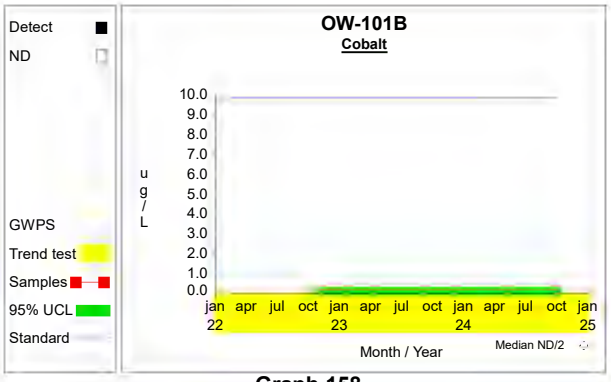
Graph 155



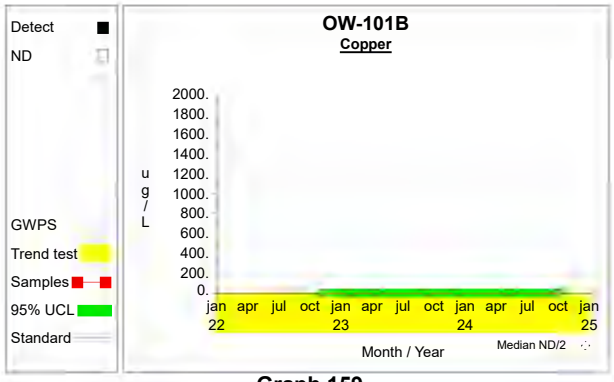
Graph 156



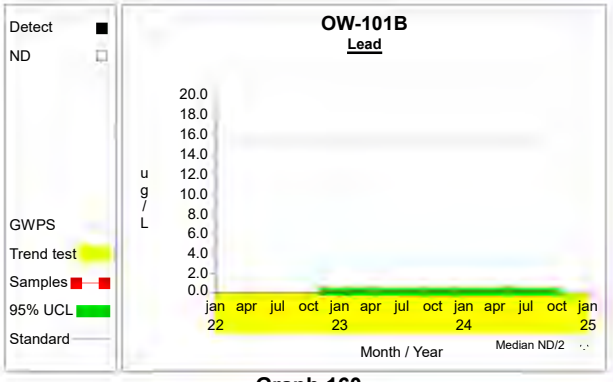
Graph 157



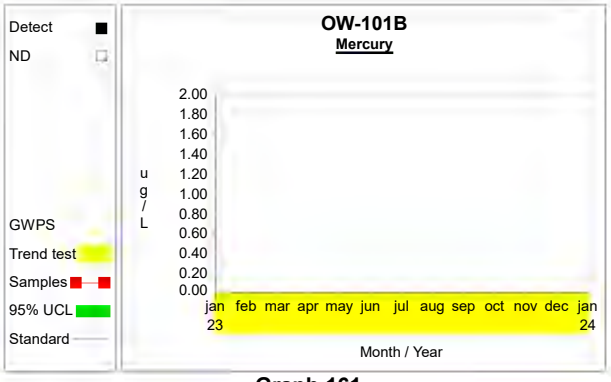
Graph 158



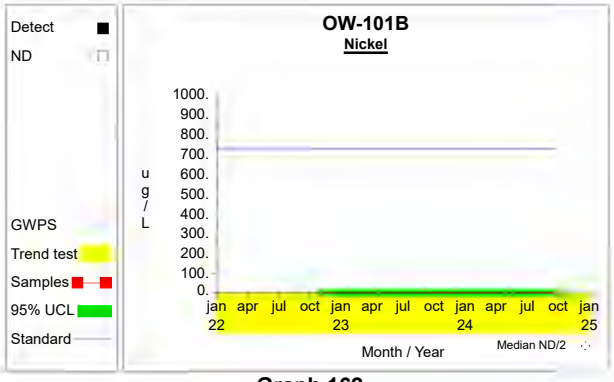
Graph 159



Graph 160

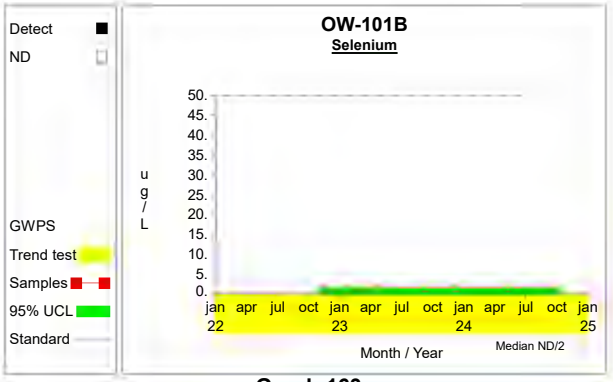


Graph 161

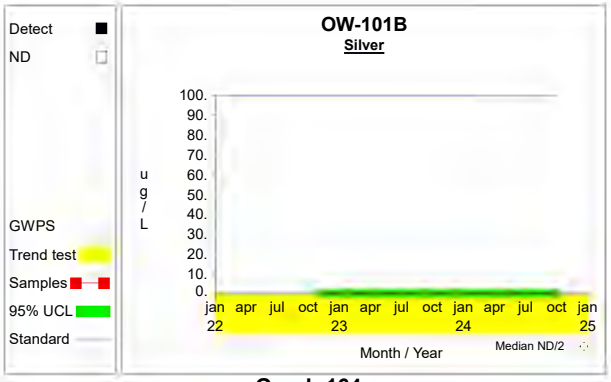


Graph 162

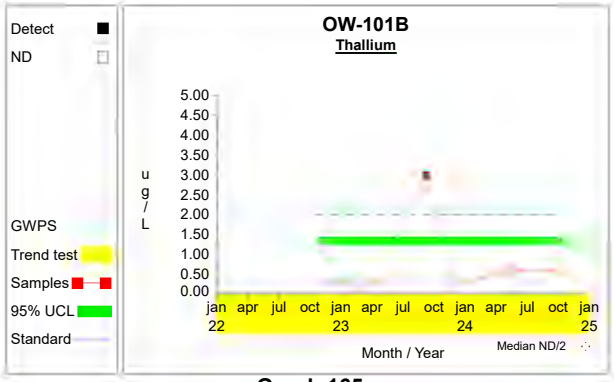
Confidence Limits (Assessment)



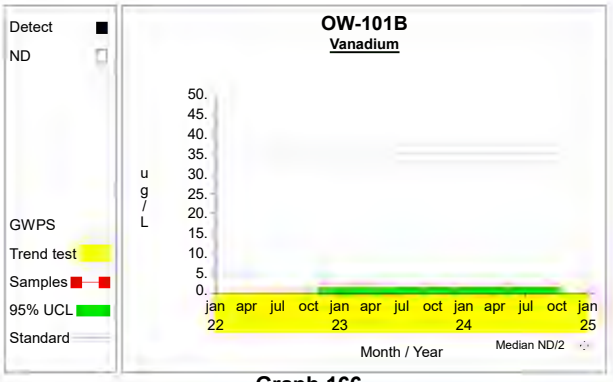
Graph 163



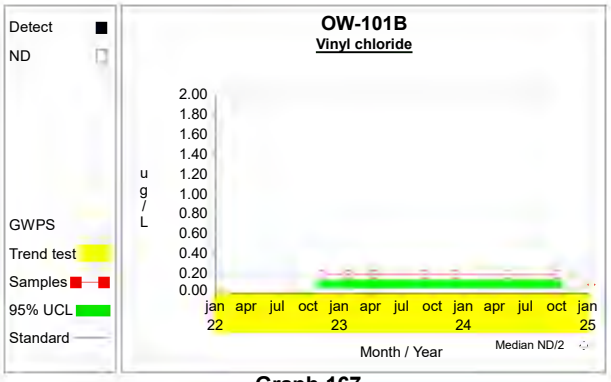
Graph 164



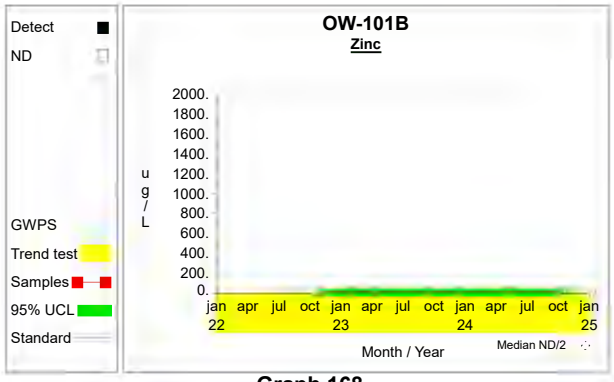
Graph 165



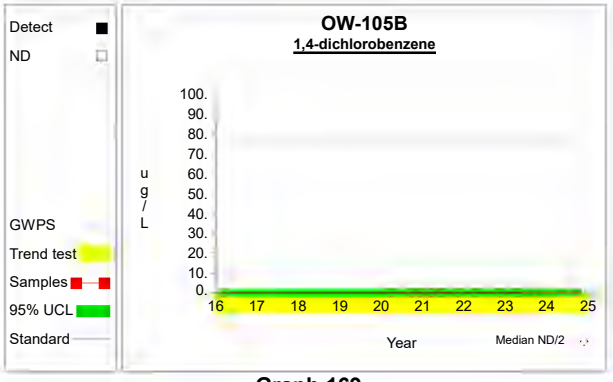
Graph 166



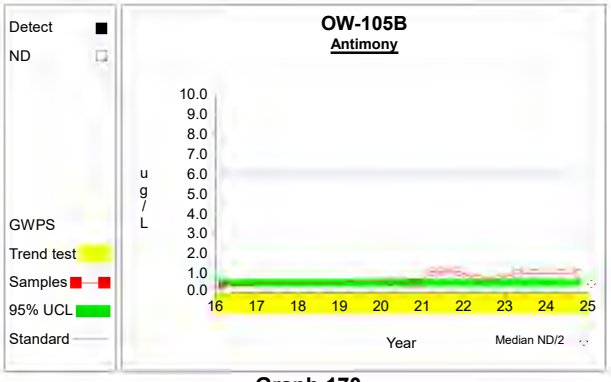
Graph 167



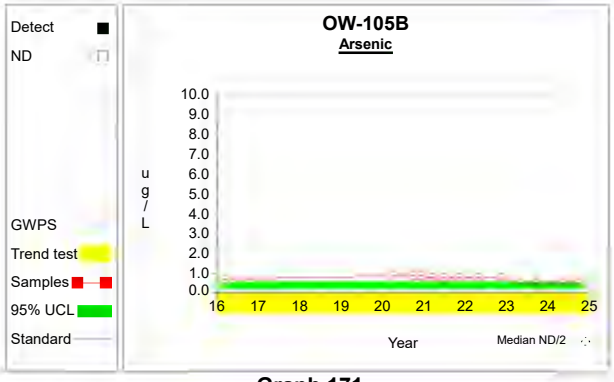
Graph 168



Graph 169

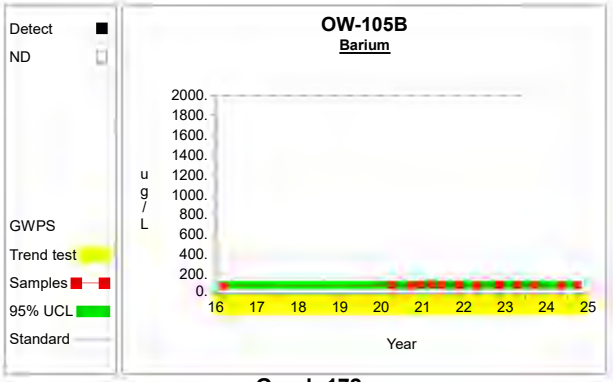


Graph 170

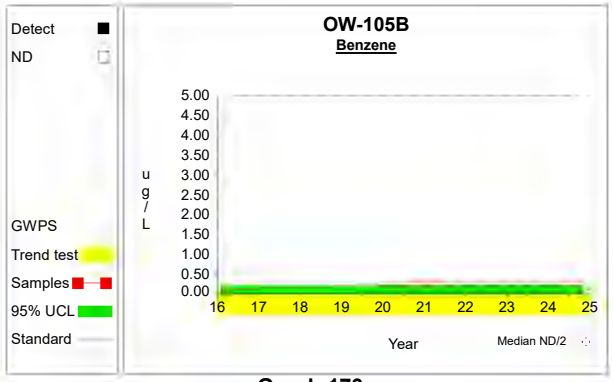


Graph 171

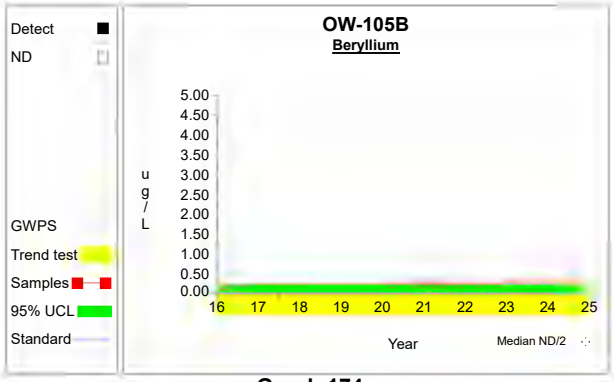
Confidence Limits (Assessment)



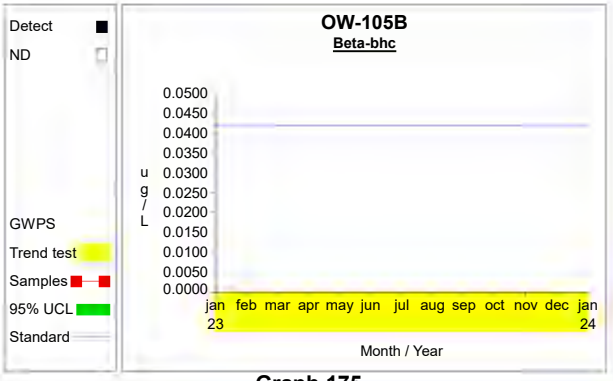
Graph 172



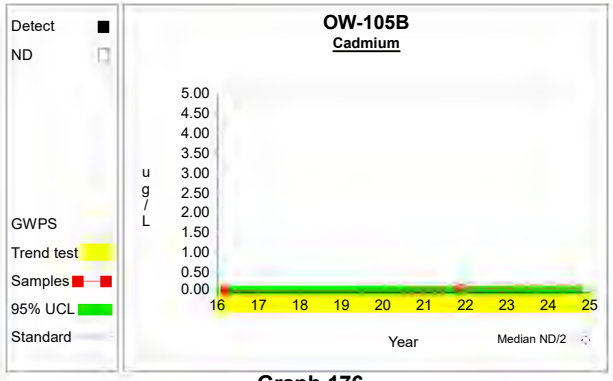
Graph 173



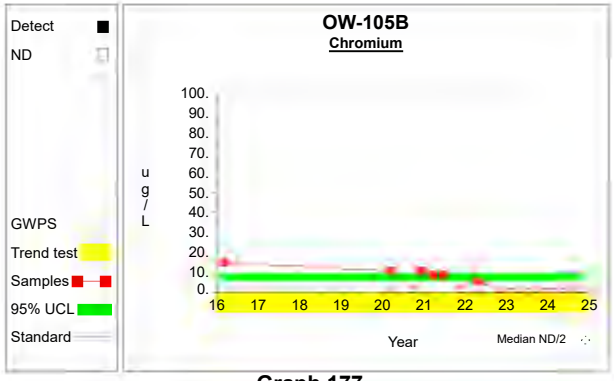
Graph 174



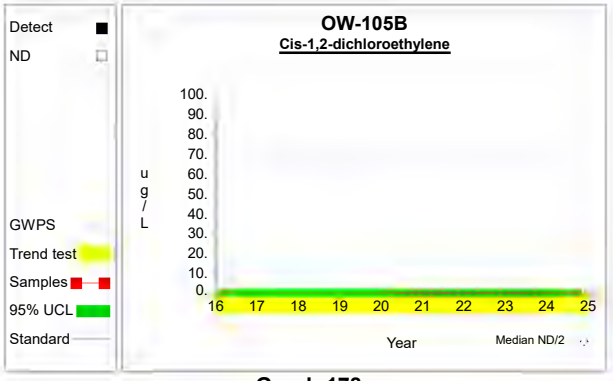
Graph 175



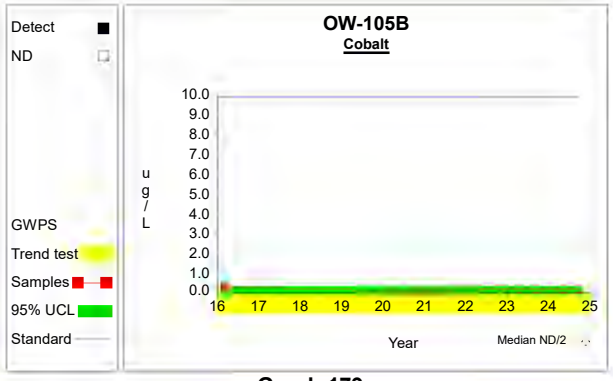
Graph 176



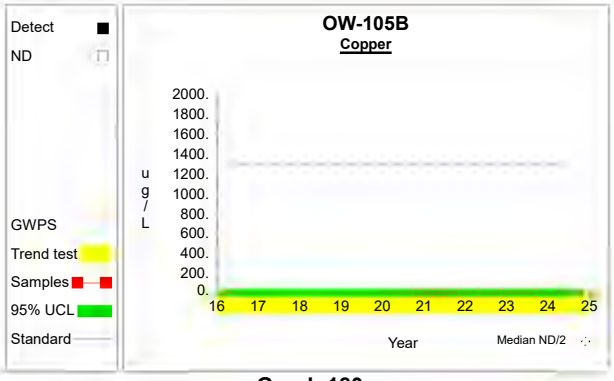
Graph 177



Graph 178

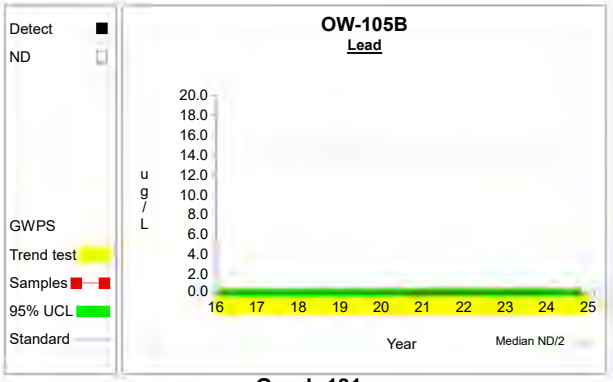


Graph 179

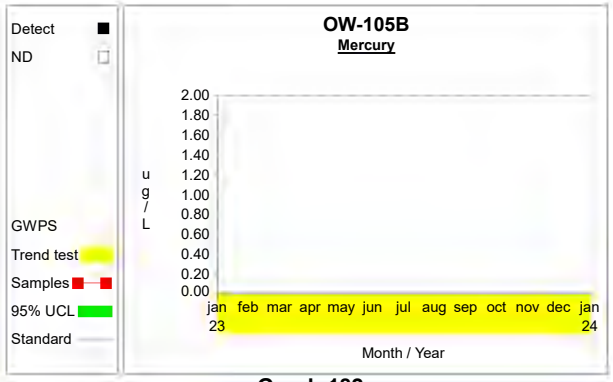


Graph 180

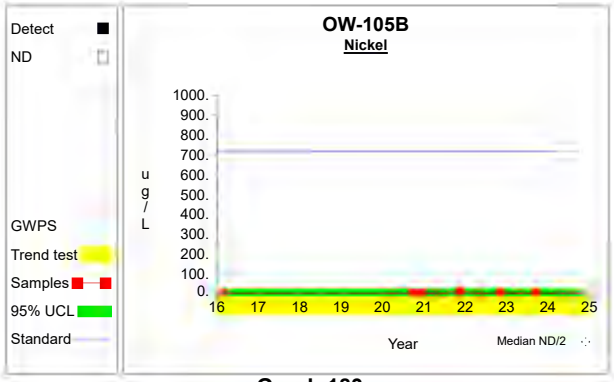
Confidence Limits (Assessment)



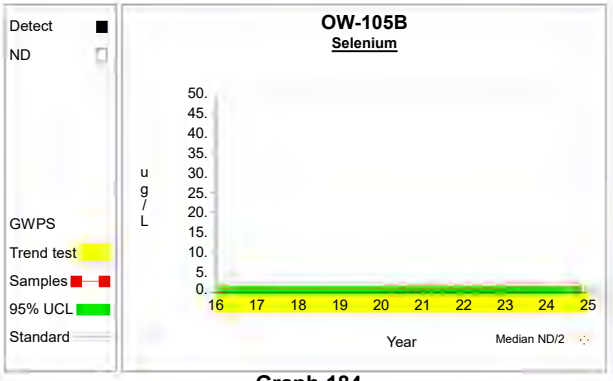
Graph 181



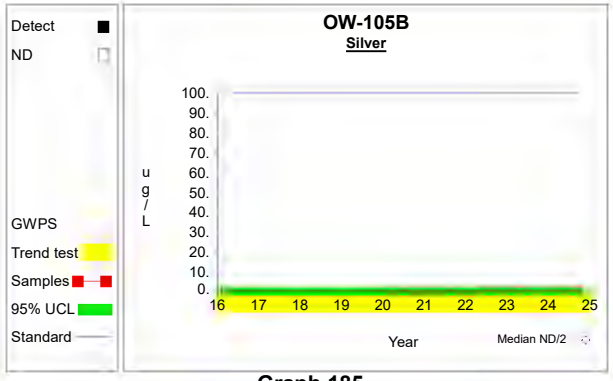
Graph 182



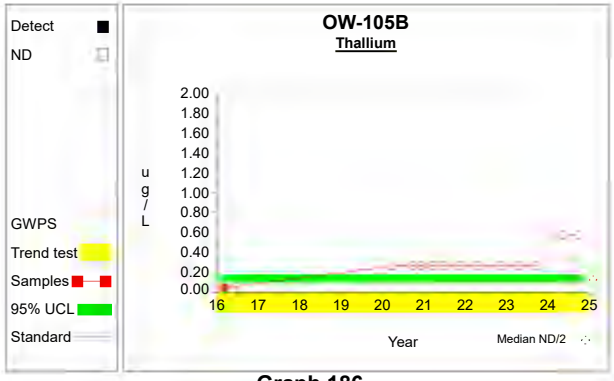
Graph 183



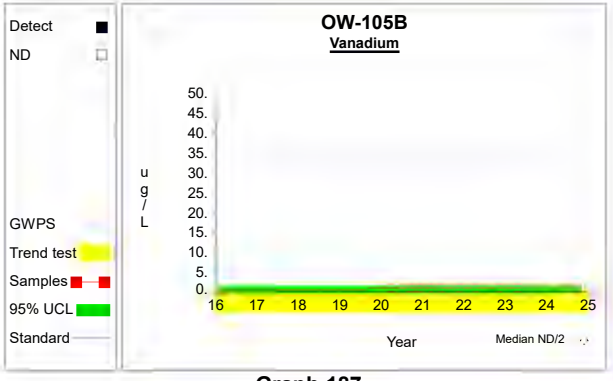
Graph 184



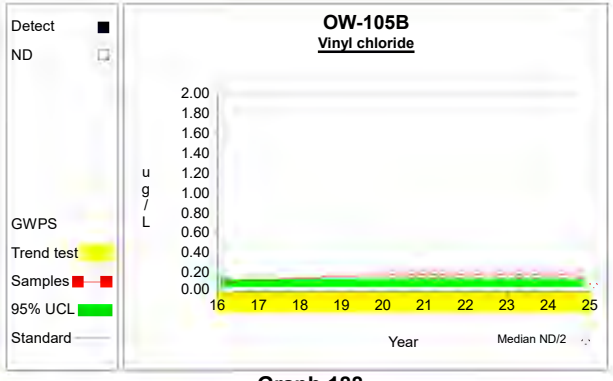
Graph 185



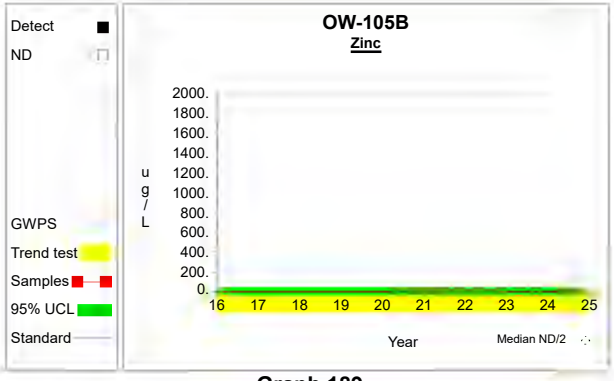
Graph 186



Graph 187

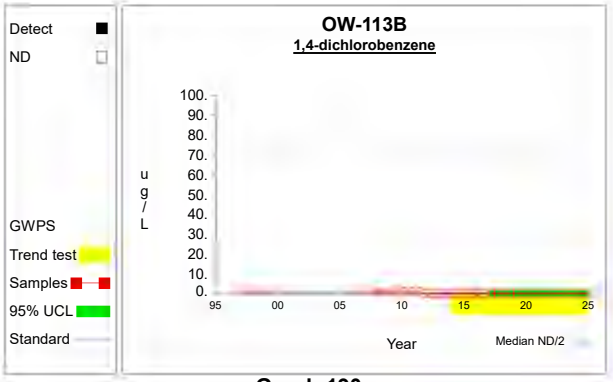


Graph 188

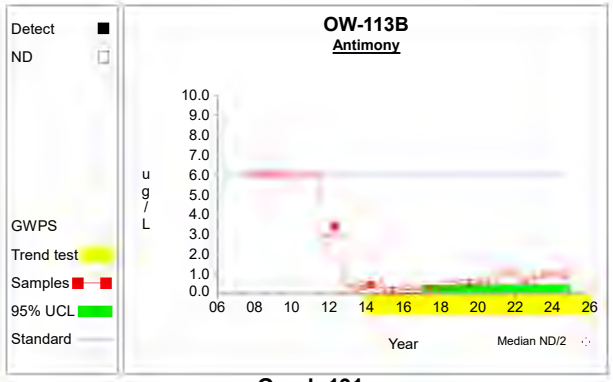


Graph 189

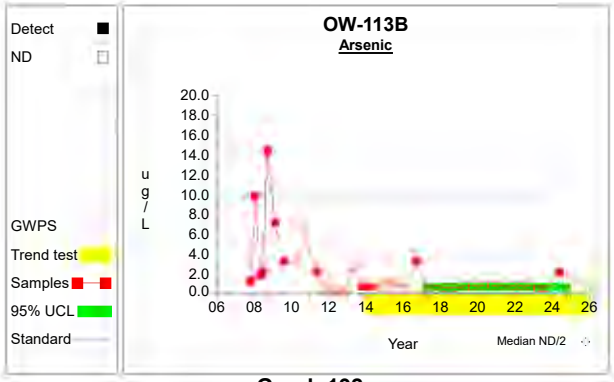
Confidence Limits (Assessment)



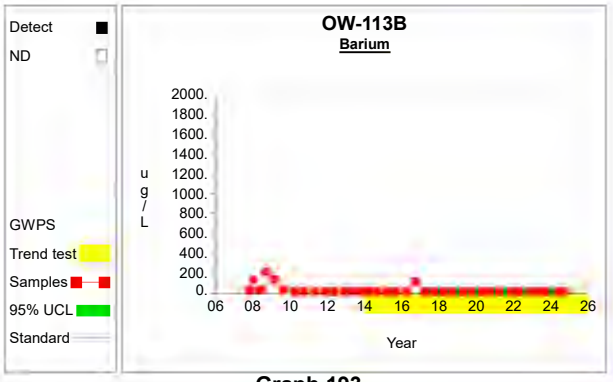
Graph 190



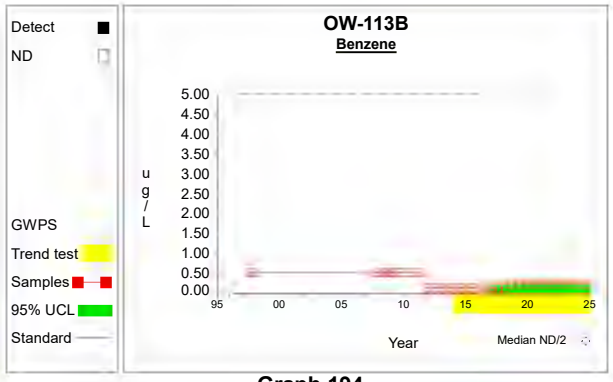
Graph 191



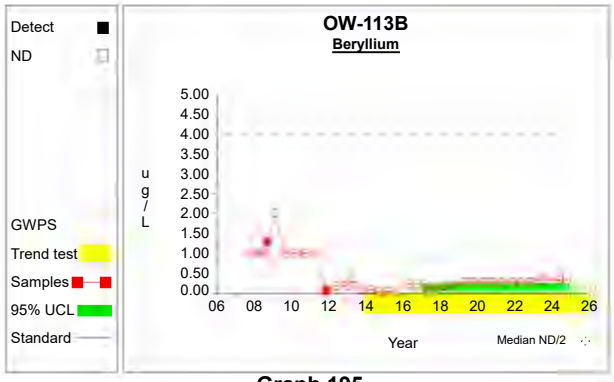
Graph 192



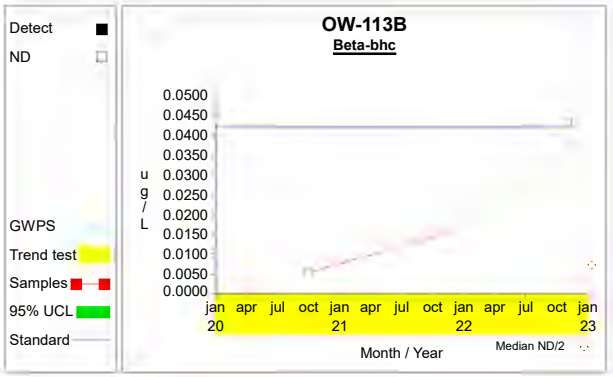
Graph 193



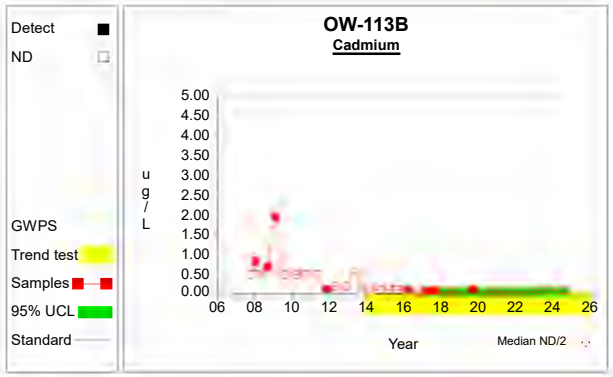
Graph 194



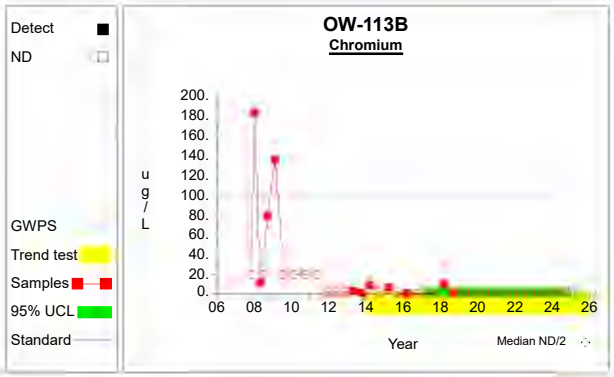
Graph 195



Graph 196

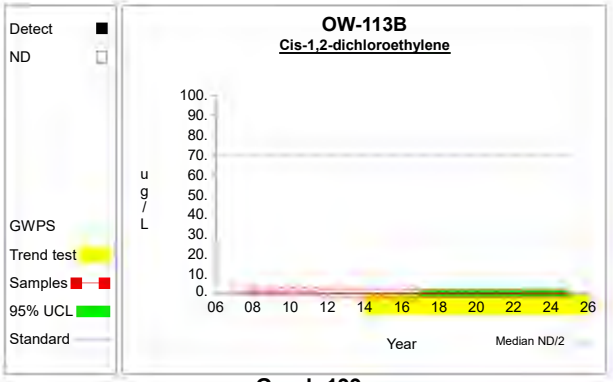


Graph 197

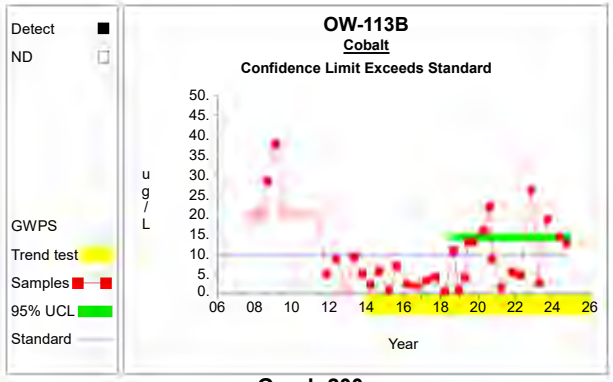


Graph 198

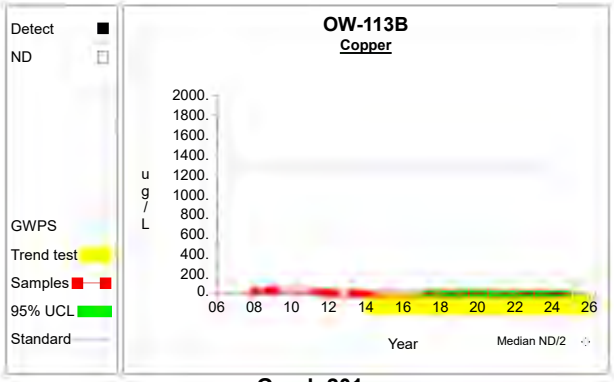
Confidence Limits (Assessment)



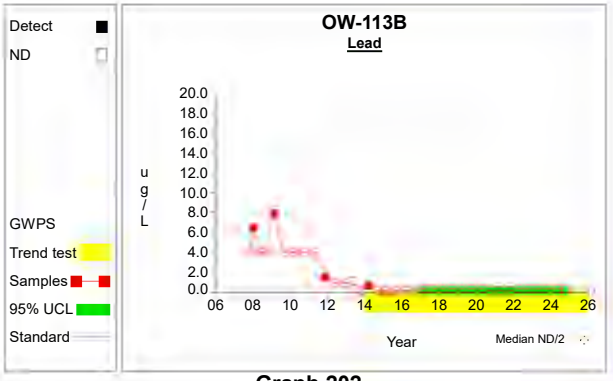
Graph 199



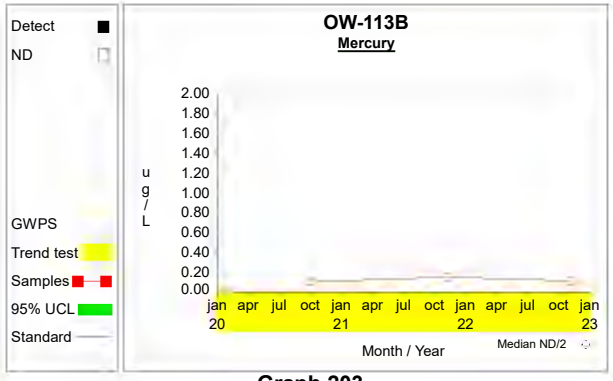
Graph 200



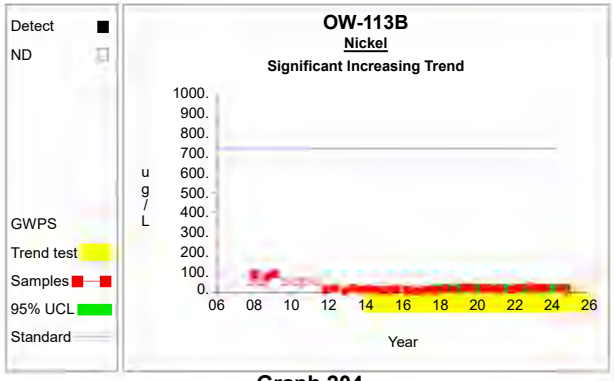
Graph 201



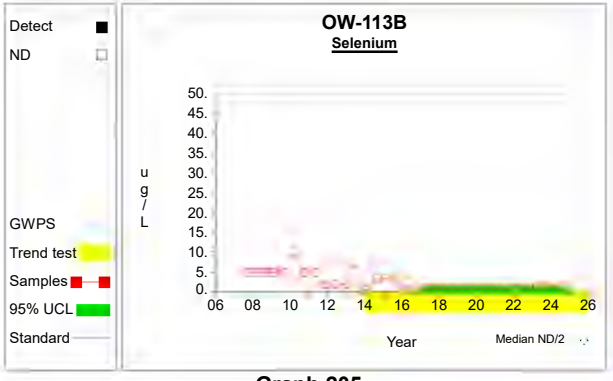
Graph 202



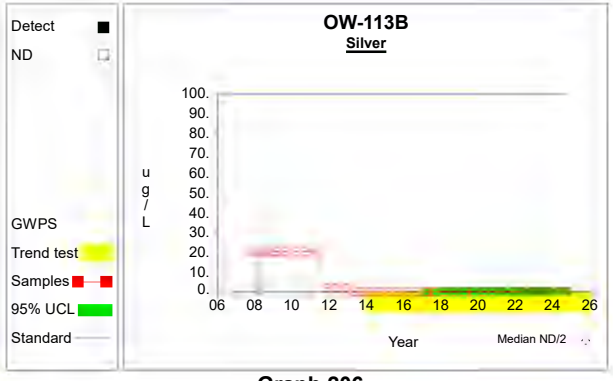
Graph 203



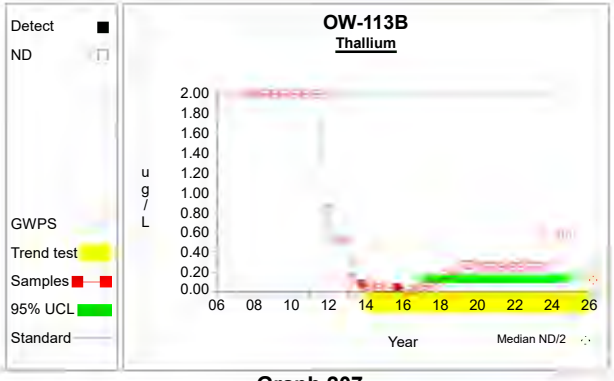
Graph 204



Graph 205

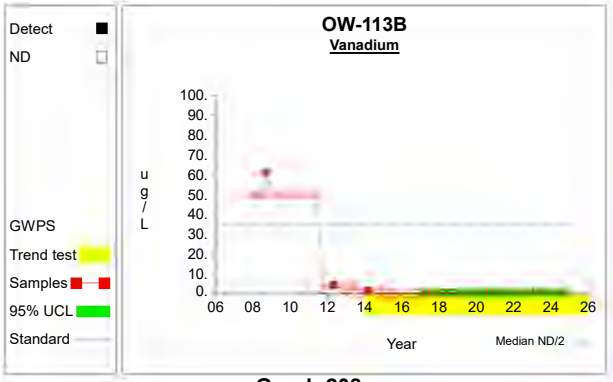


Graph 206

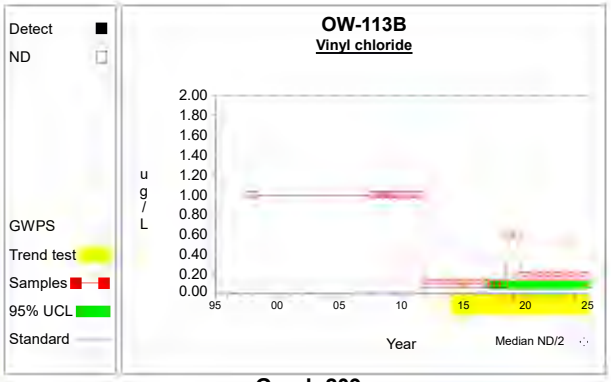


Graph 207

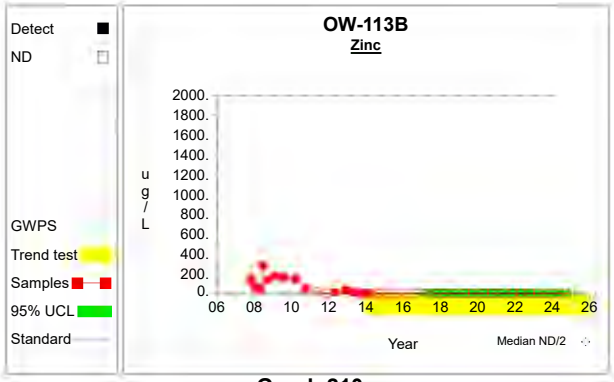
Confidence Limits (Assessment)



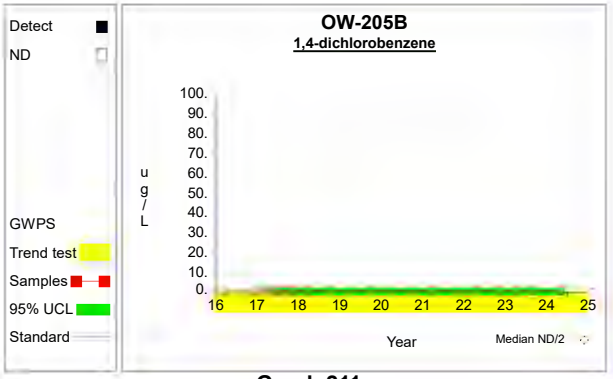
Graph 208



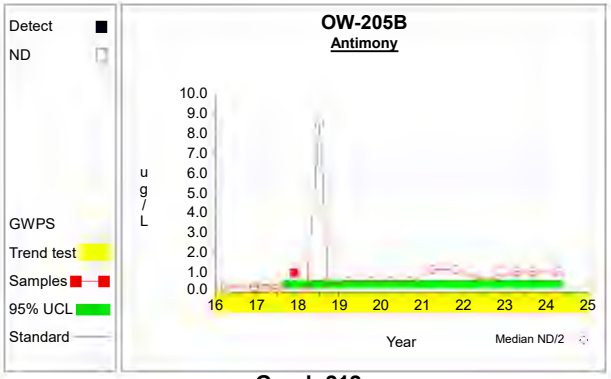
Graph 209



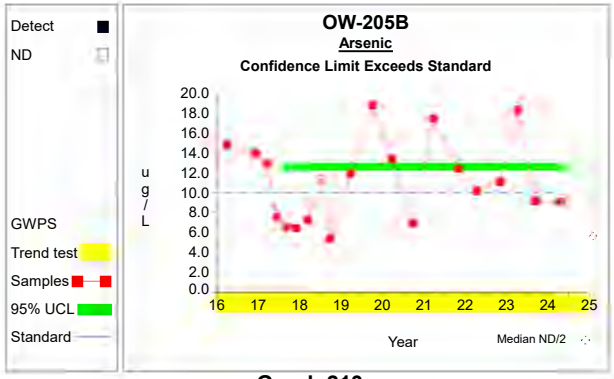
Graph 210



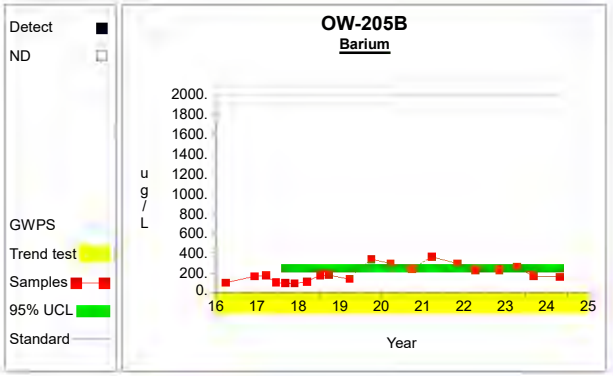
Graph 211



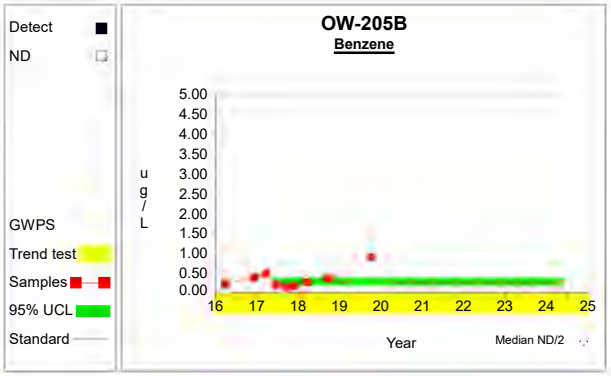
Graph 212



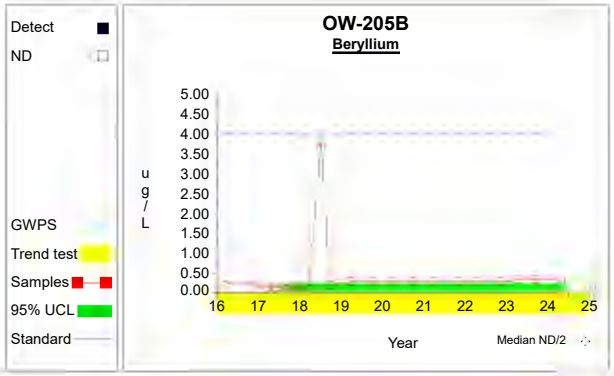
Graph 213



Graph 214

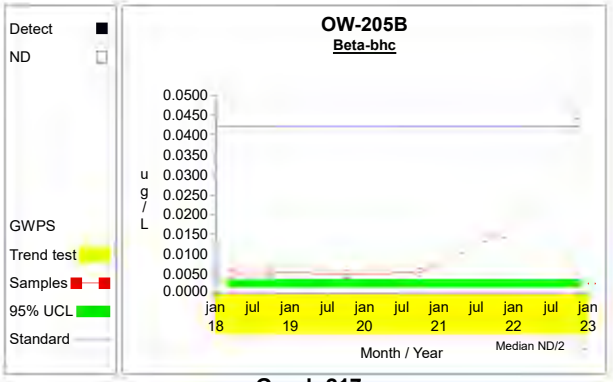


Graph 215

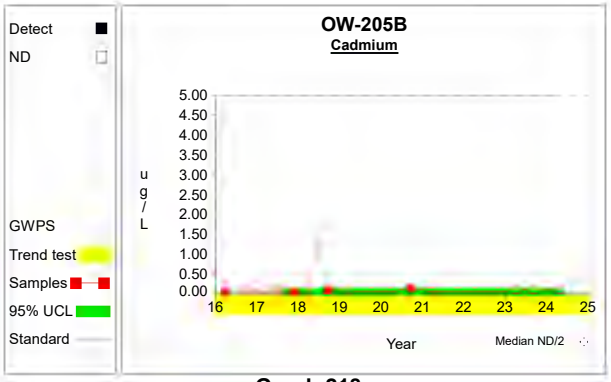


Graph 216

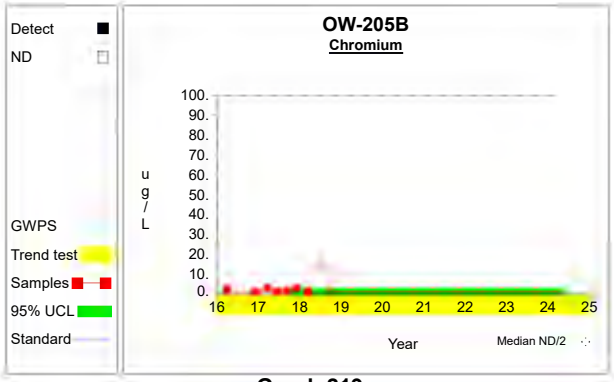
Confidence Limits (Assessment)



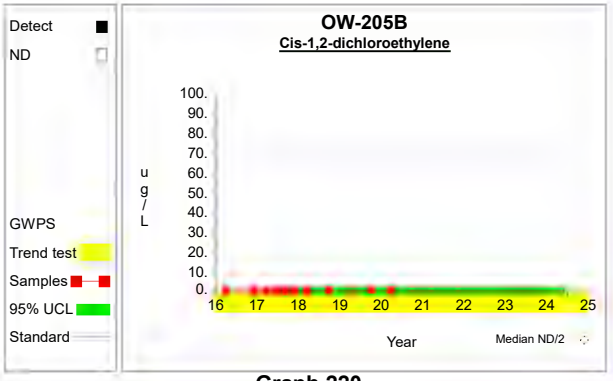
Graph 217



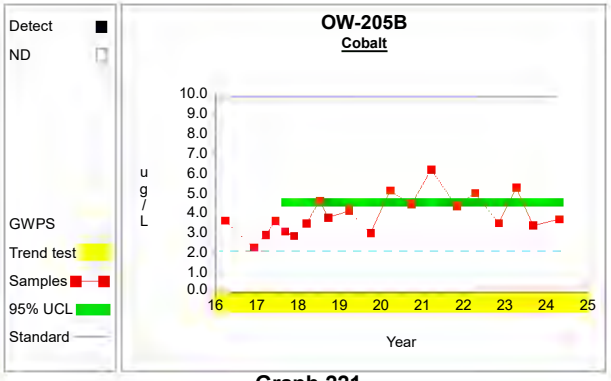
Graph 218



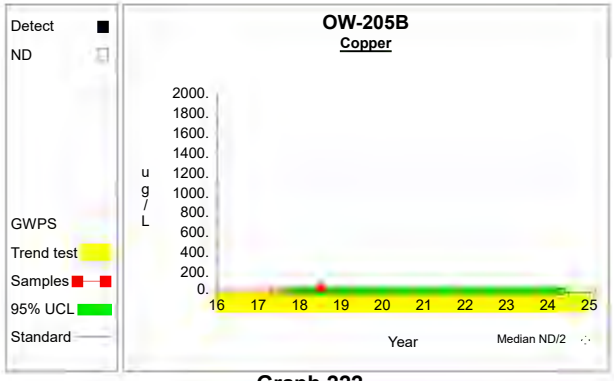
Graph 219



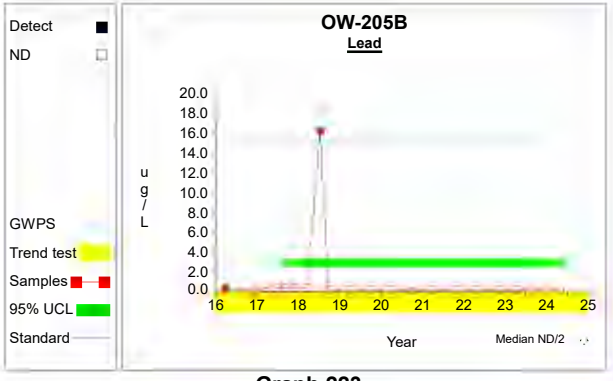
Graph 220



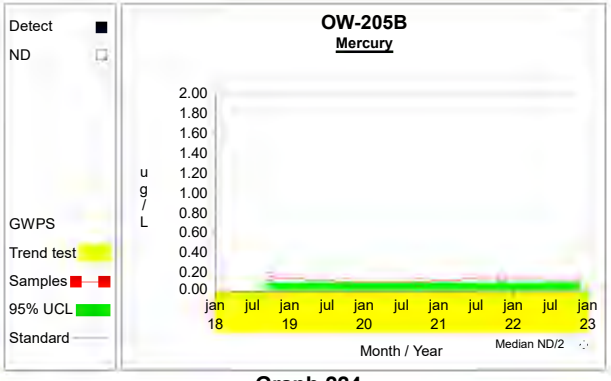
Graph 221



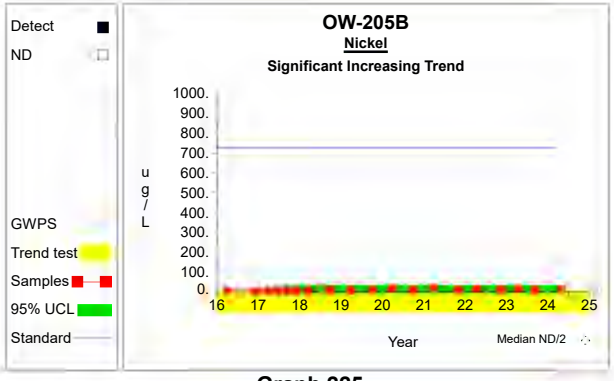
Graph 222



Graph 223

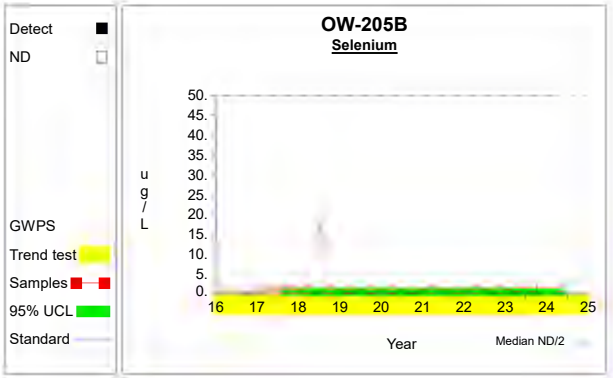


Graph 224

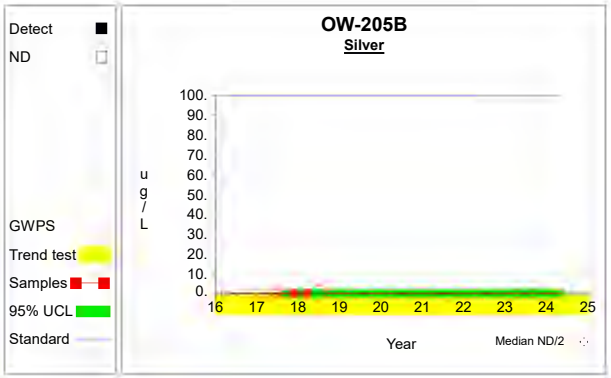


Graph 225

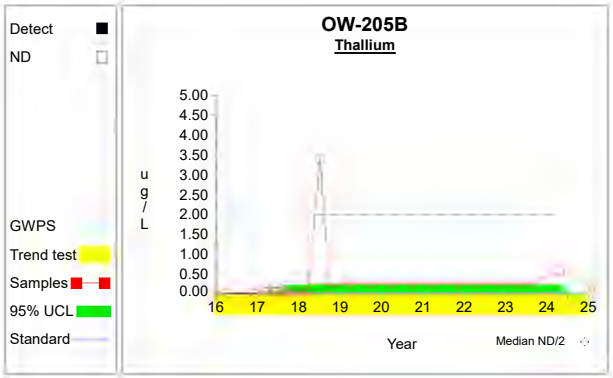
Confidence Limits (Assessment)



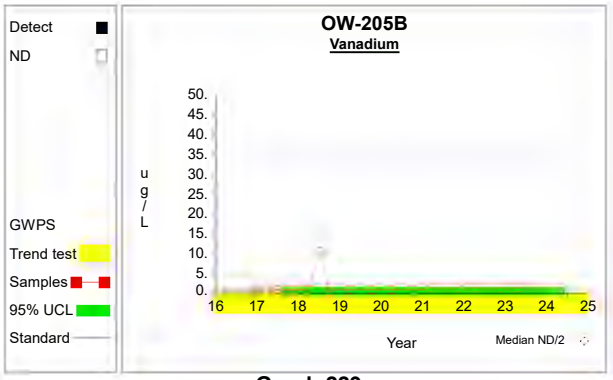
Graph 226



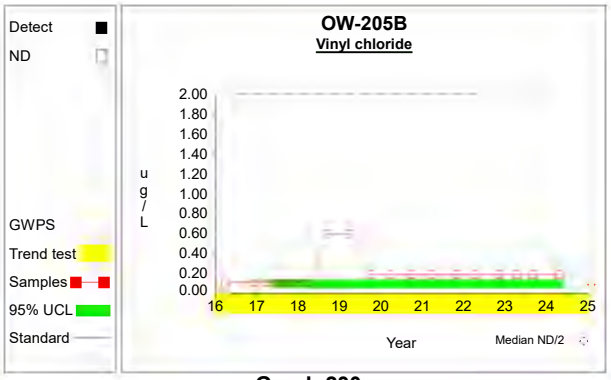
Graph 227



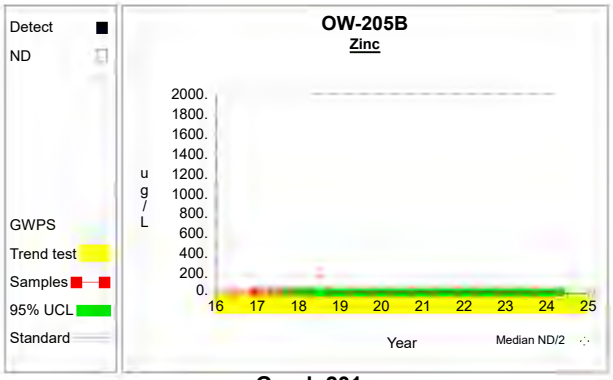
Graph 228



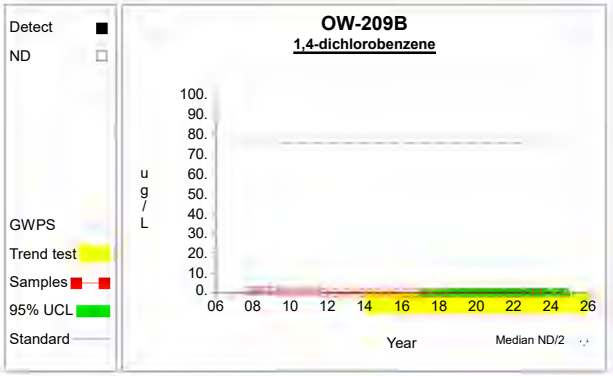
Graph 229



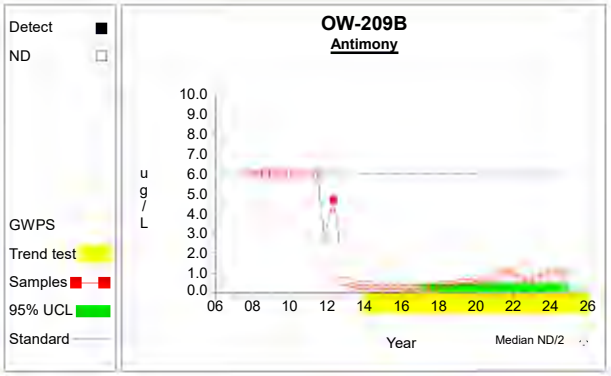
Graph 230



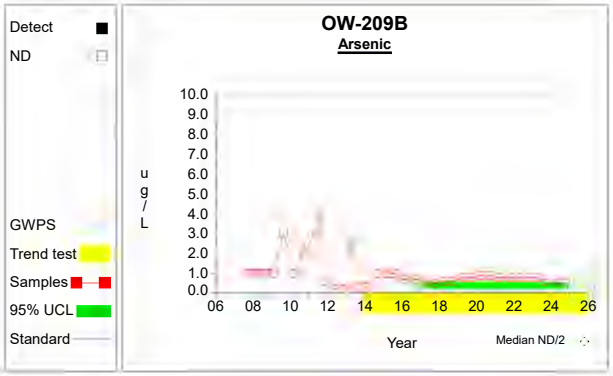
Graph 231



Graph 232

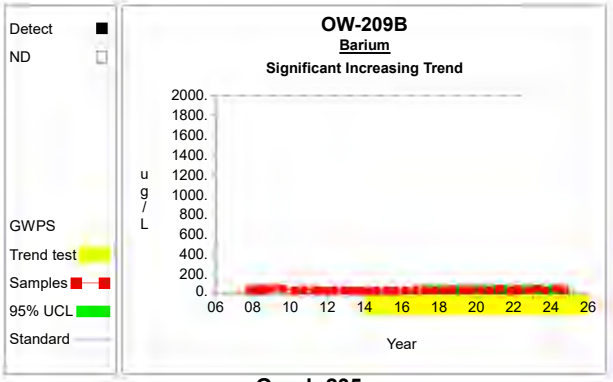


Graph 233

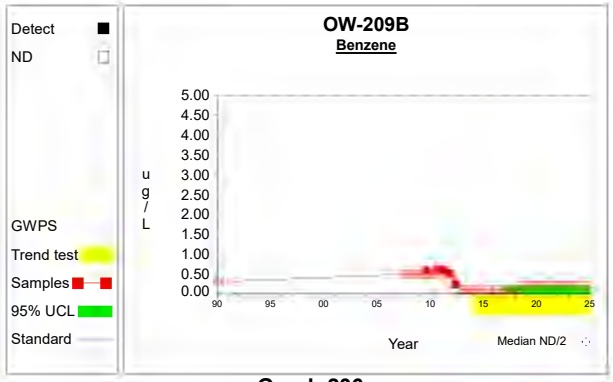


Graph 234

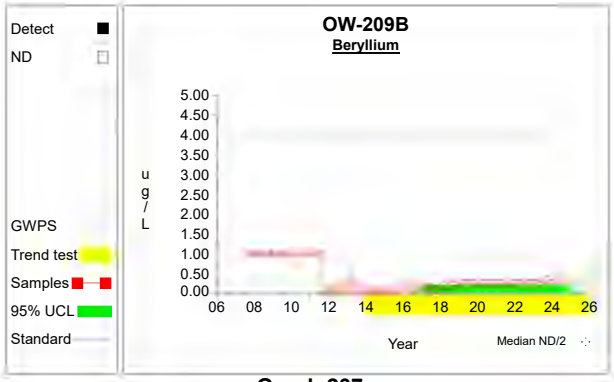
Confidence Limits (Assessment)



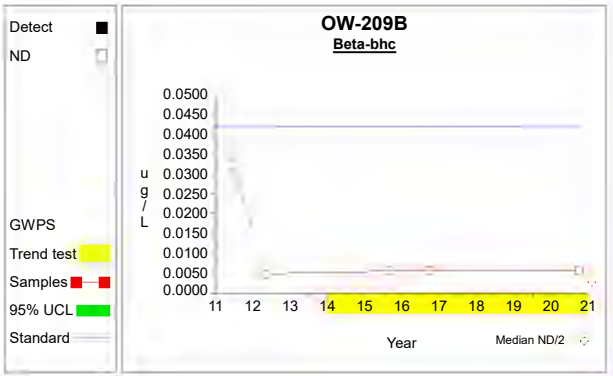
Graph 235



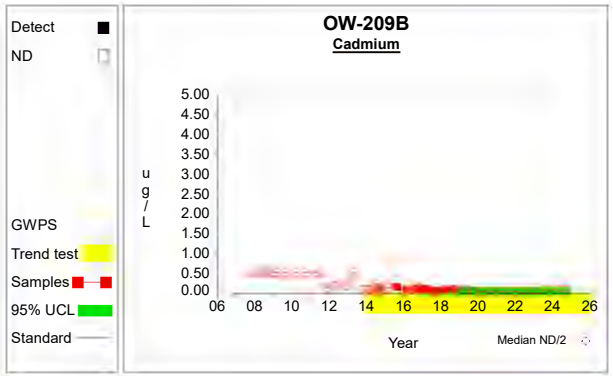
Graph 236



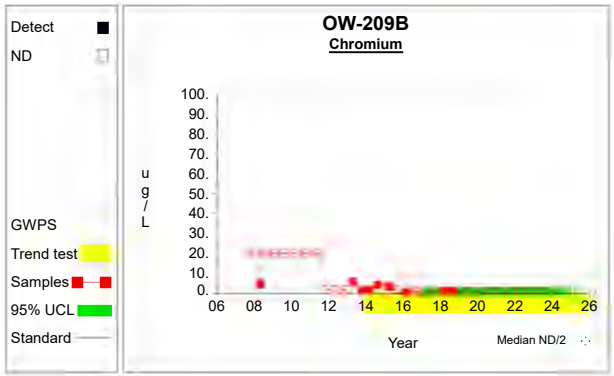
Graph 237



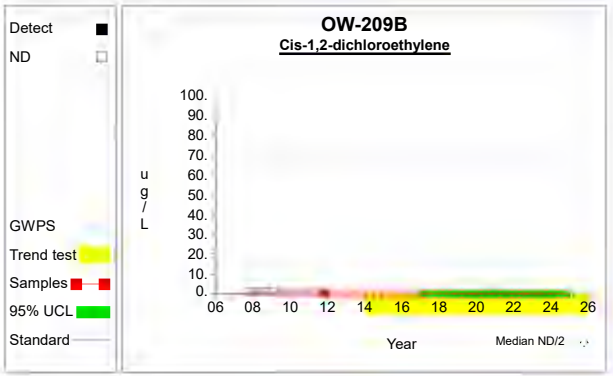
Graph 238



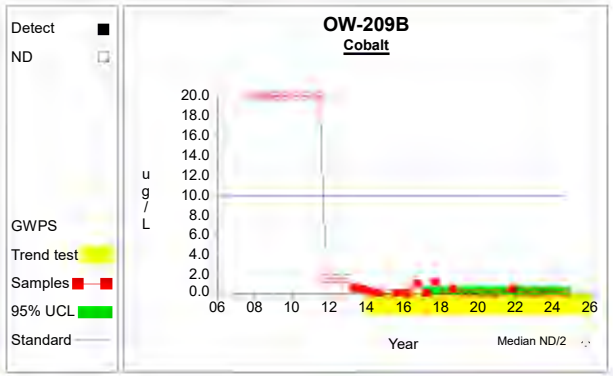
Graph 239



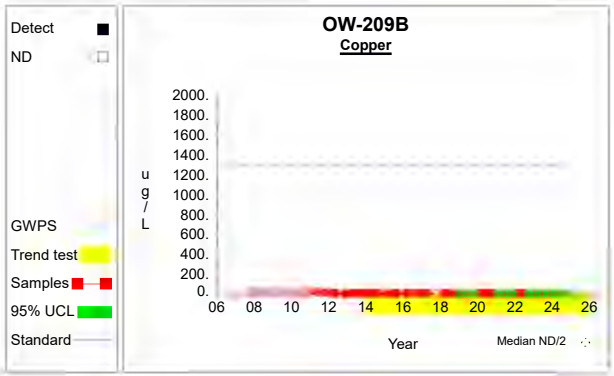
Graph 240



Graph 241

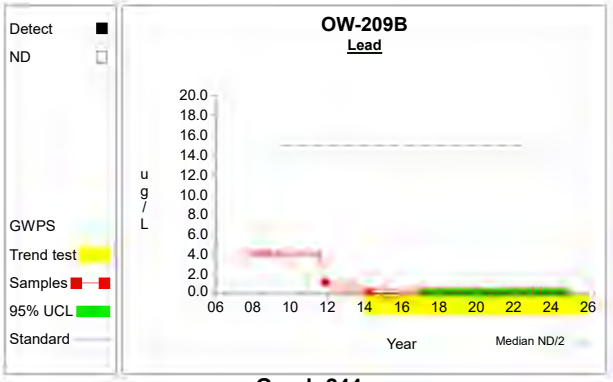


Graph 242

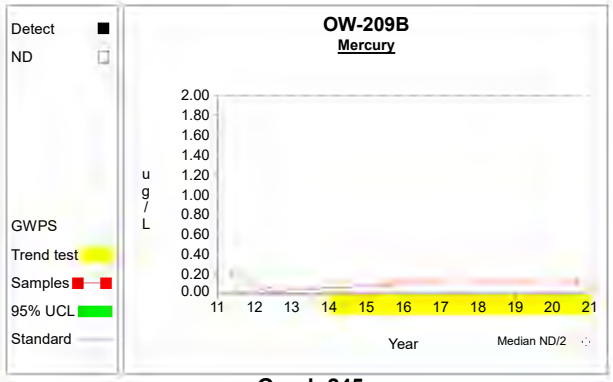


Graph 243

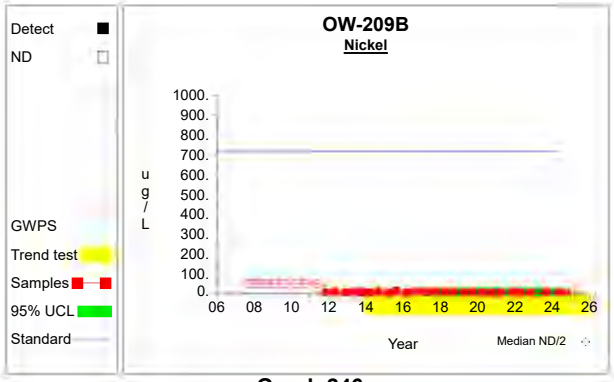
Confidence Limits (Assessment)



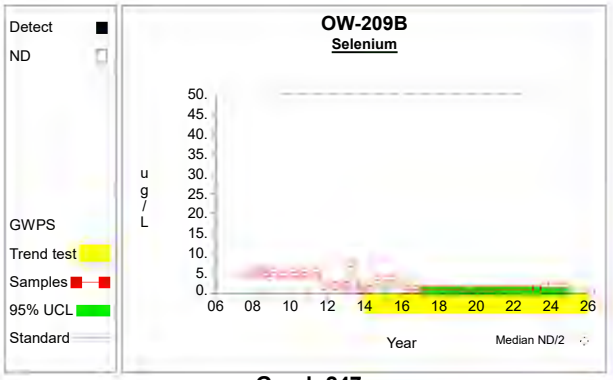
Graph 244



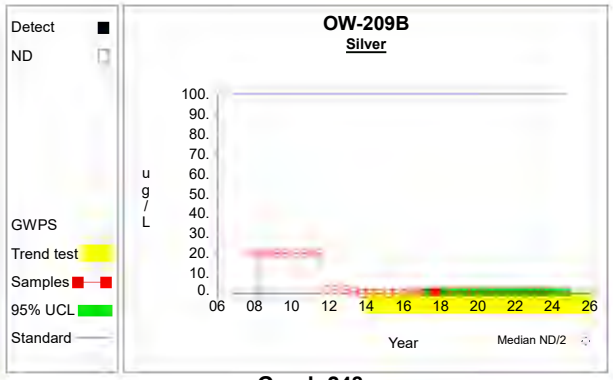
Graph 245



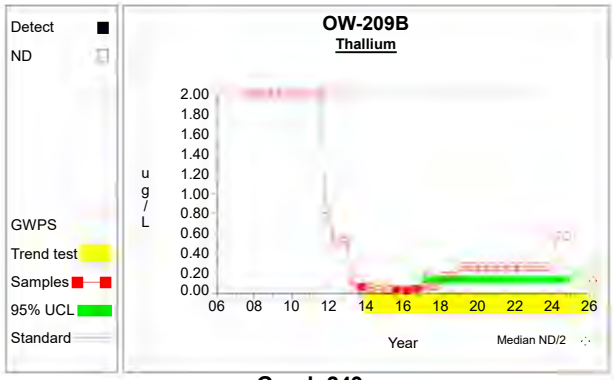
Graph 246



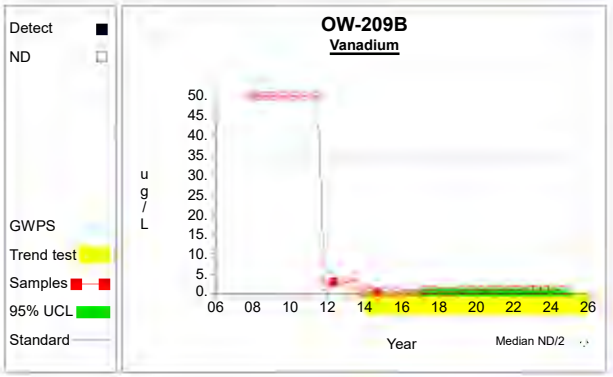
Graph 247



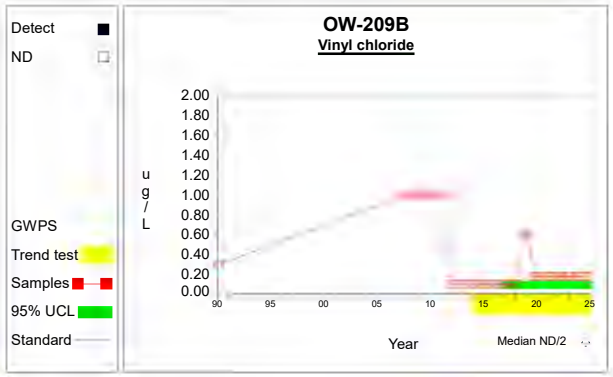
Graph 248



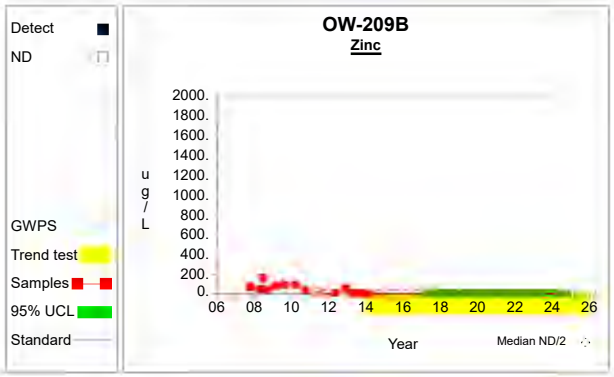
Graph 249



Graph 250

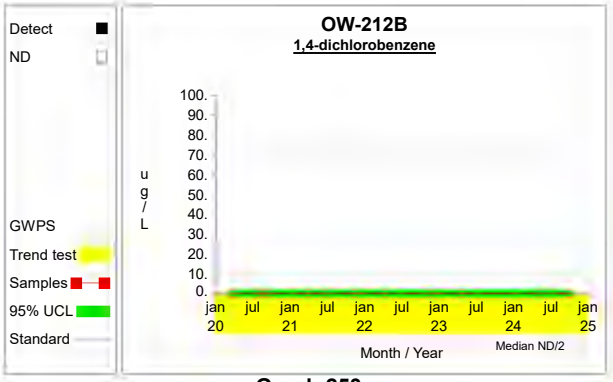


Graph 251

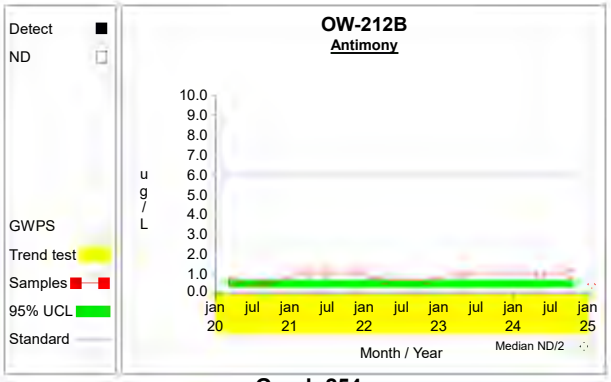


Graph 252

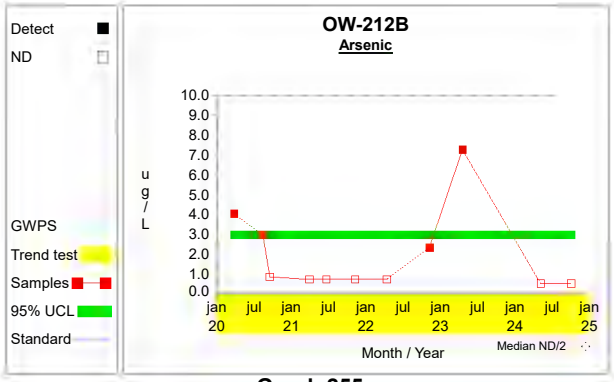
Confidence Limits (Assessment)



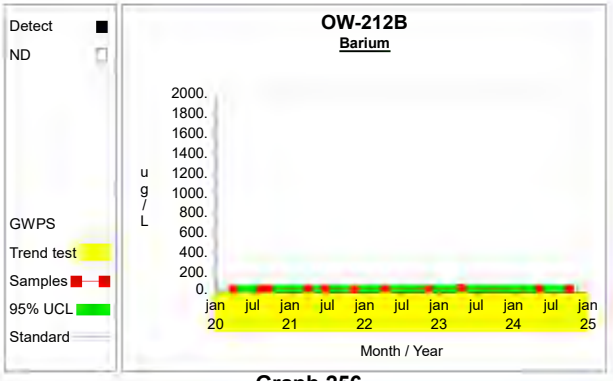
Graph 253



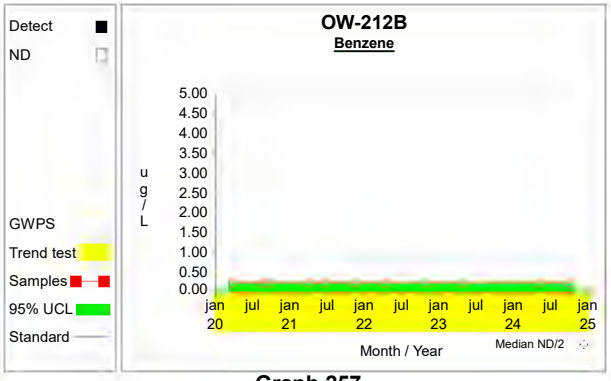
Graph 254



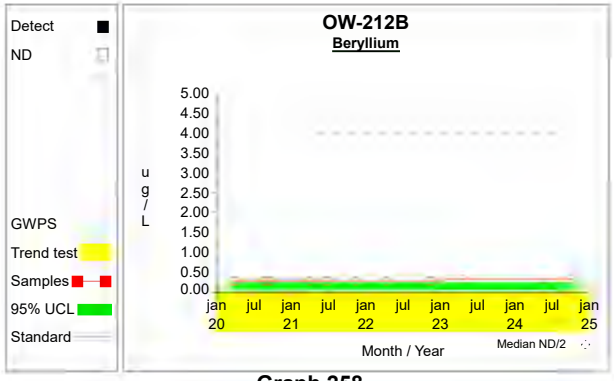
Graph 255



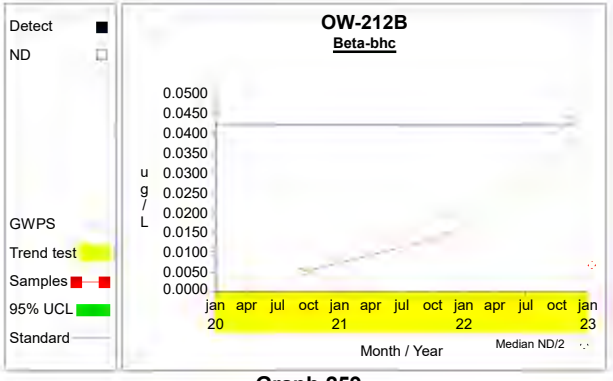
Graph 256



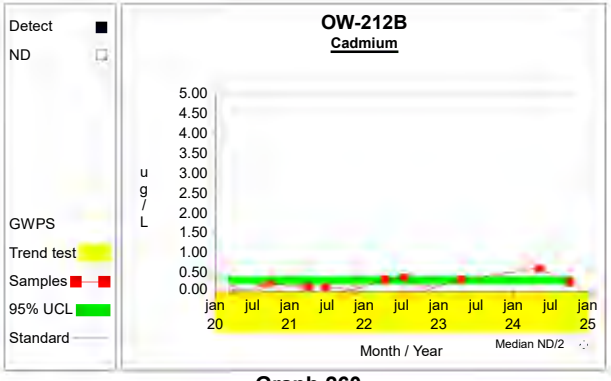
Graph 257



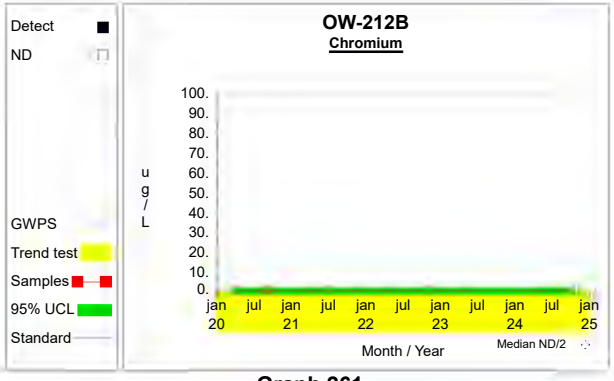
Graph 258



Graph 259

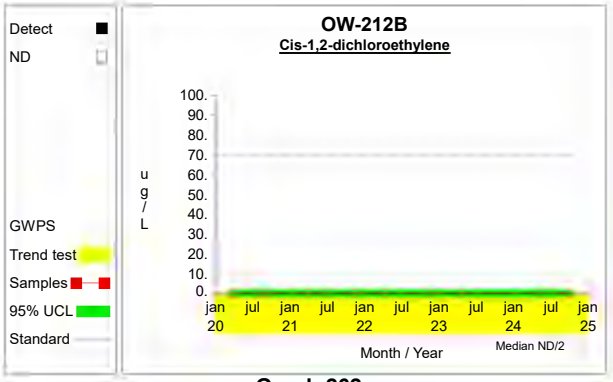


Graph 260

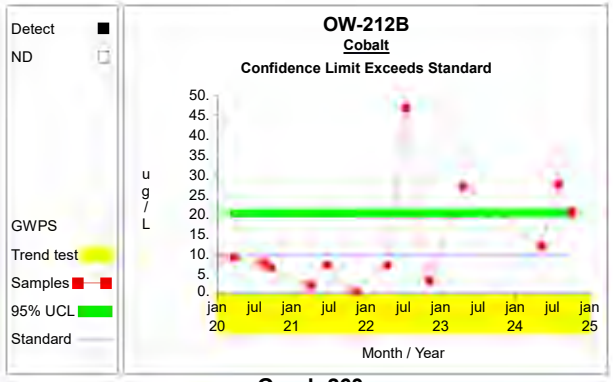


Graph 261

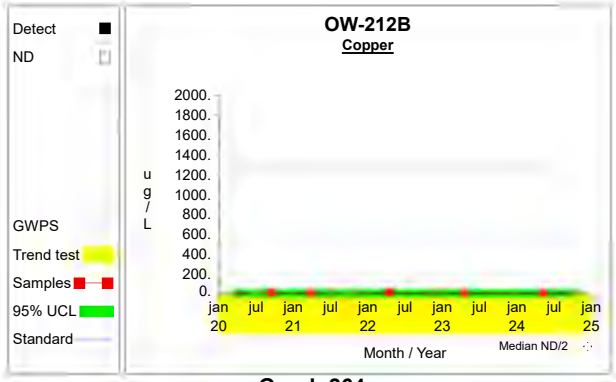
Confidence Limits (Assessment)



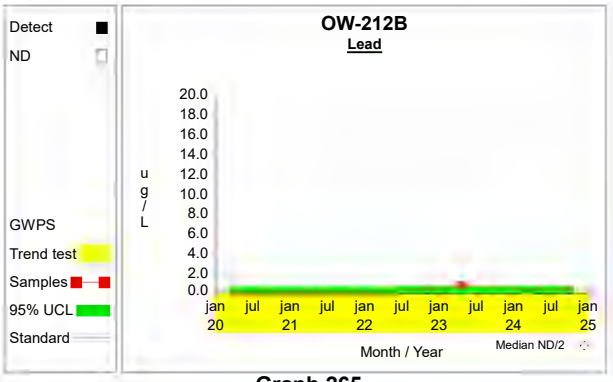
Graph 262



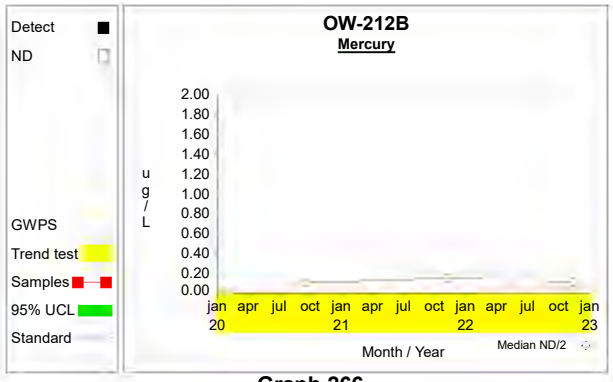
Graph 263



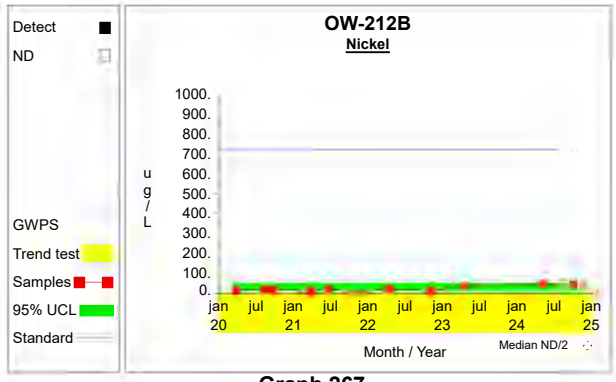
Graph 264



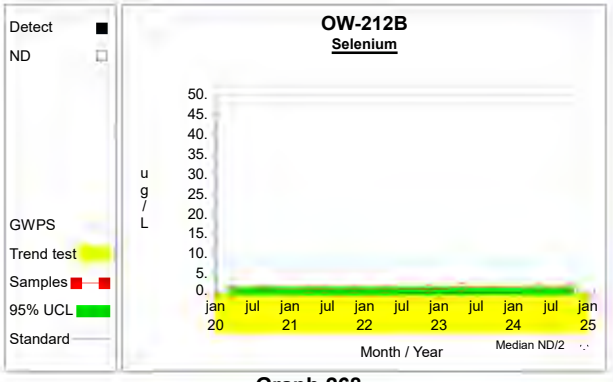
Graph 265



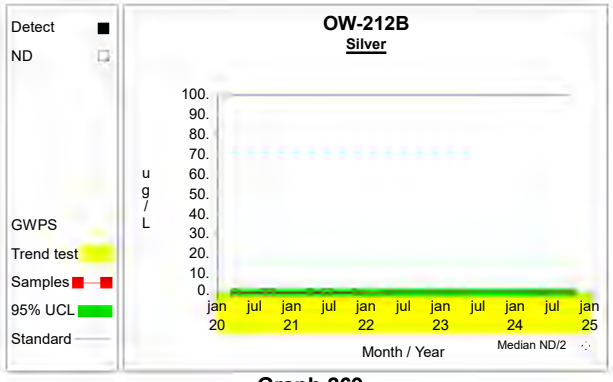
Graph 266



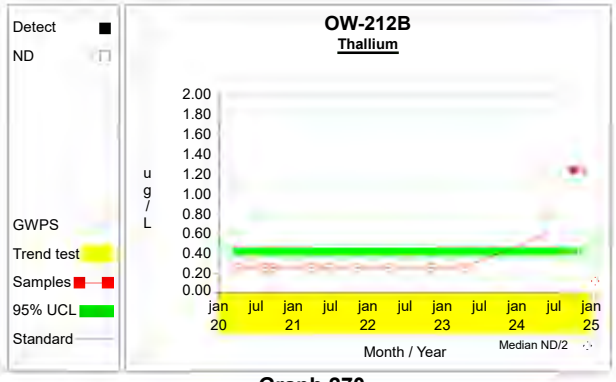
Graph 267



Graph 268

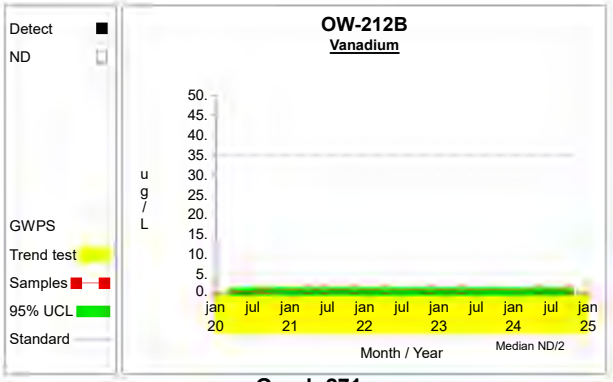


Graph 269

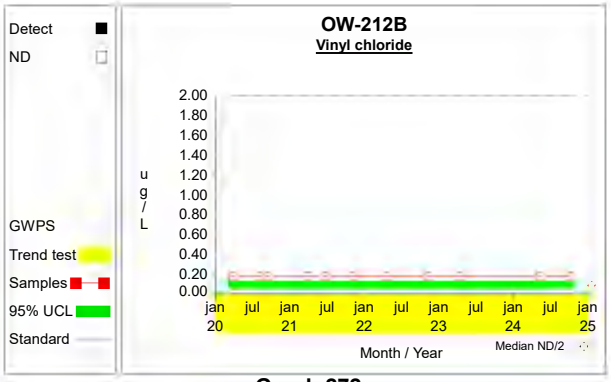


Graph 270

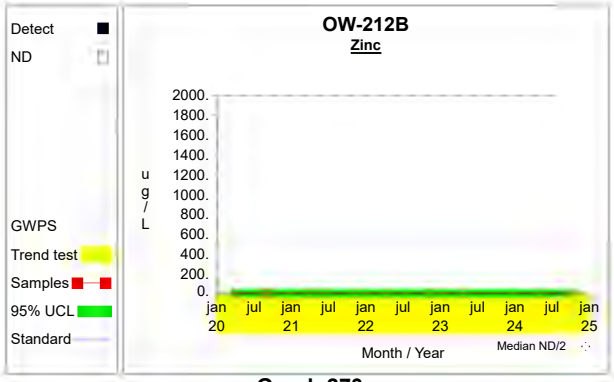
Confidence Limits (Assessment)



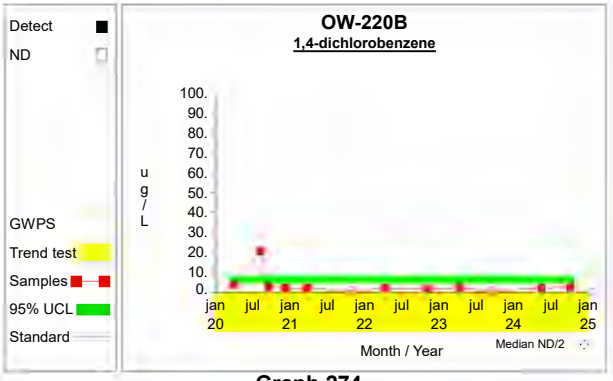
Graph 271



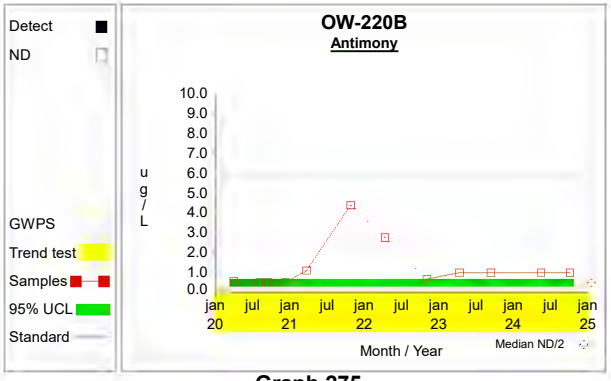
Graph 272



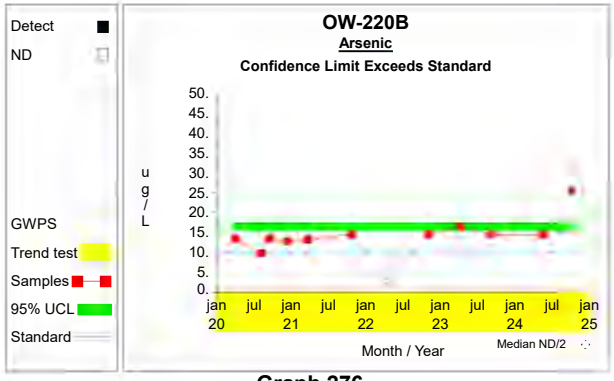
Graph 273



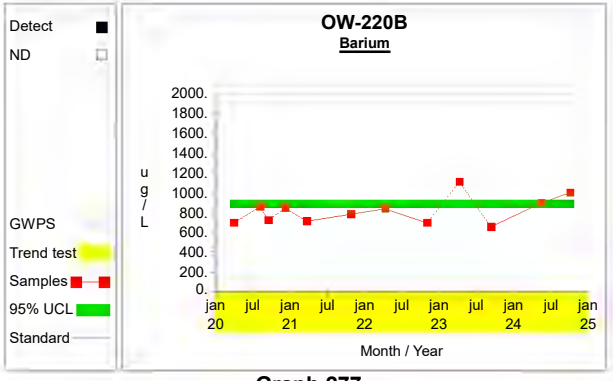
Graph 274



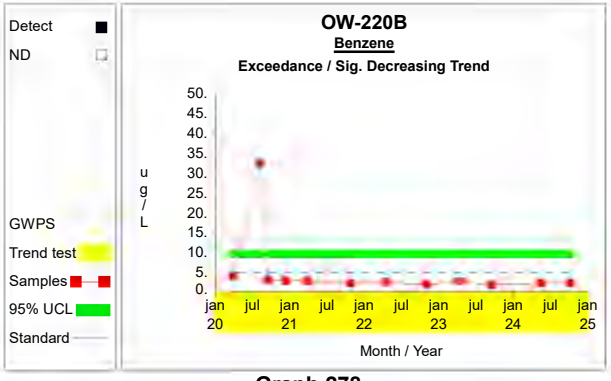
Graph 275



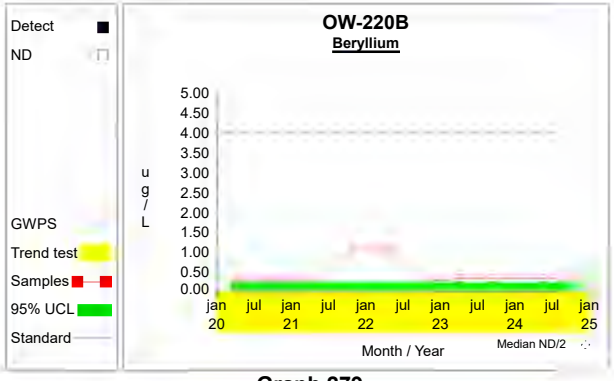
Graph 276



Graph 277

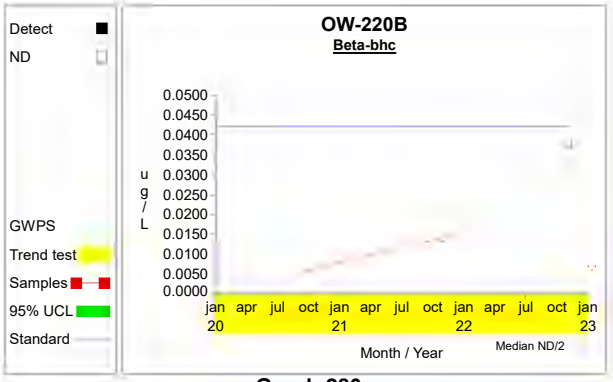


Graph 278

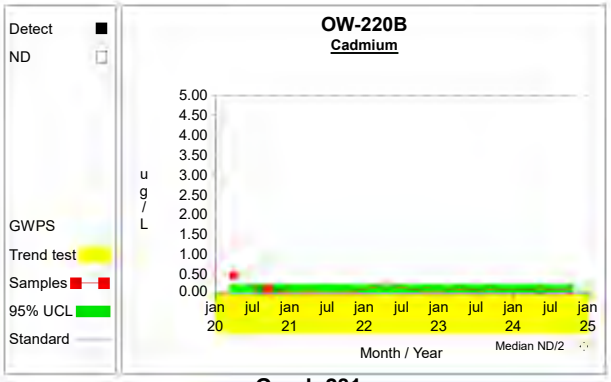


Graph 279

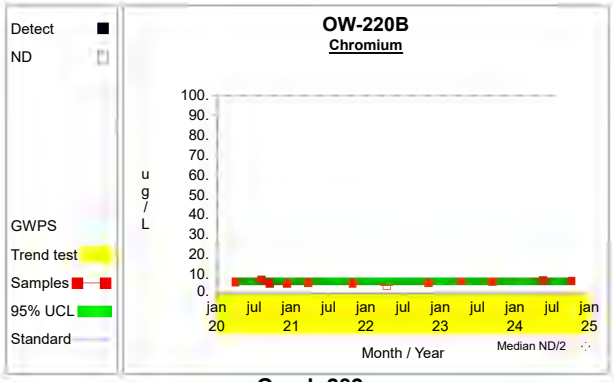
Confidence Limits (Assessment)



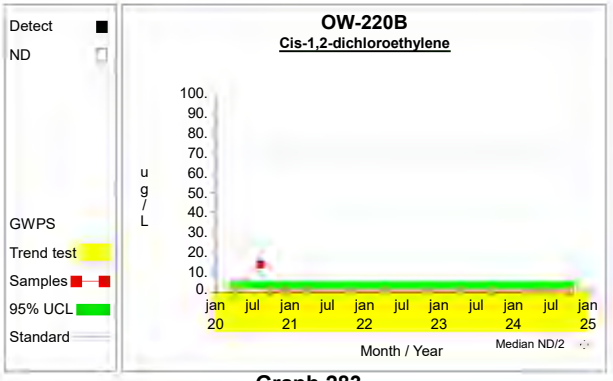
Graph 280



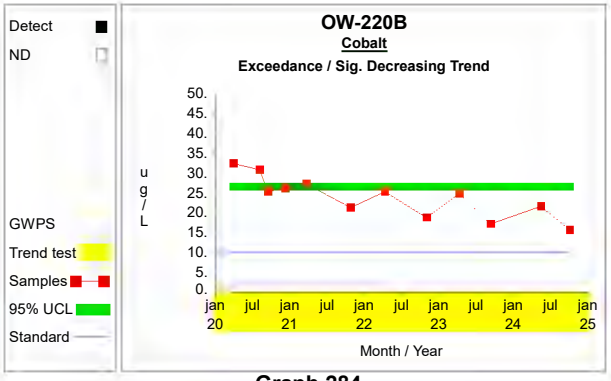
Graph 281



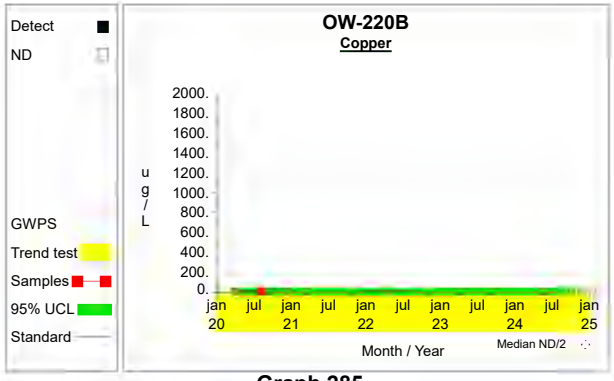
Graph 282



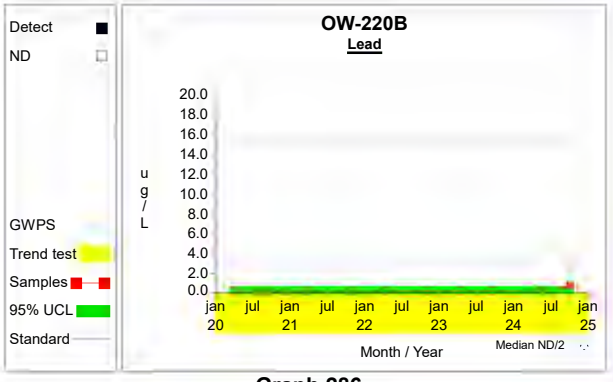
Graph 283



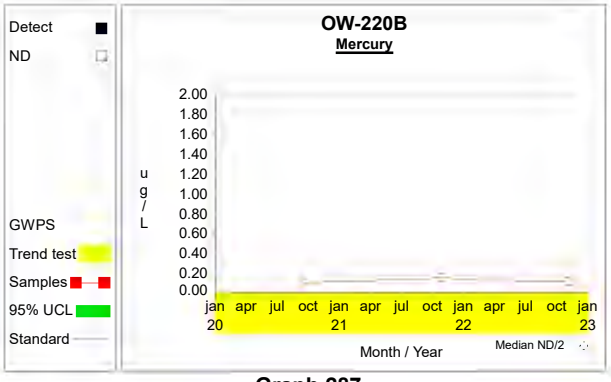
Graph 284



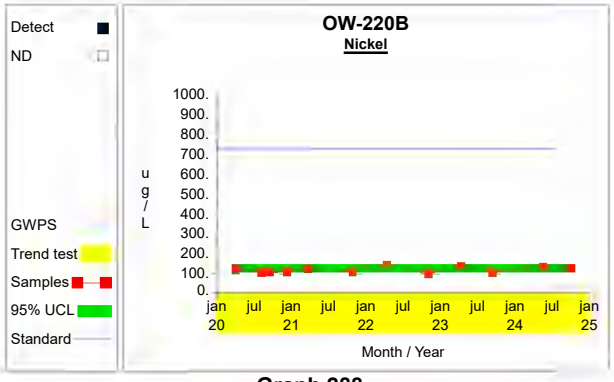
Graph 285



Graph 286

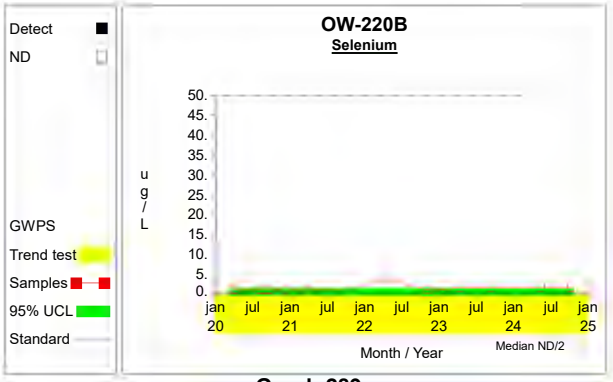


Graph 287

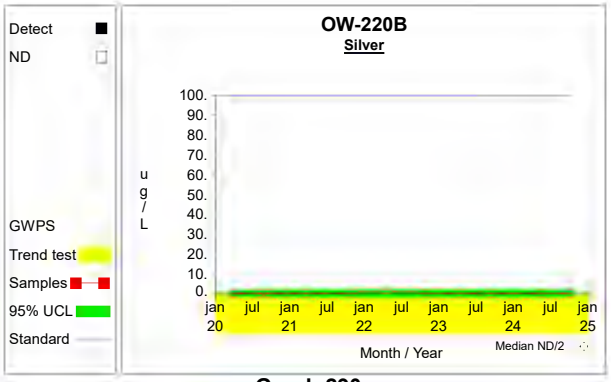


Graph 288

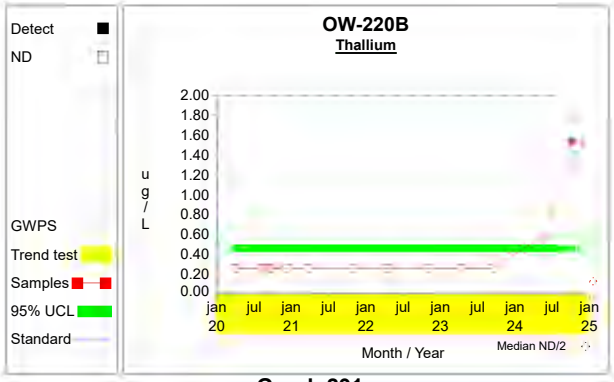
Confidence Limits (Assessment)



Graph 289



Graph 290



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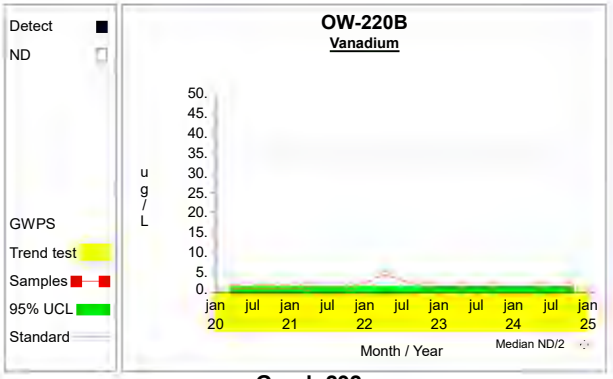
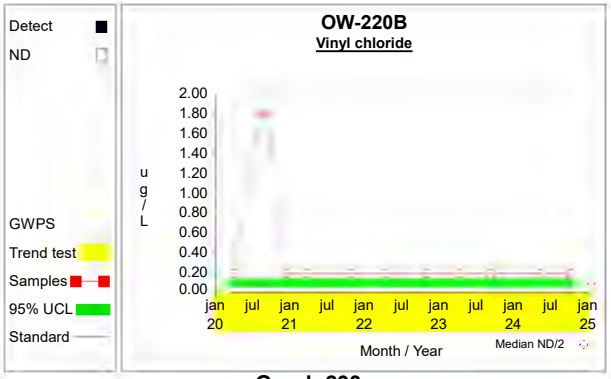
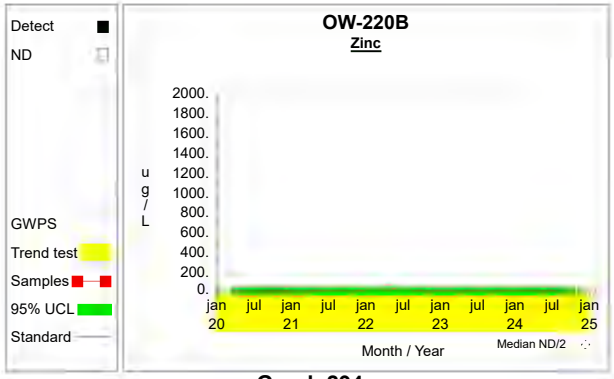


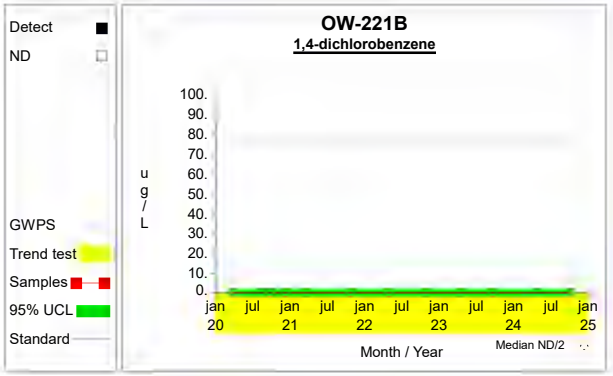
Graph 292



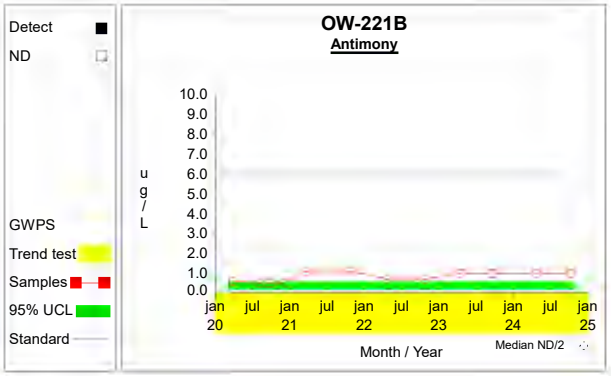
Graph 293



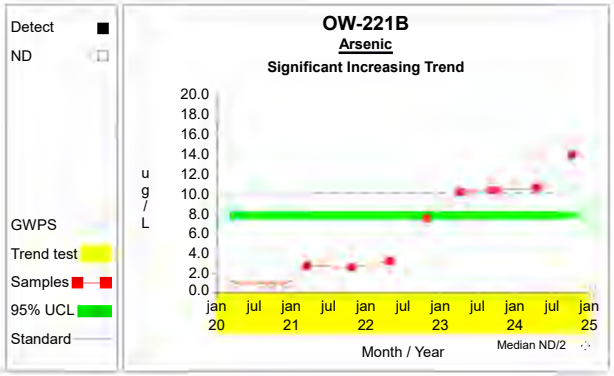
Graph 294



Graph 295

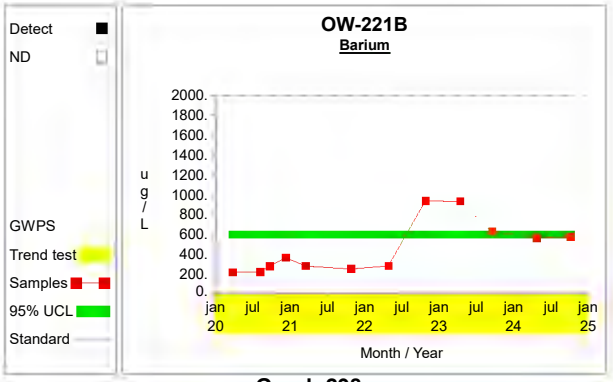


Graph 296

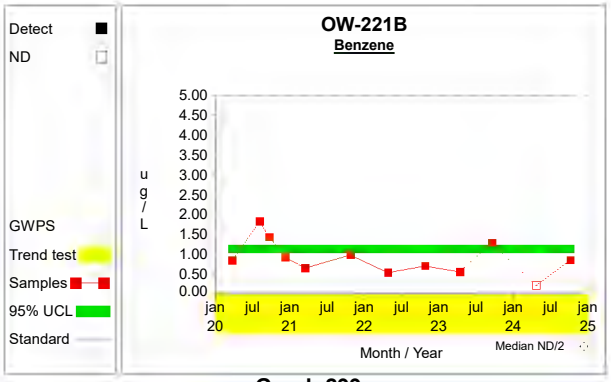


Graph 297

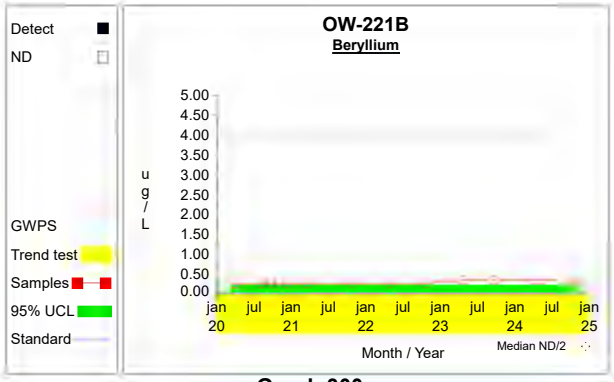
Confidence Limits (Assessment)



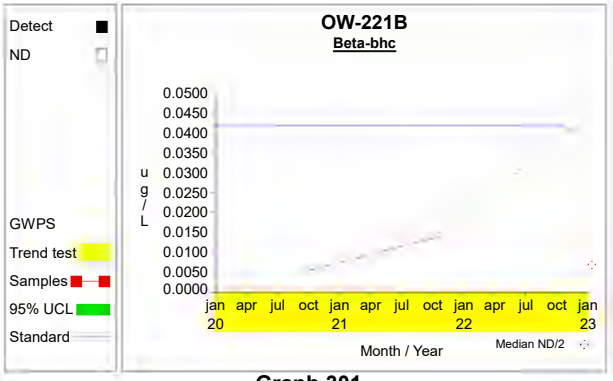
Graph 298



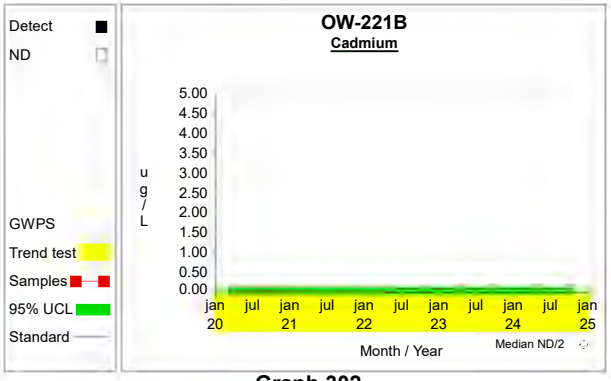
Graph 299



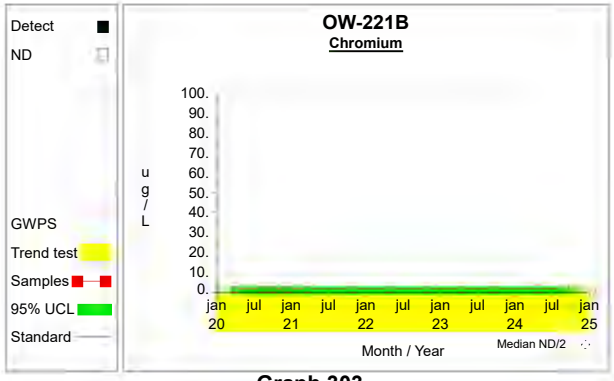
Graph 300



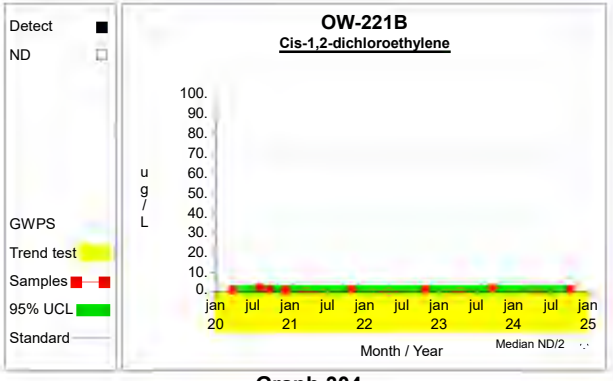
Graph 301



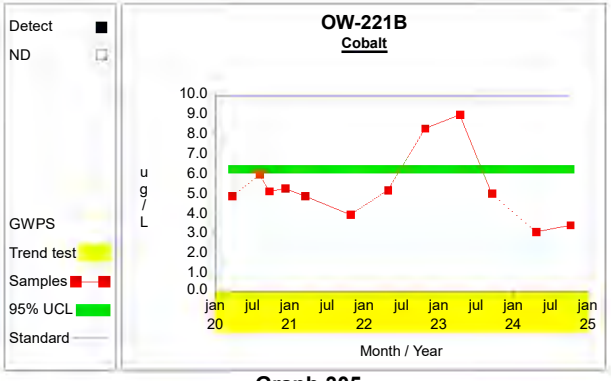
Graph 302



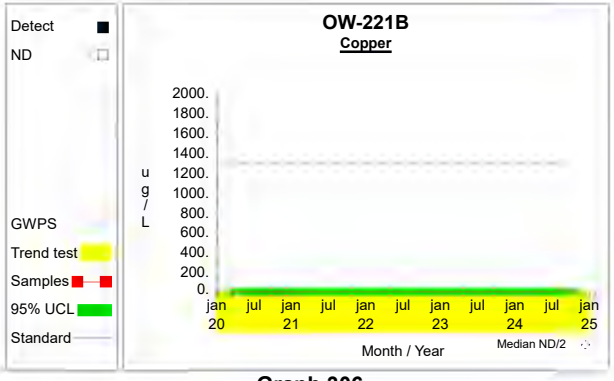
Graph 303



Graph 304

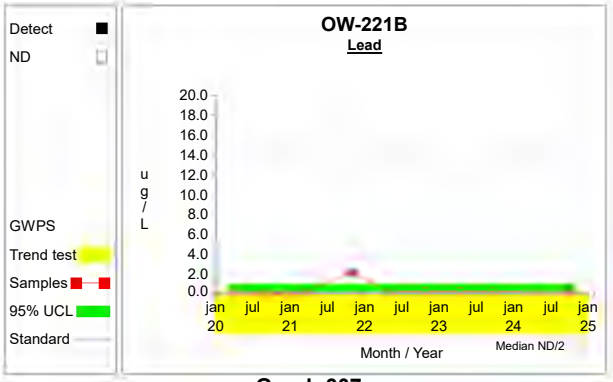


Graph 305

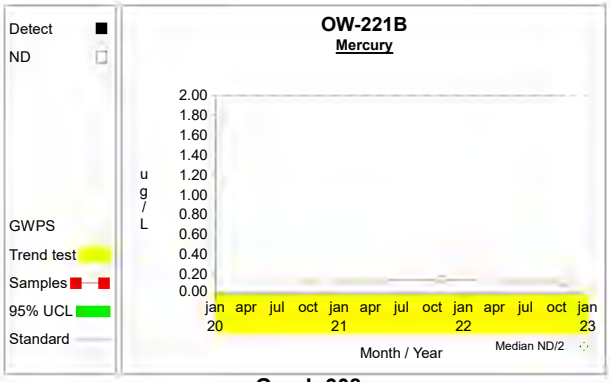


Graph 306

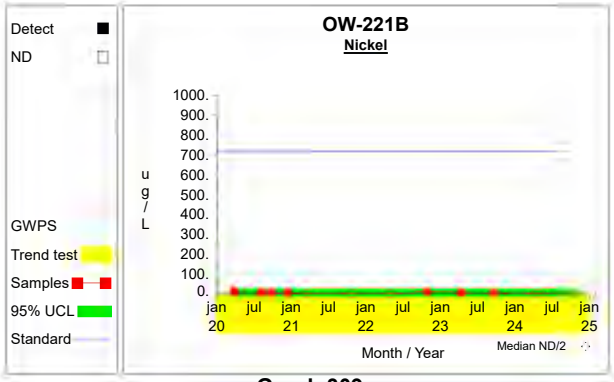
Confidence Limits (Assessment)



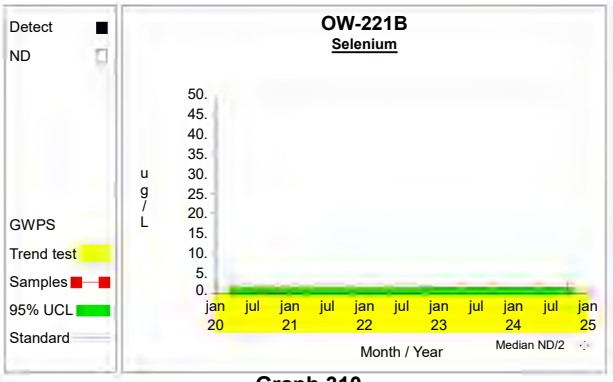
Graph 307



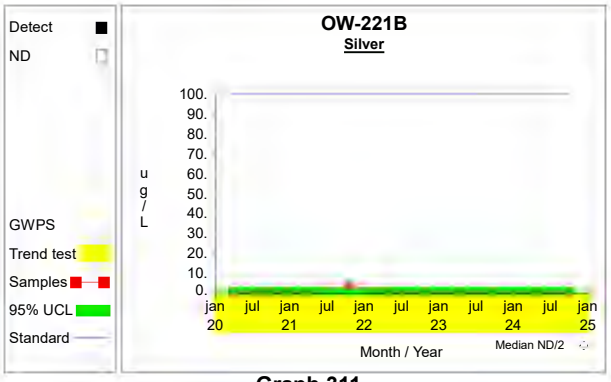
Graph 308



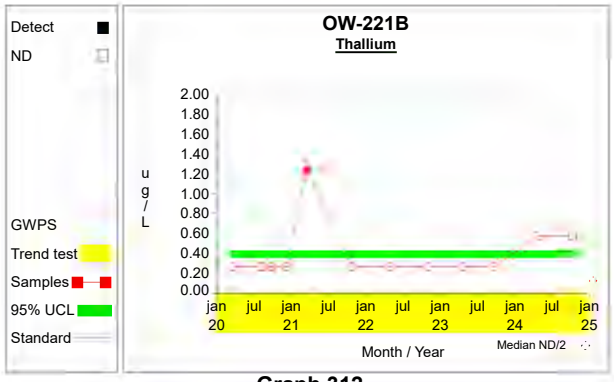
Graph 309



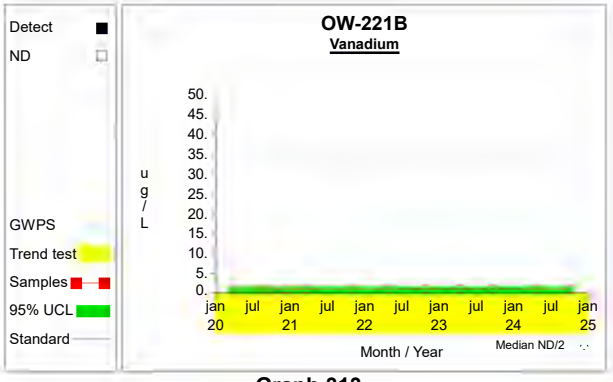
Graph 310



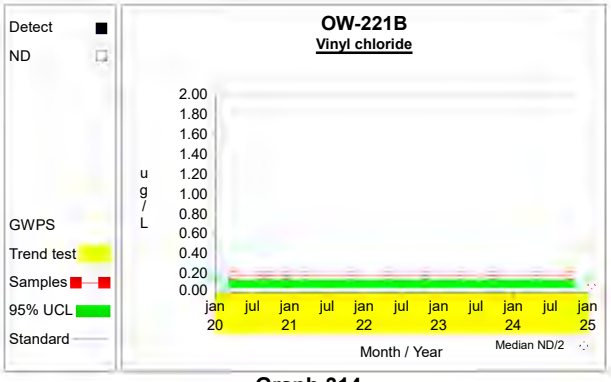
Graph 311



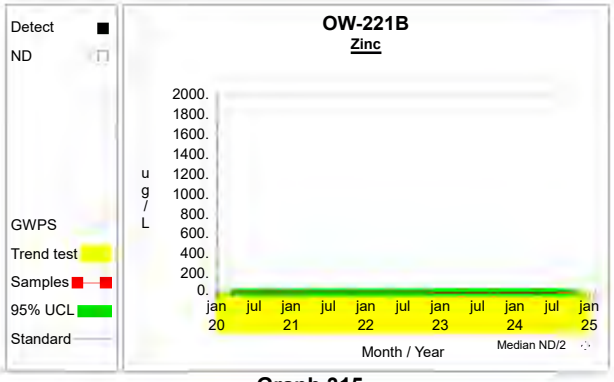
Graph 312



Graph 313

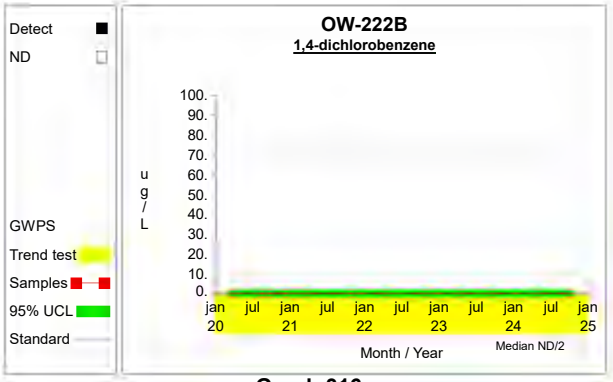


Graph 314

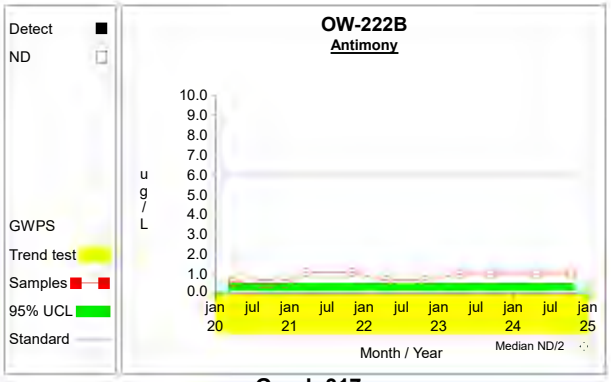


Graph 315

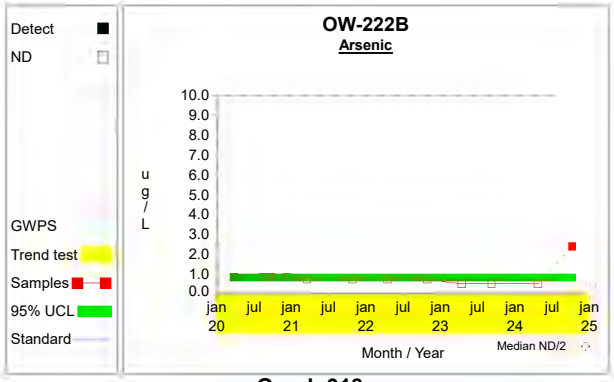
Confidence Limits (Assessment)



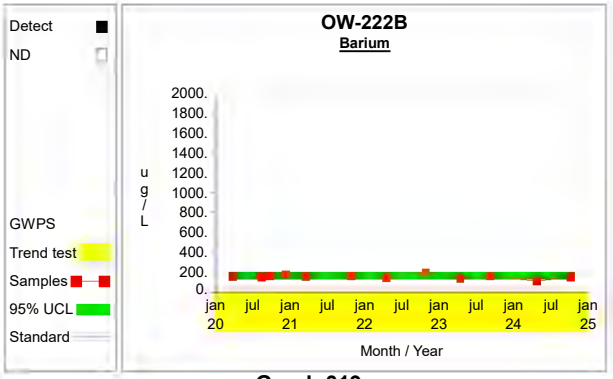
Graph 316



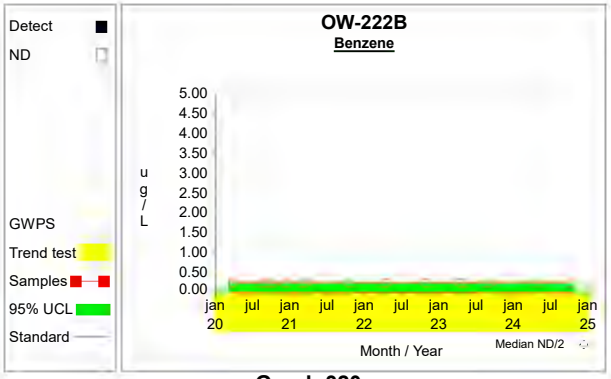
Graph 317



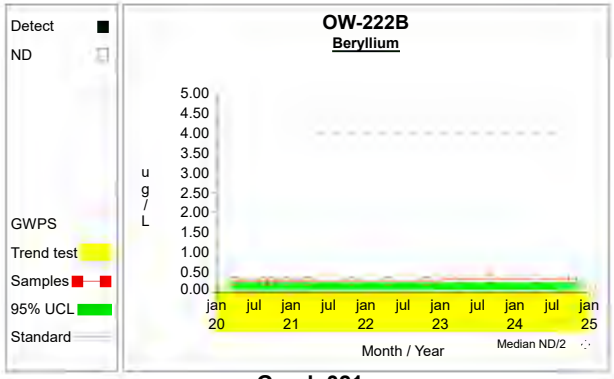
Graph 318



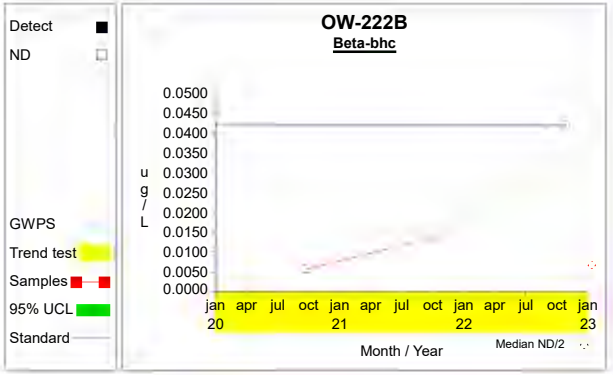
Graph 319



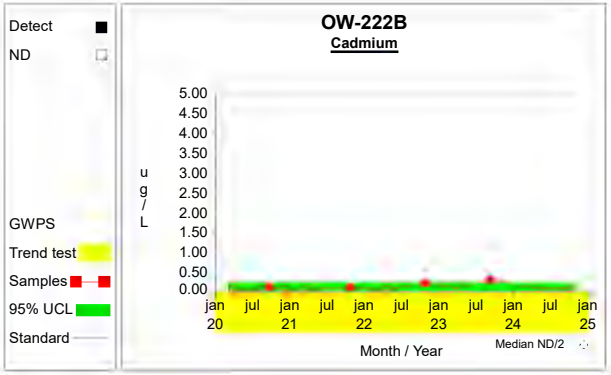
Graph 320



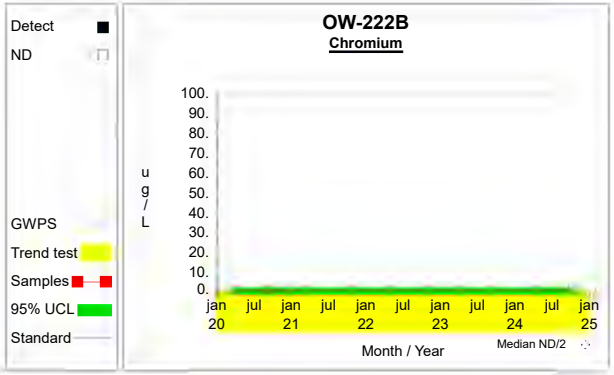
Graph 321



Graph 322

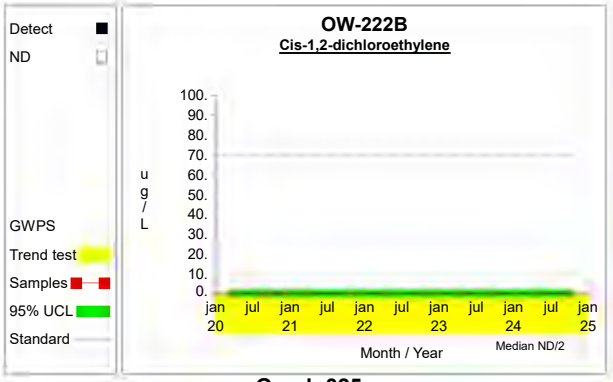


Graph 323

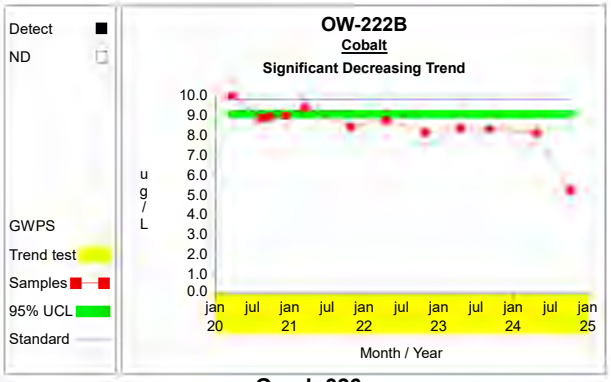


Graph 324

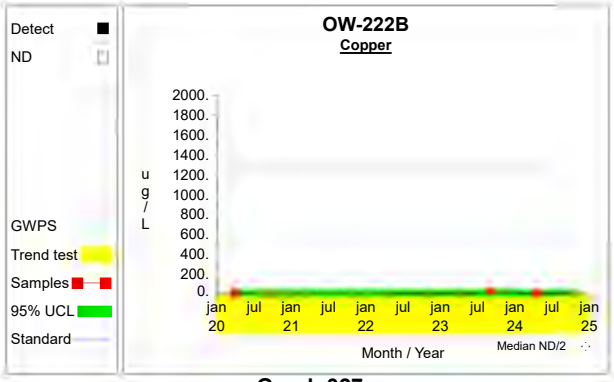
Confidence Limits (Assessment)



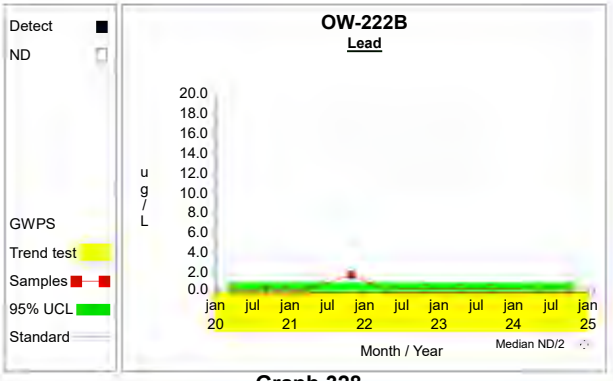
Graph 325



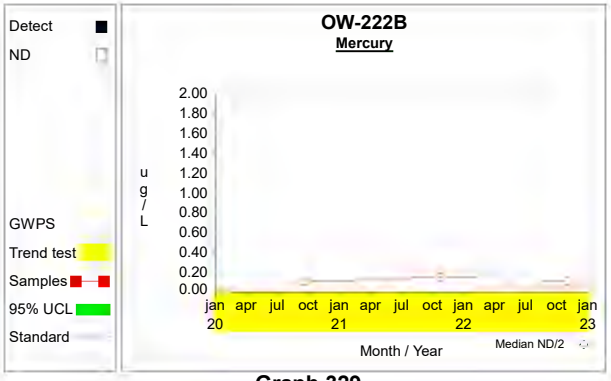
Graph 326



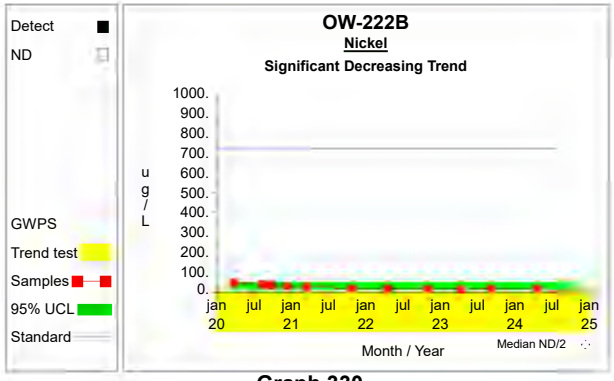
Graph 327



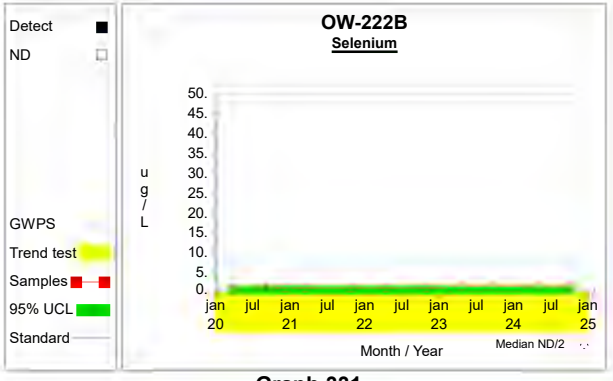
Graph 328



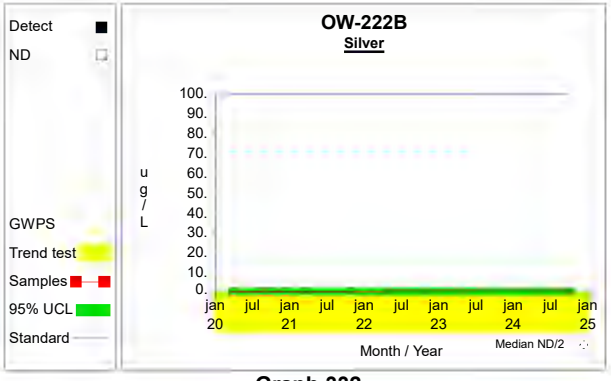
Graph 329



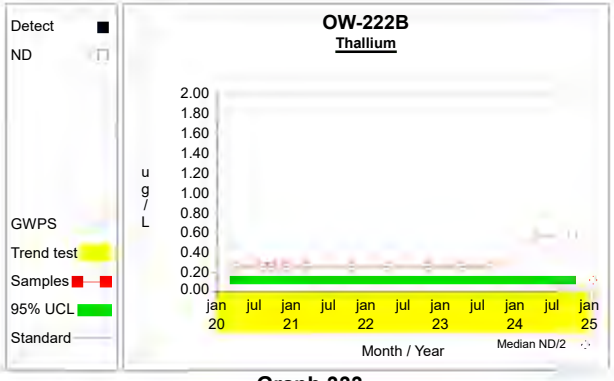
Graph 330



Graph 331

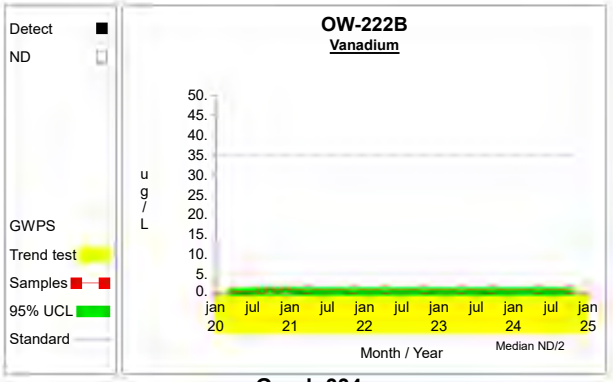


Graph 332

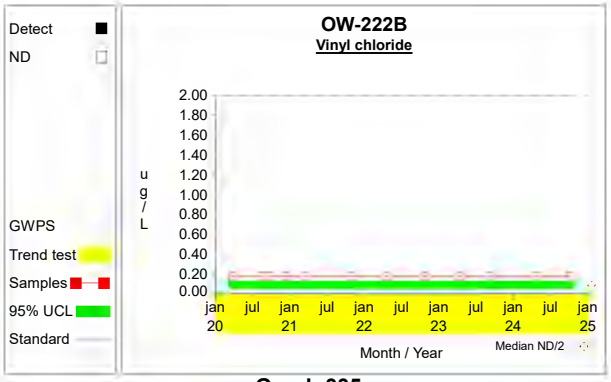


Graph 333

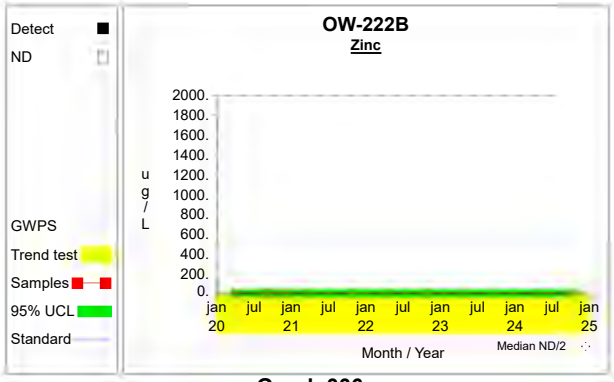
Confidence Limits (Assessment)



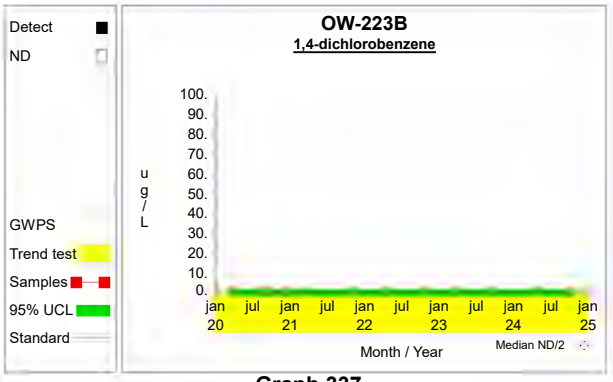
Graph 334



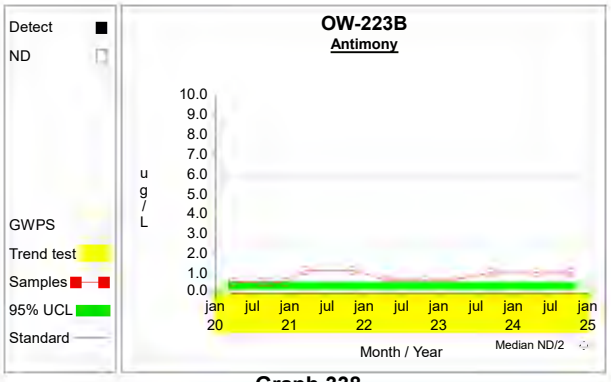
Graph 335



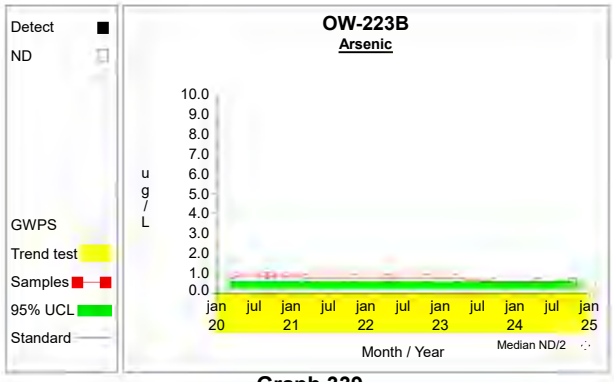
Graph 336



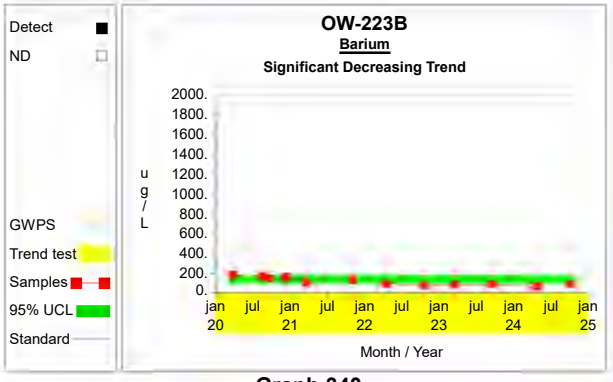
Graph 337



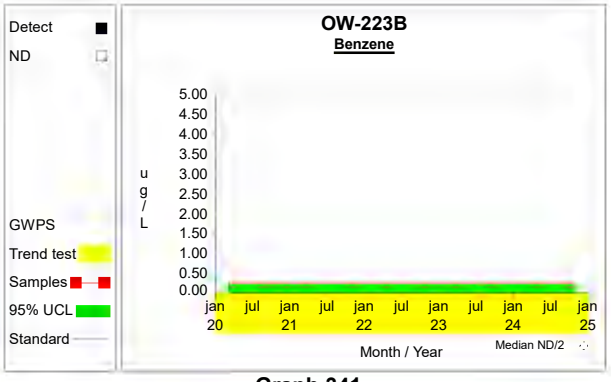
Graph 338



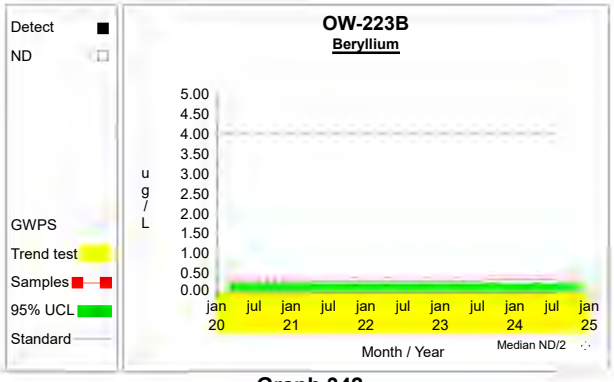
Graph 339



Graph 340

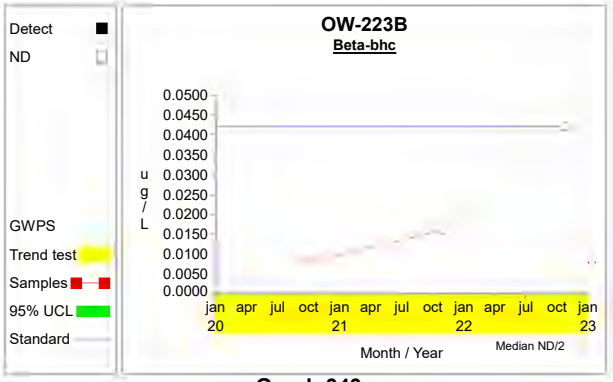


Graph 341

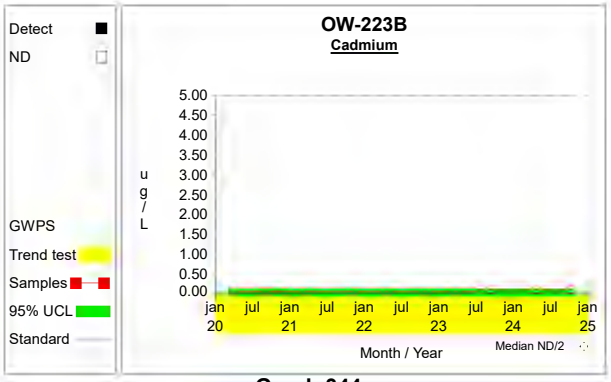


Graph 342

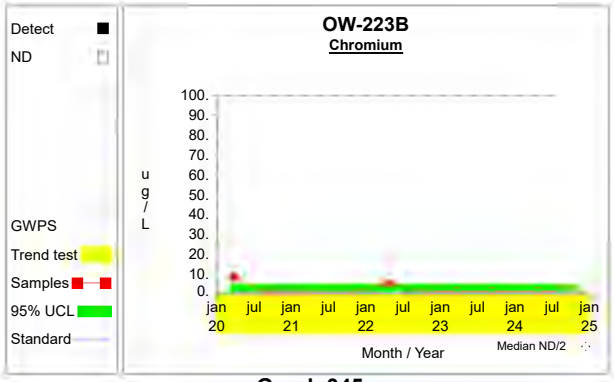
Confidence Limits (Assessment)



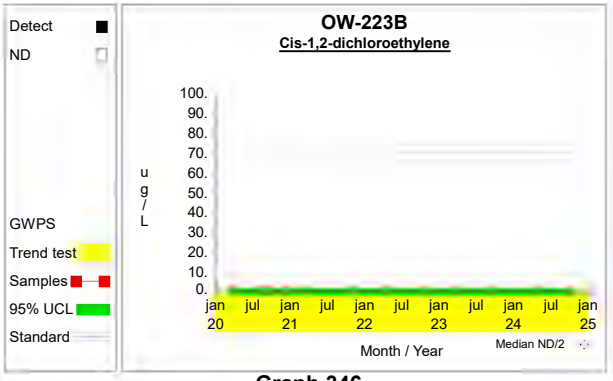
Graph 343



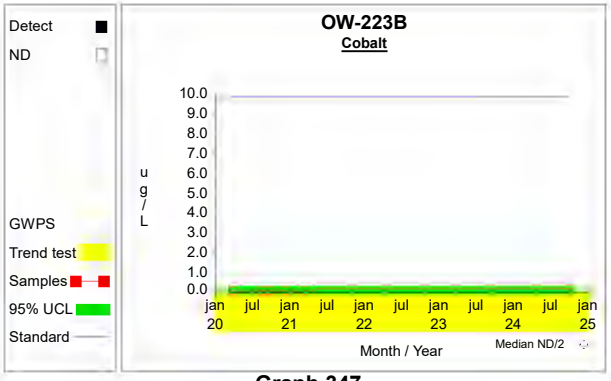
Graph 344



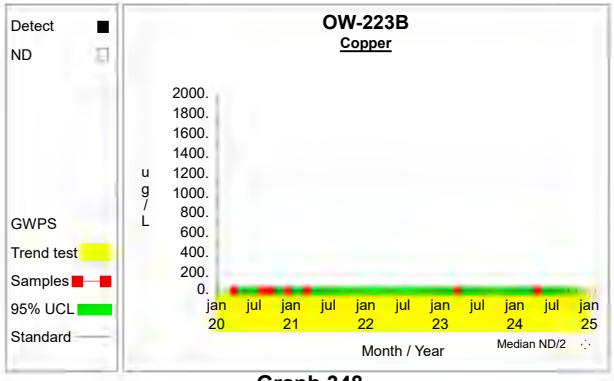
Graph 345



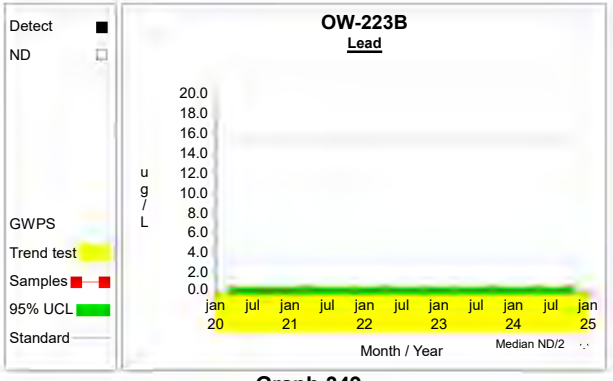
Graph 346



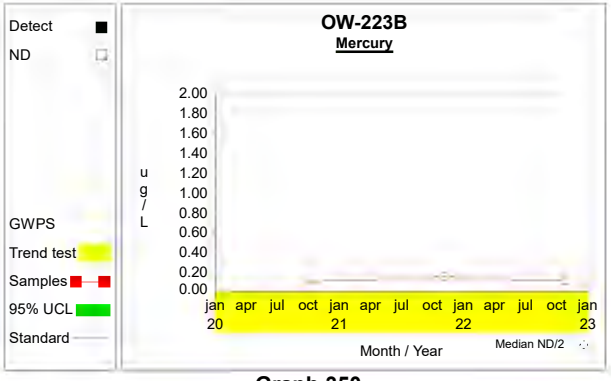
Graph 347



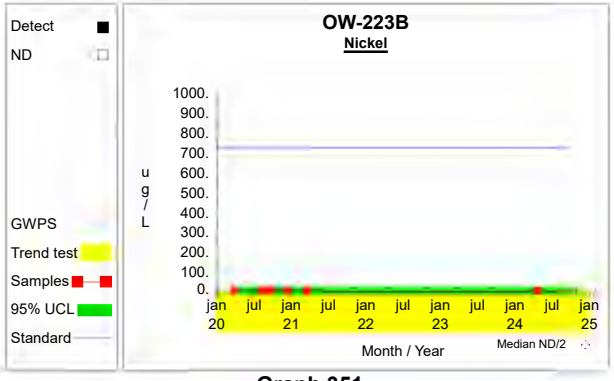
Graph 348



Graph 349

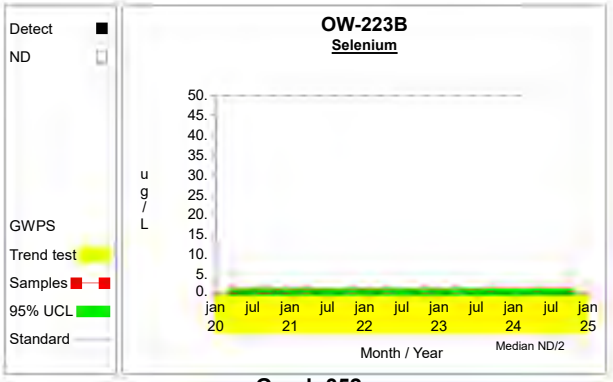


Graph 350

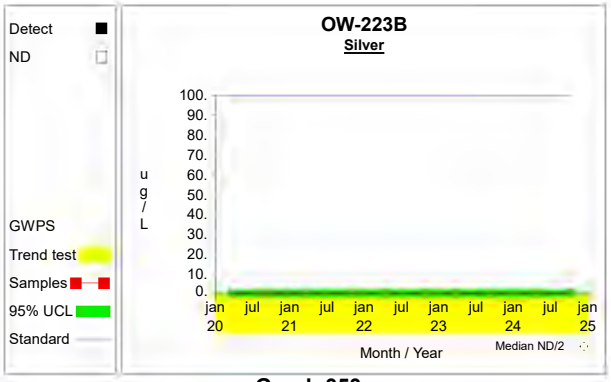


Graph 351

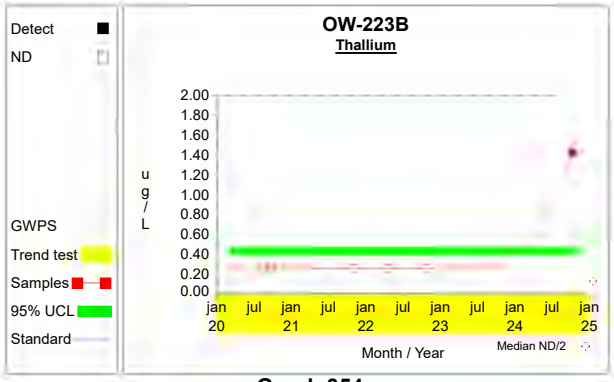
Confidence Limits (Assessment)



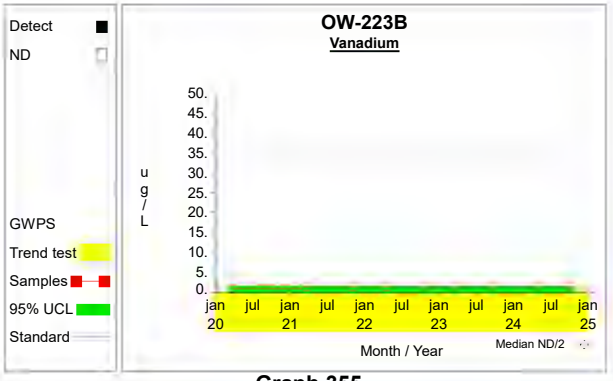
Graph 352



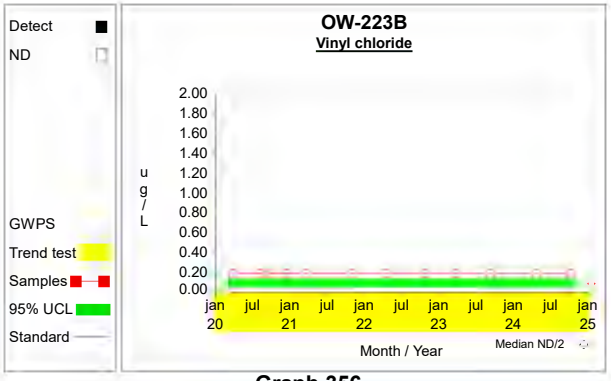
Graph 353



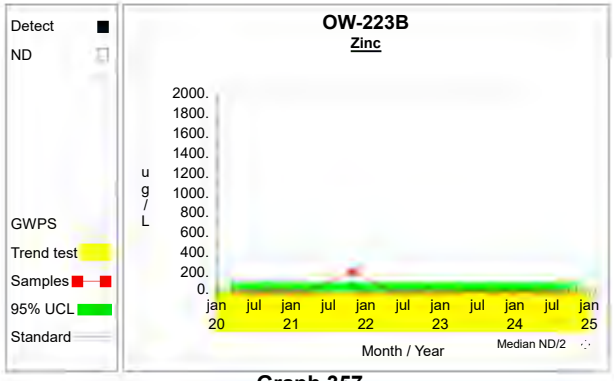
Graph 354



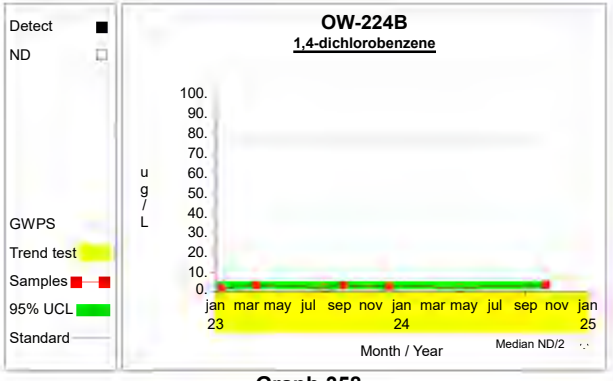
Graph 355



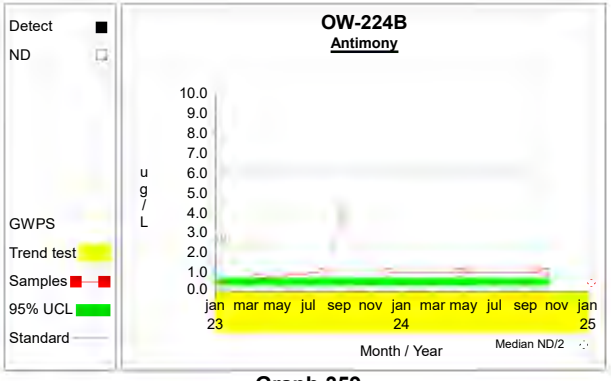
Graph 356



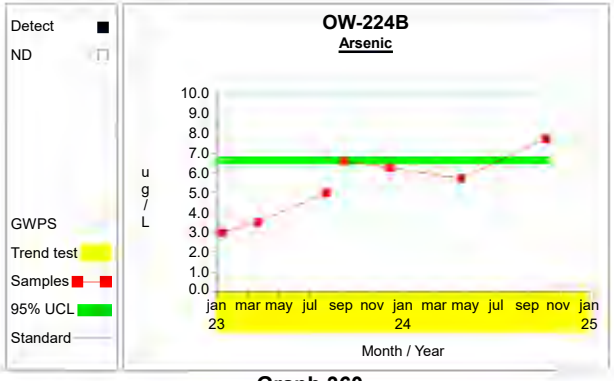
Graph 357



Graph 358

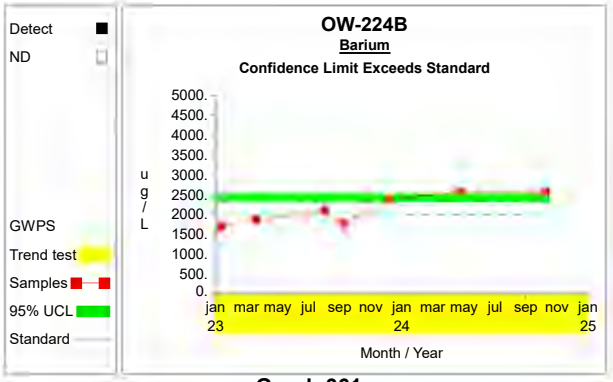


Graph 359

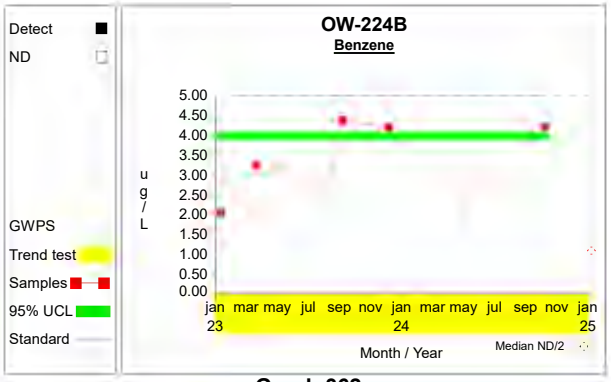


Graph 360

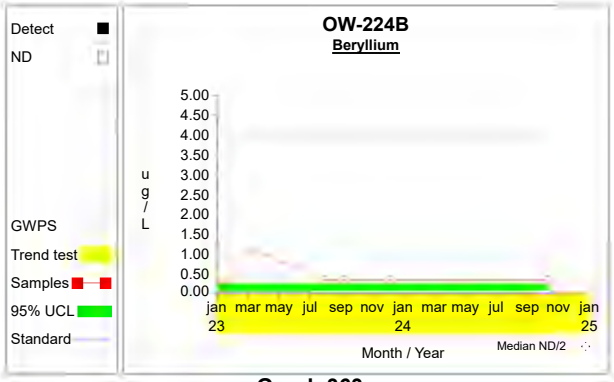
Confidence Limits (Assessment)



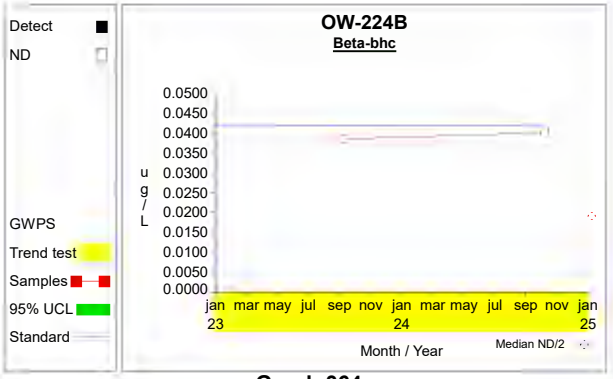
Graph 361



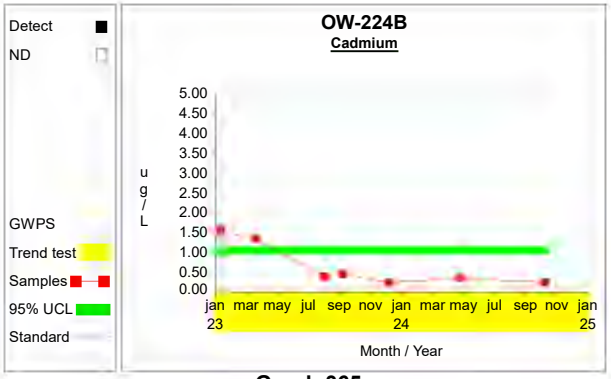
Graph 362



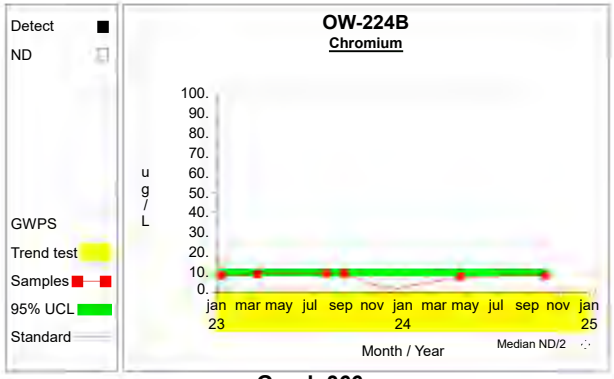
Graph 363



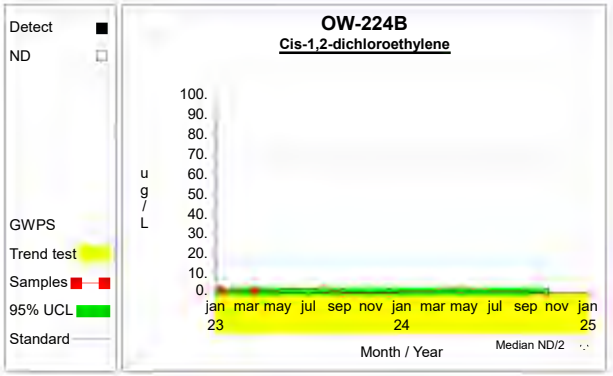
Graph 364



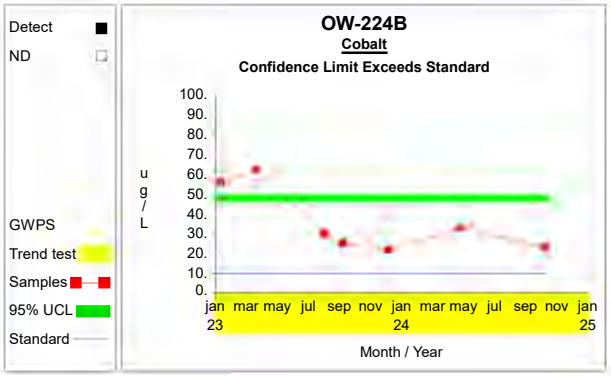
Graph 365



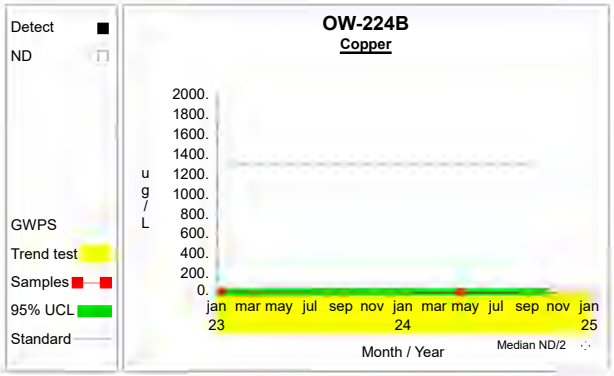
Graph 366



Graph 367

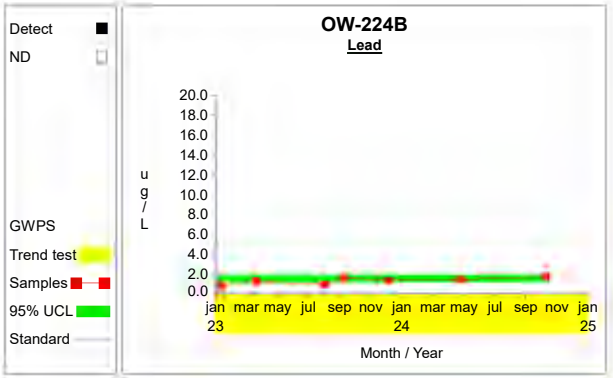


Graph 368

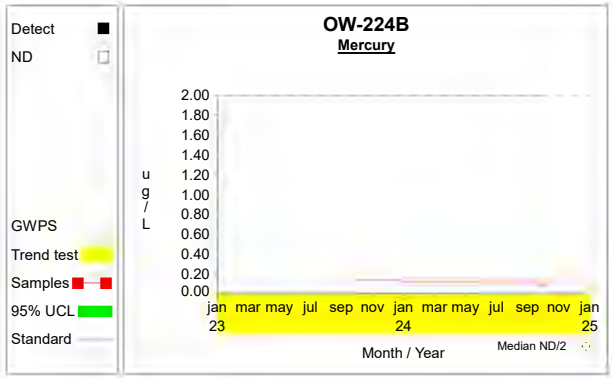


Graph 369

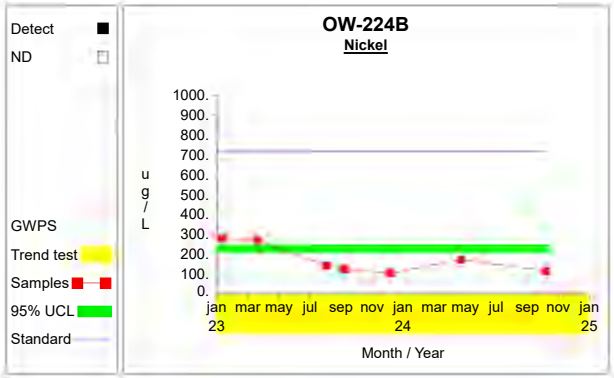
Confidence Limits (Assessment)



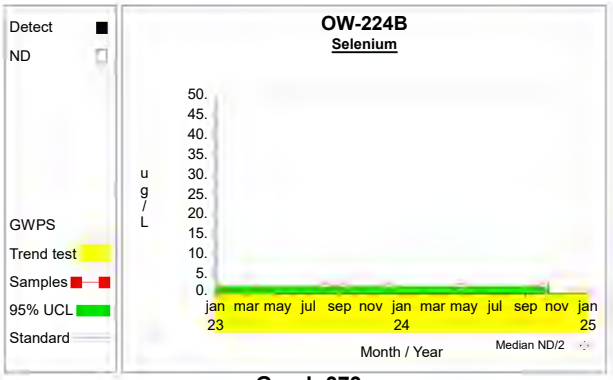
Graph 370



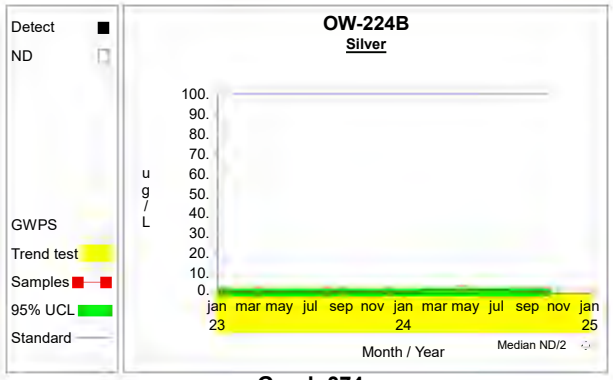
Graph 371



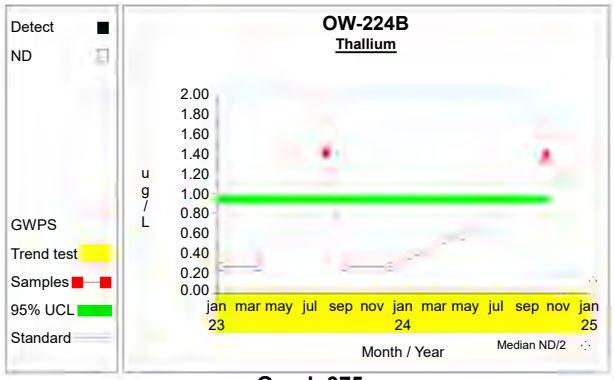
Graph 372



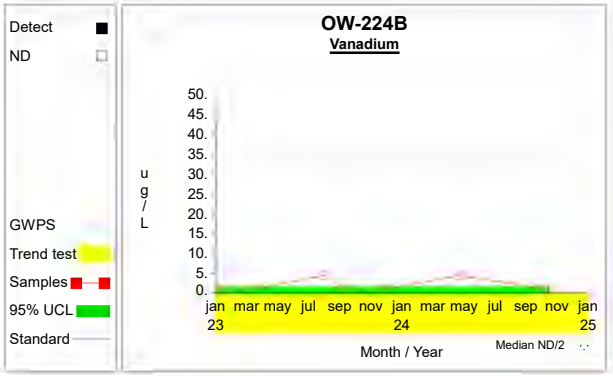
Graph 373



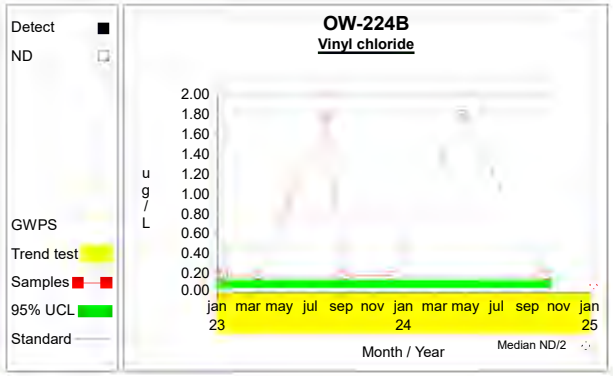
Graph 374



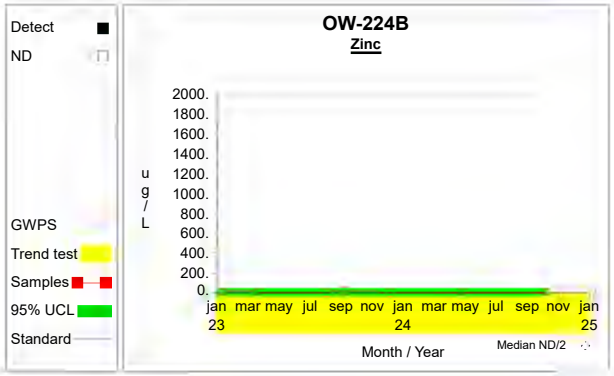
Graph 375



Graph 376

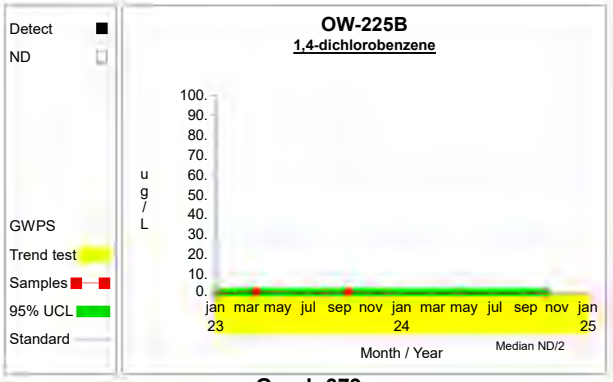


Graph 377

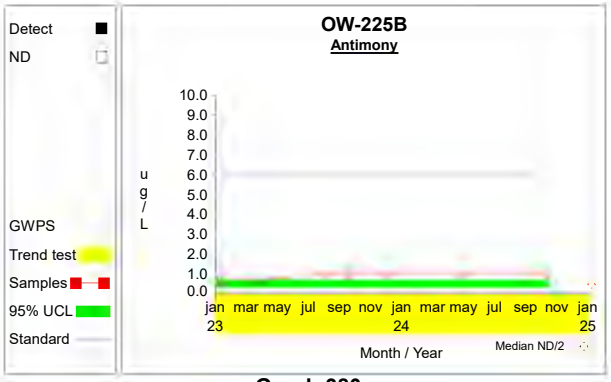


Graph 378

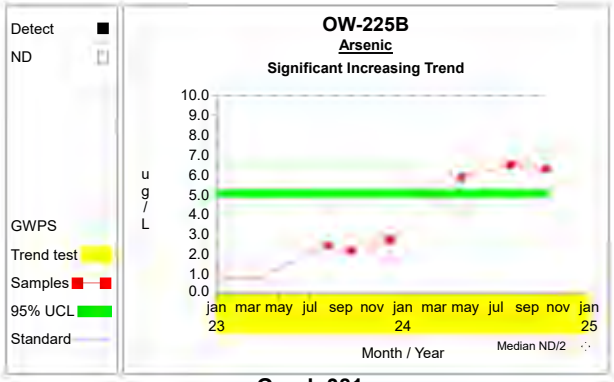
Confidence Limits (Assessment)



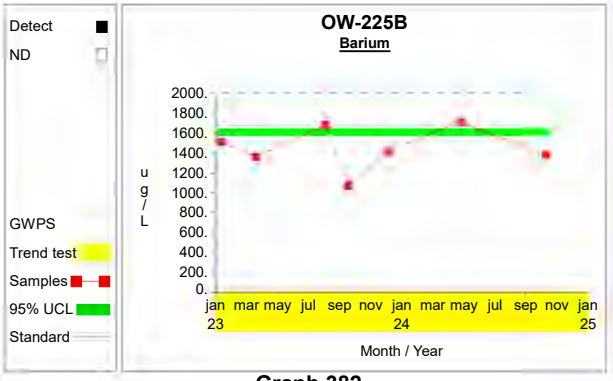
Graph 379



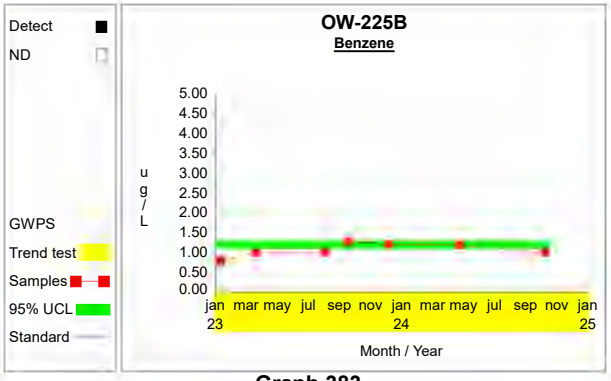
Graph 380



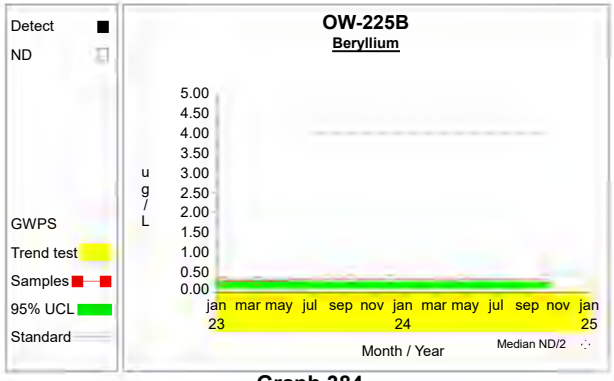
Graph 381



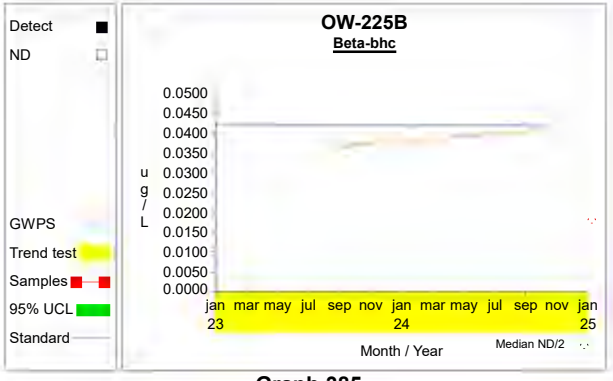
Graph 382



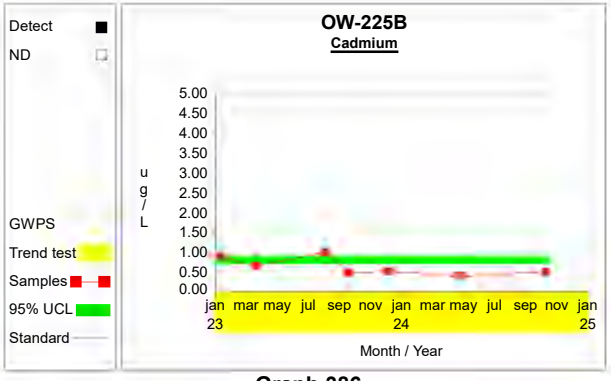
Graph 383



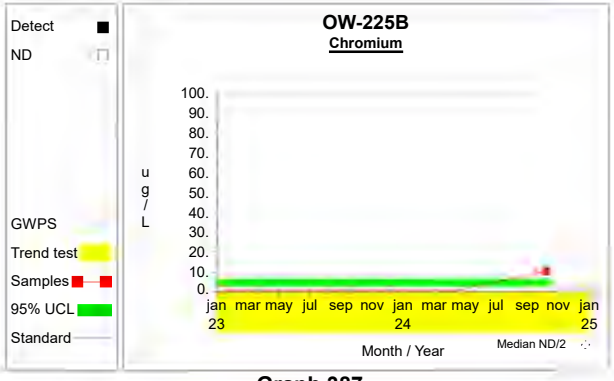
Graph 384



Graph 385

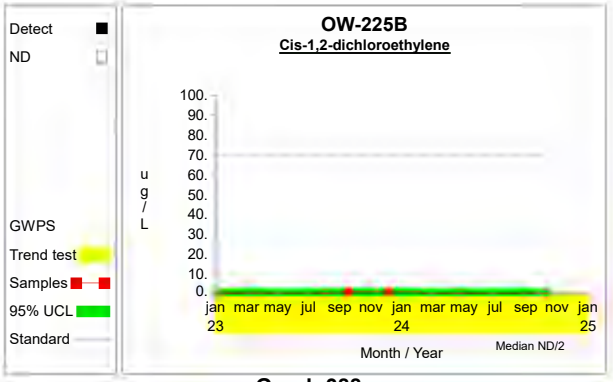


Graph 386

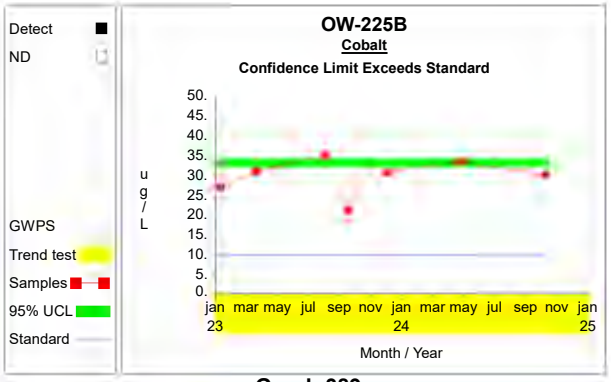


Graph 387

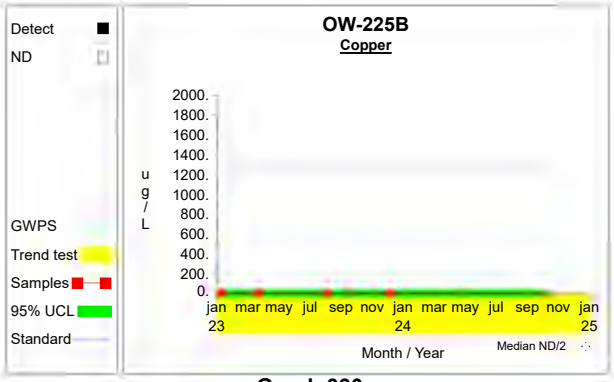
Confidence Limits (Assessment)



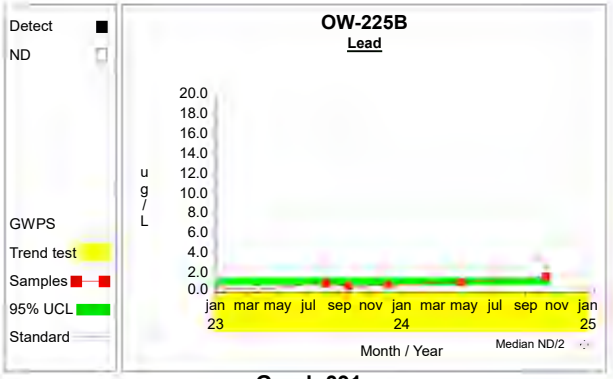
Graph 388



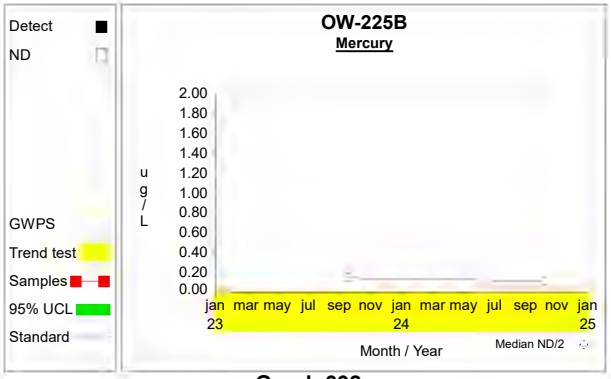
Graph 389



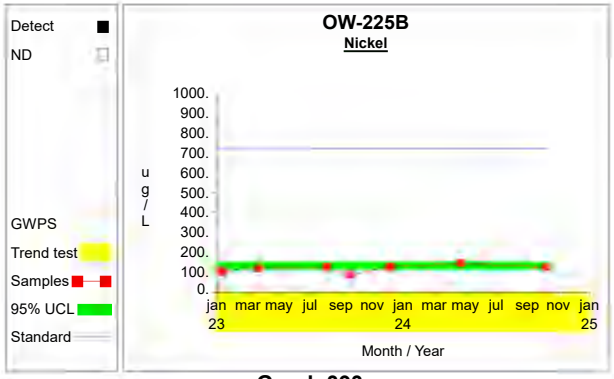
Graph 390



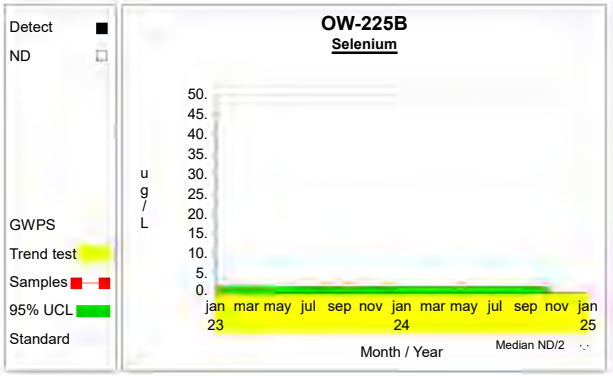
Graph 391



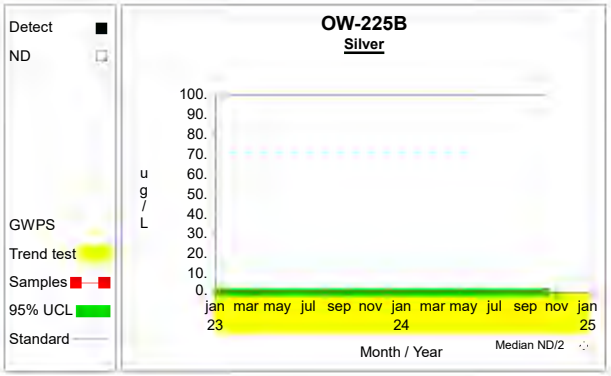
Graph 392



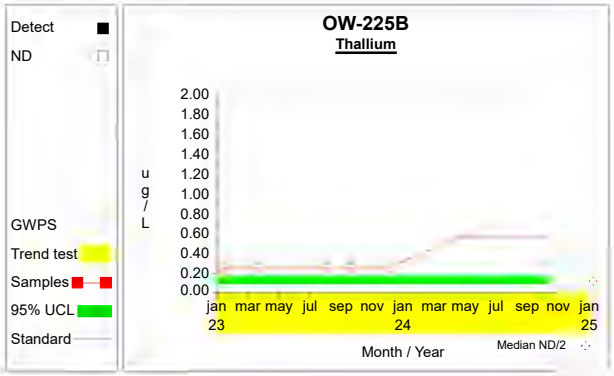
Graph 393



Graph 394

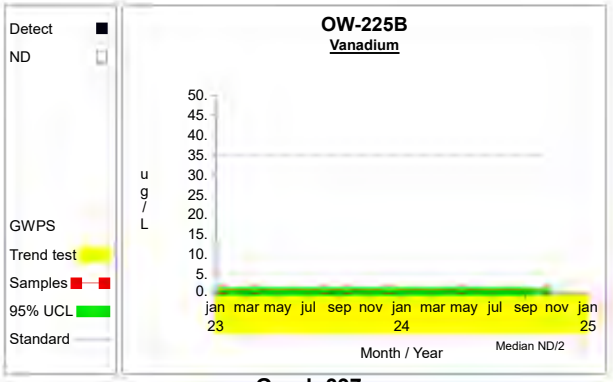


Graph 395

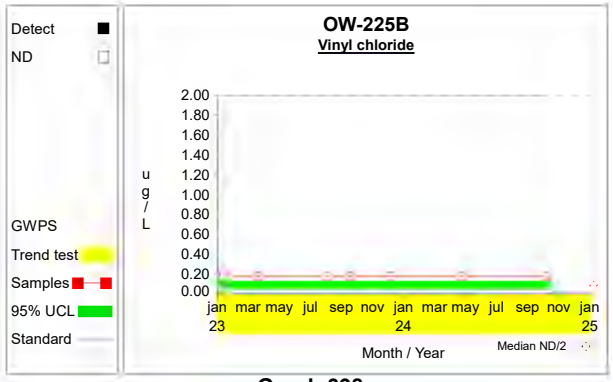


Graph 396

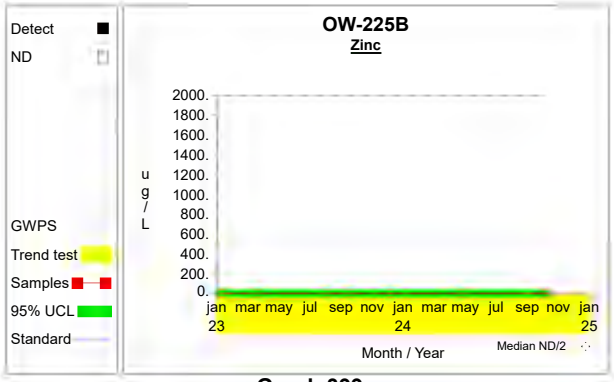
Confidence Limits (Assessment)



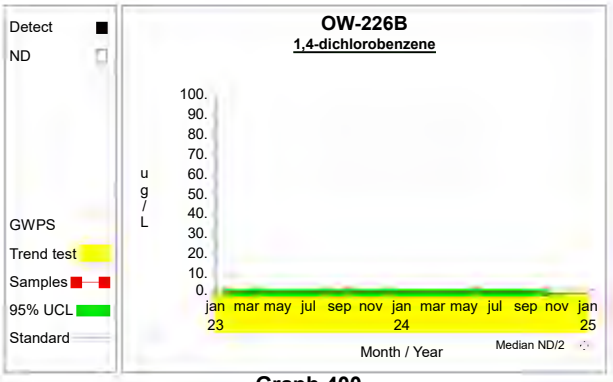
Graph 397



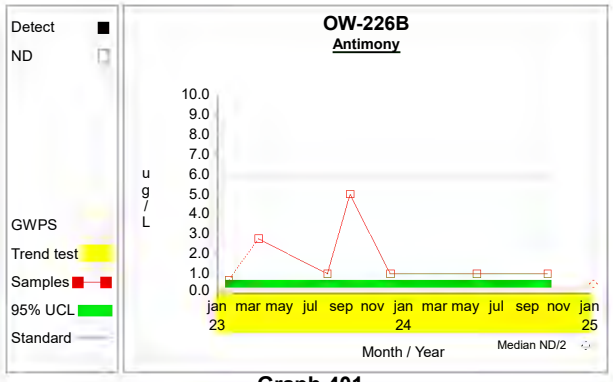
Graph 398



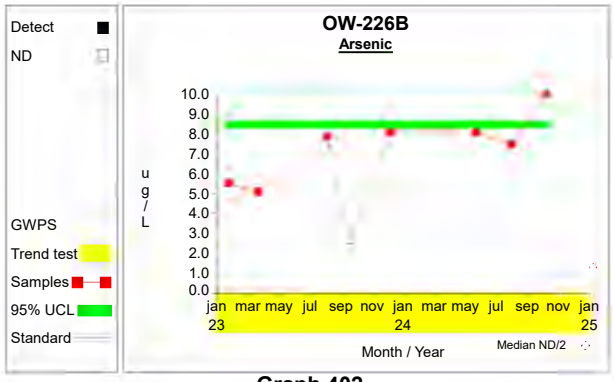
Graph 399



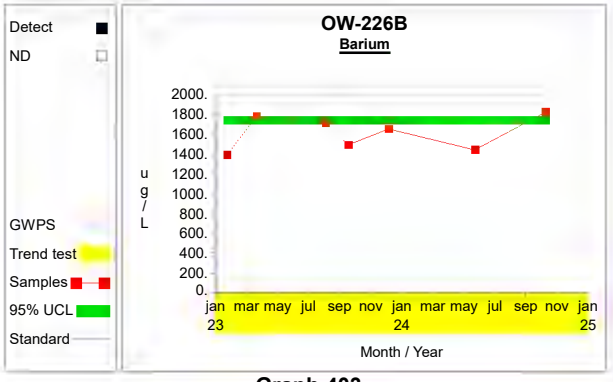
Graph 400



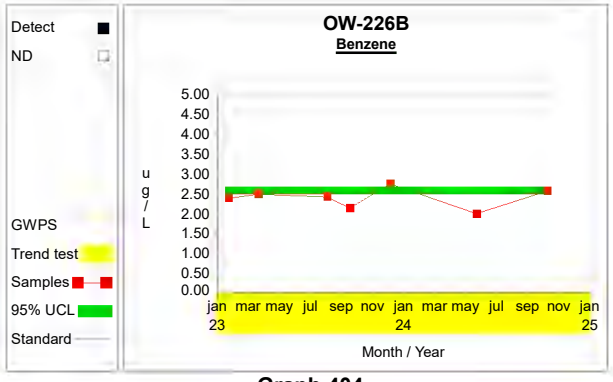
Graph 401



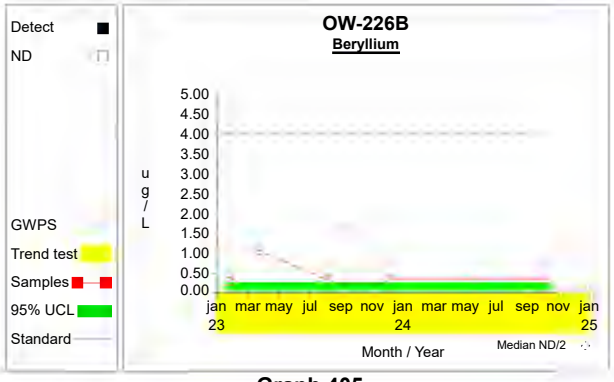
Graph 402



Graph 403

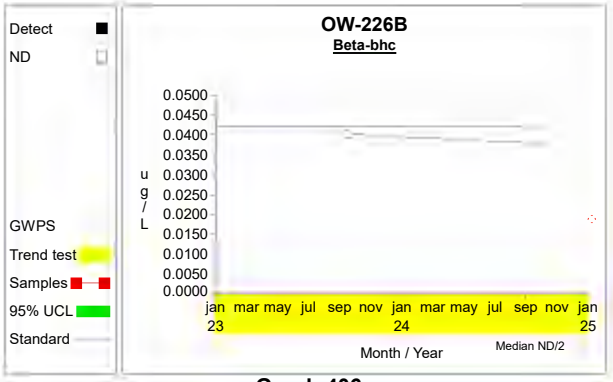


Graph 404

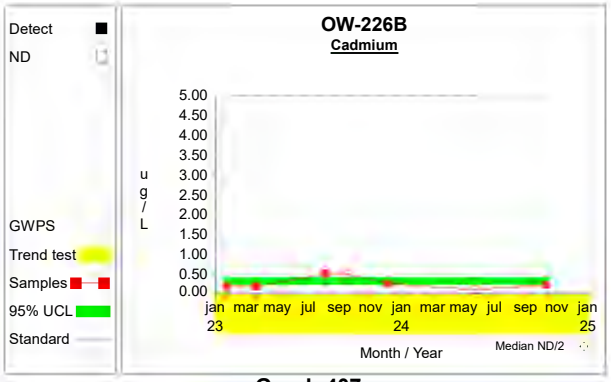


Graph 405

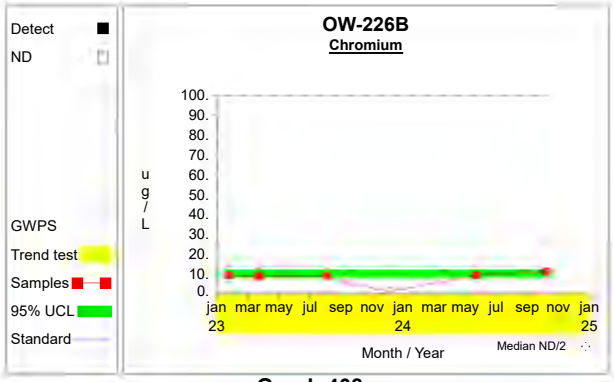
Confidence Limits (Assessment)



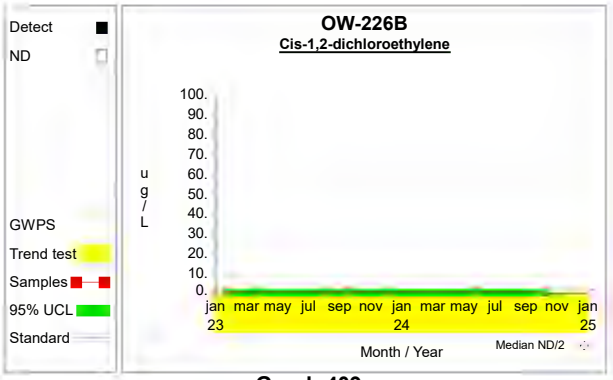
Graph 406



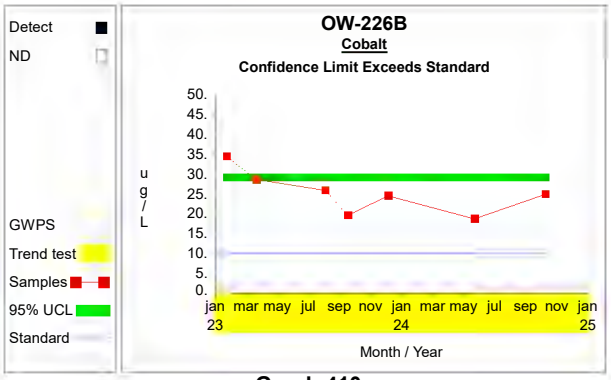
Graph 407



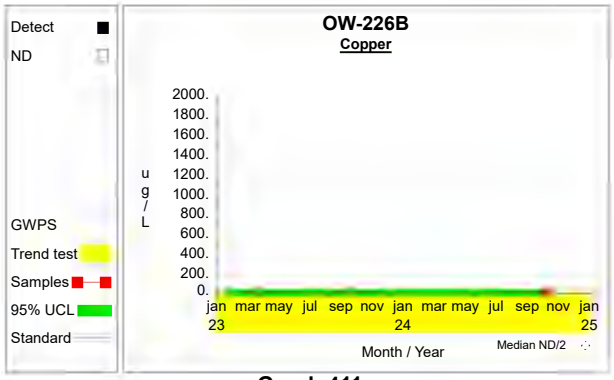
Graph 408



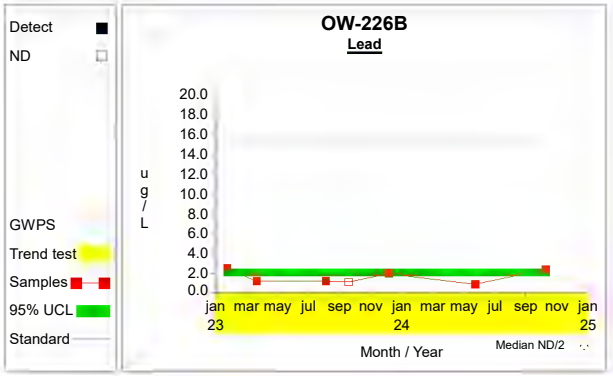
Graph 409



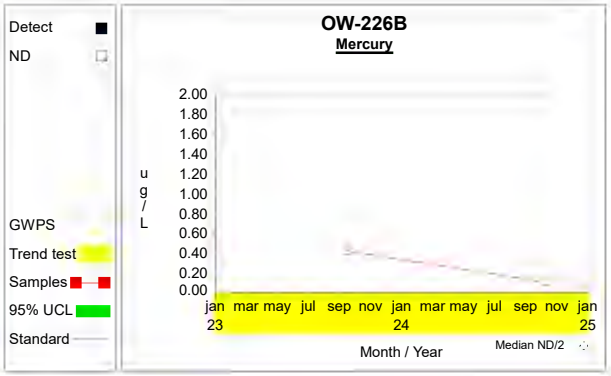
Graph 410



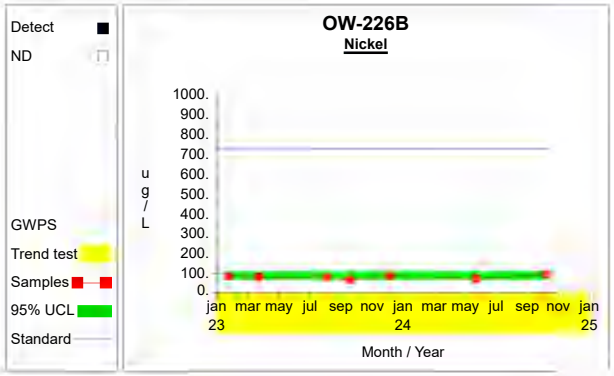
Graph 411



Graph 412

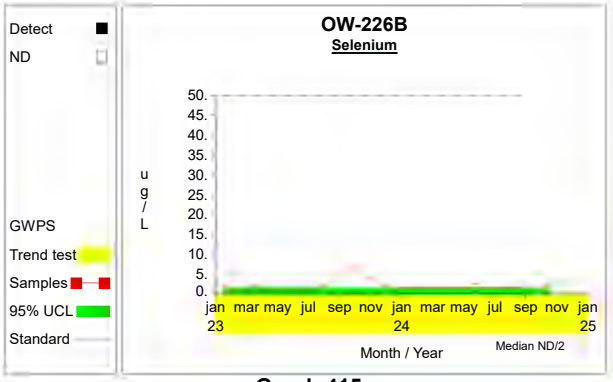


Graph 413

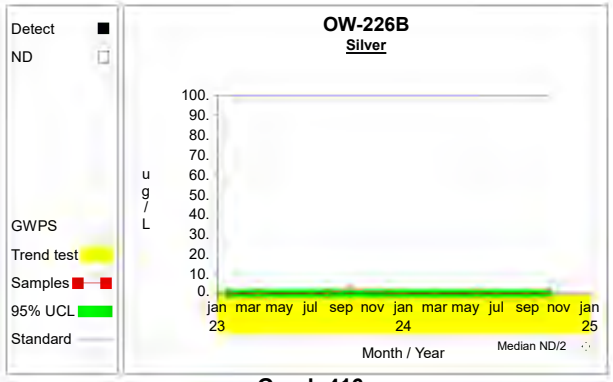


Graph 414

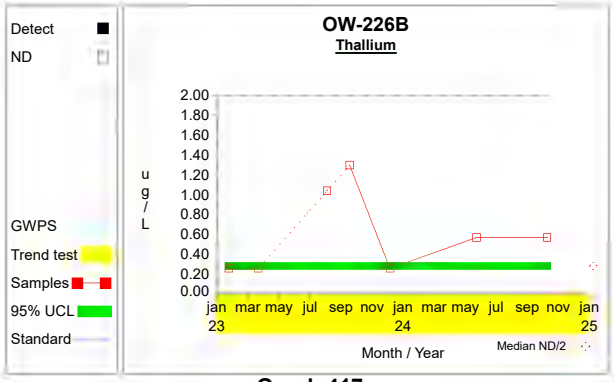
Confidence Limits (Assessment)



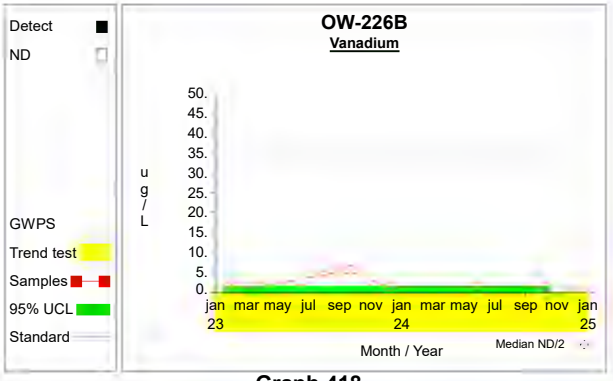
Graph 415



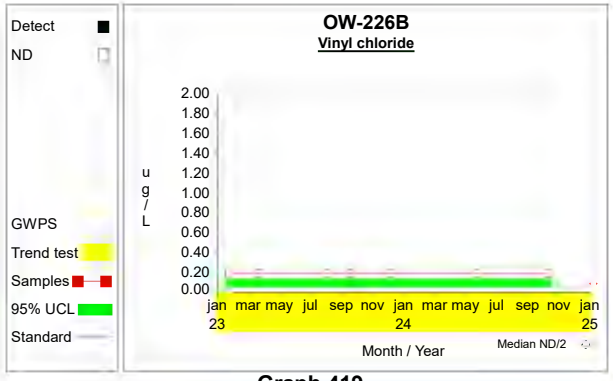
Graph 416



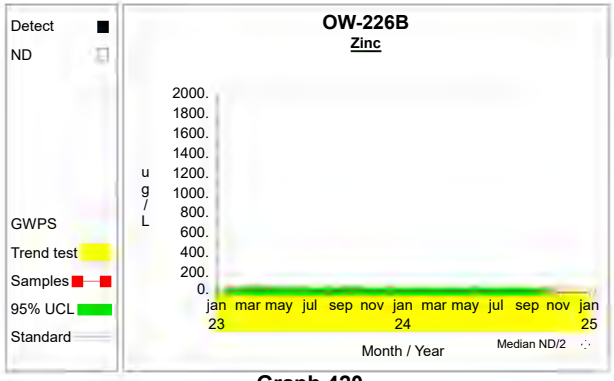
Graph 417



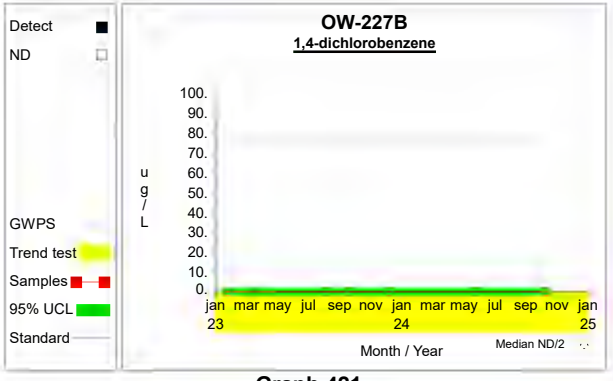
Graph 418



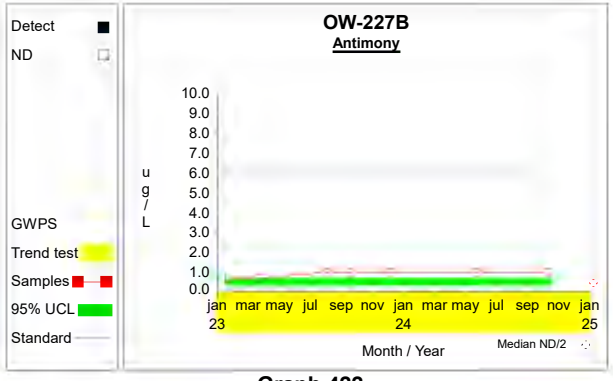
Graph 419



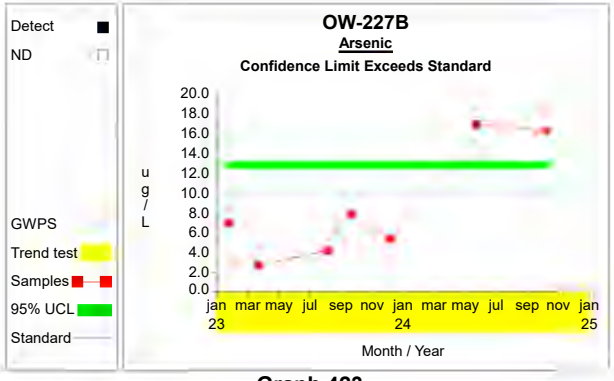
Graph 420



Graph 421

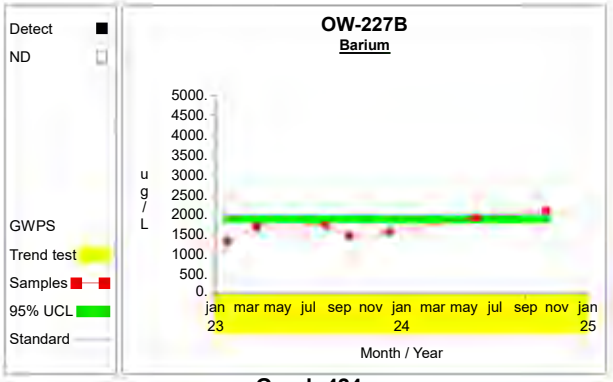


Graph 422

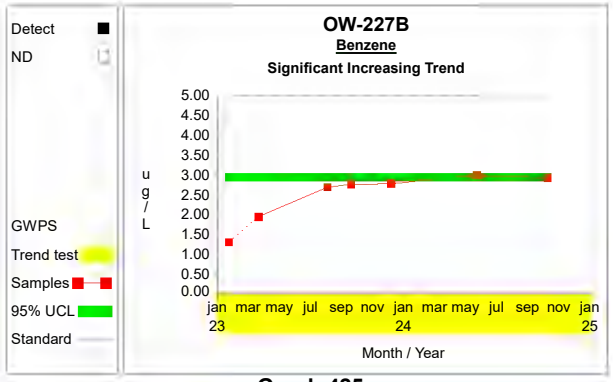


Graph 423

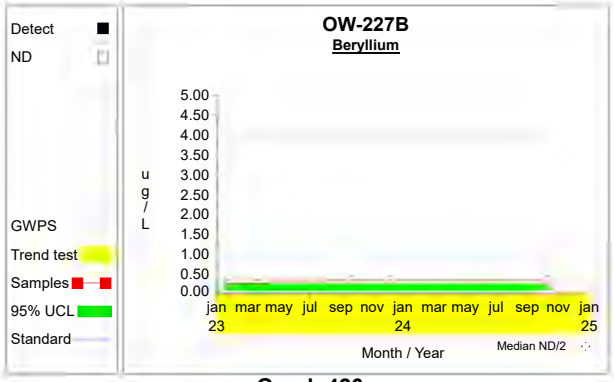
Confidence Limits (Assessment)



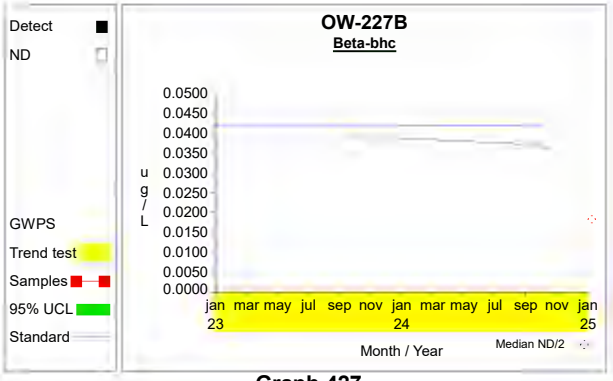
Graph 424



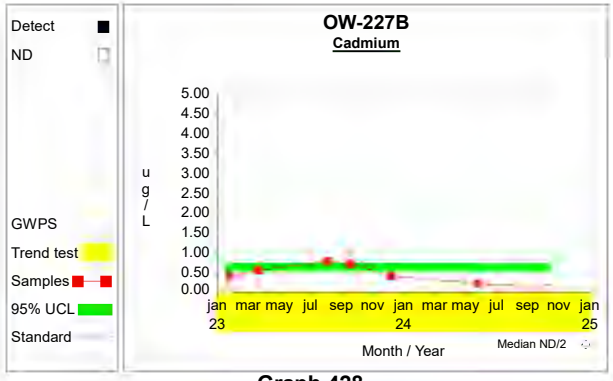
Graph 425



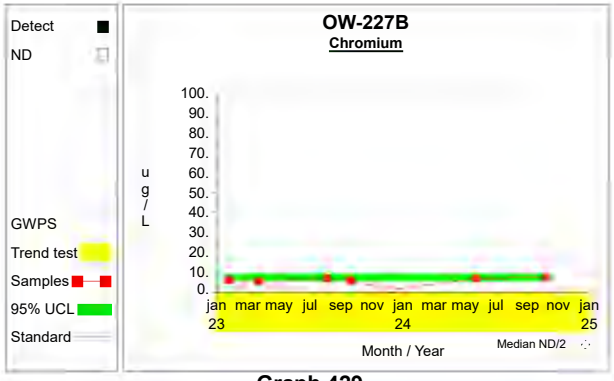
Graph 426



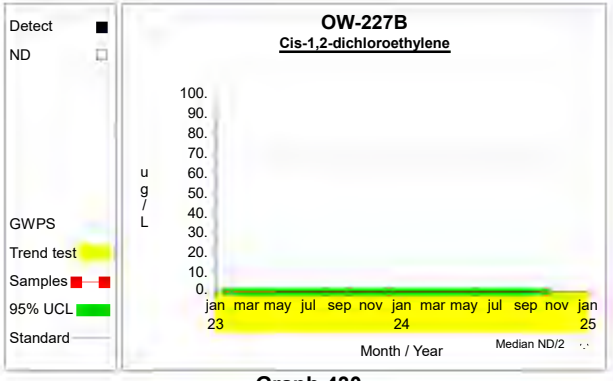
Graph 427



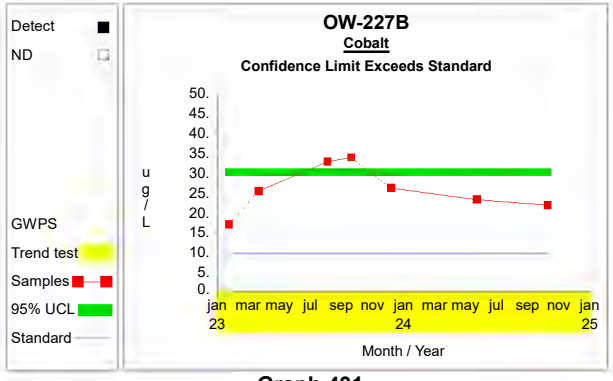
Graph 428



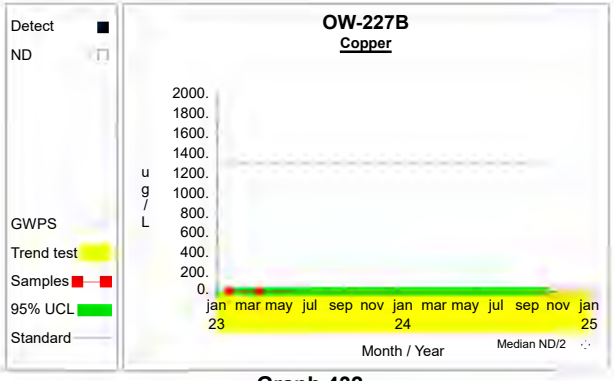
Graph 429



Graph 430

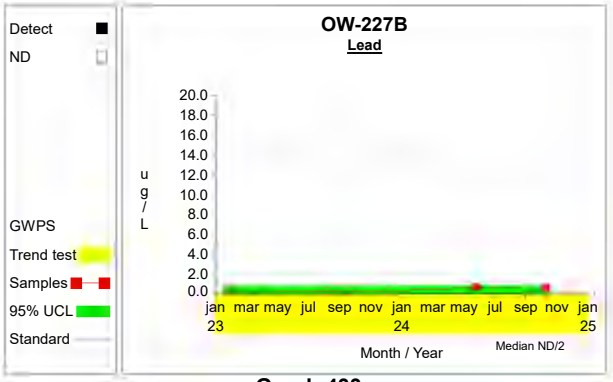


Graph 431

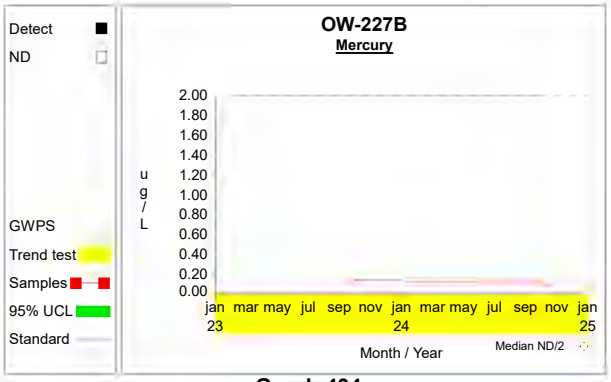


Graph 432

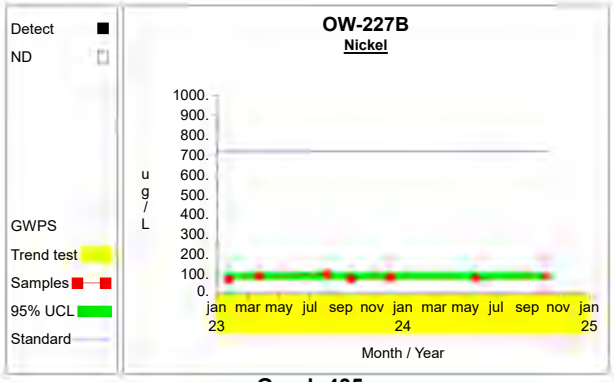
Confidence Limits (Assessment)



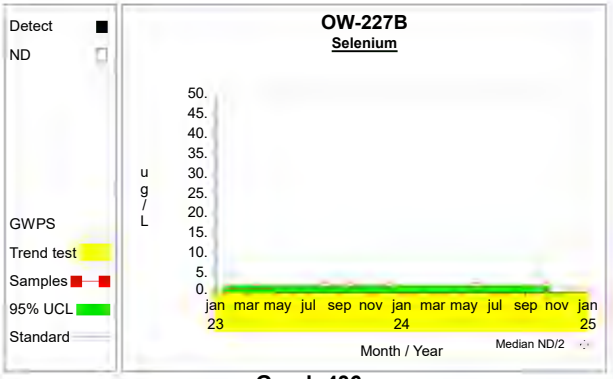
Graph 433



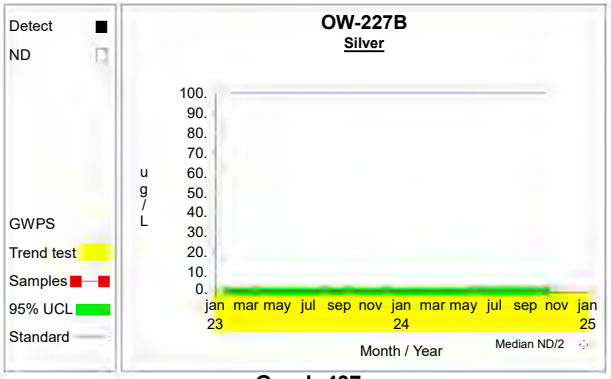
Graph 434



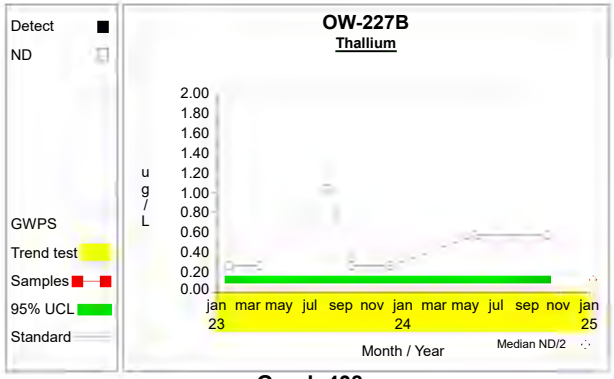
Graph 435



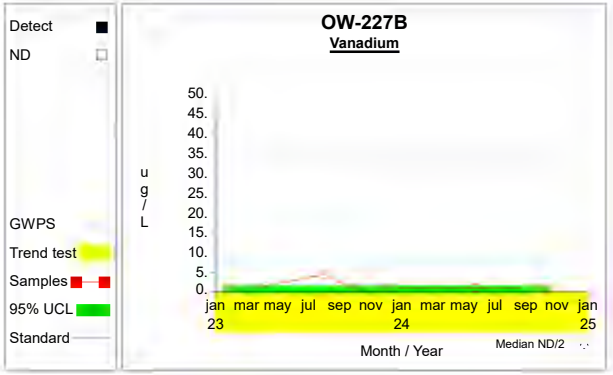
Graph 436



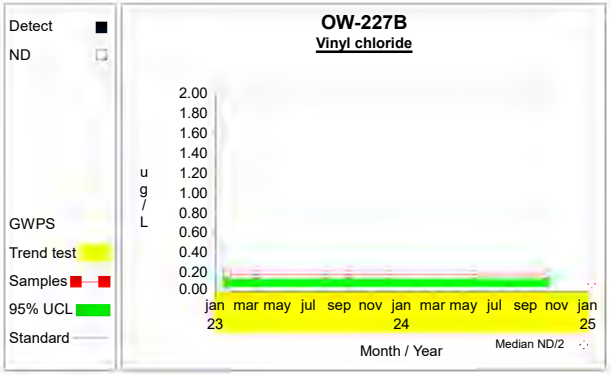
Graph 437



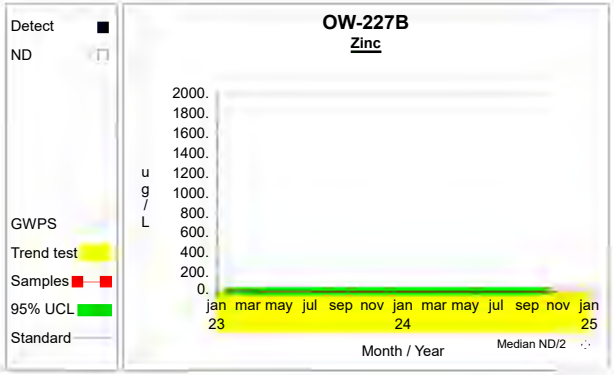
Graph 438



Graph 439

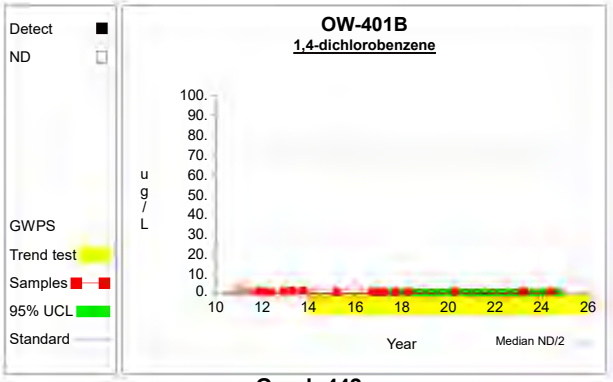


Graph 440

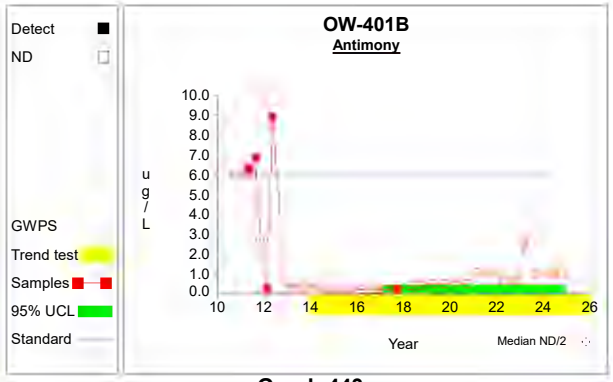


Graph 441

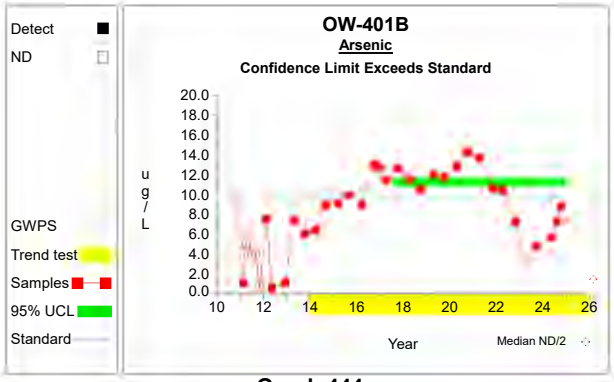
Confidence Limits (Assessment)



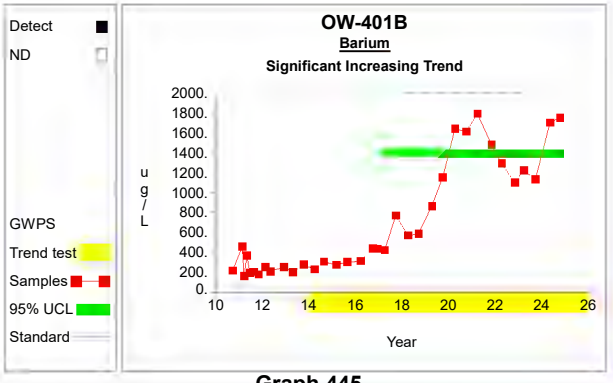
Graph 442



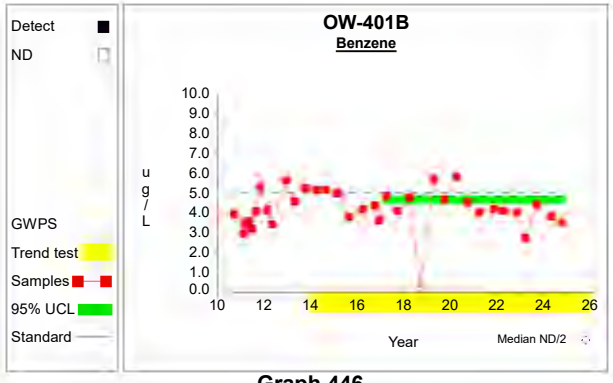
Graph 443



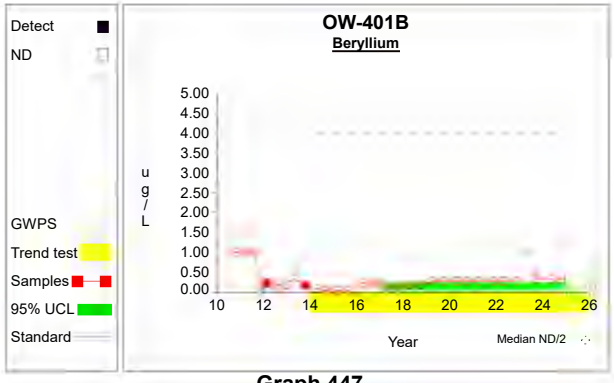
Graph 444



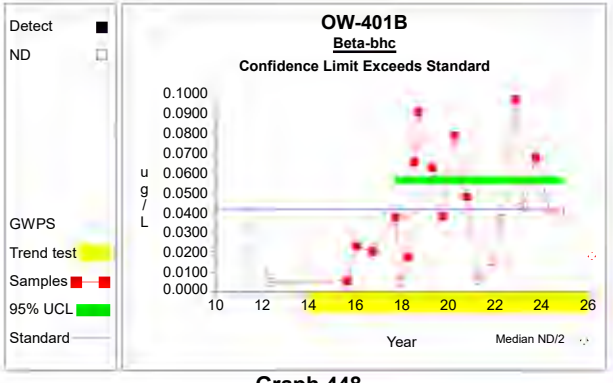
Graph 445



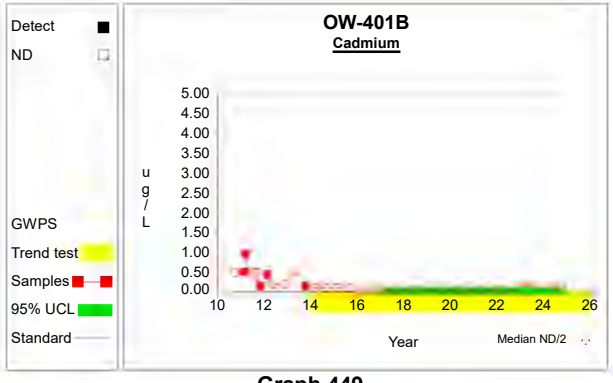
Graph 446



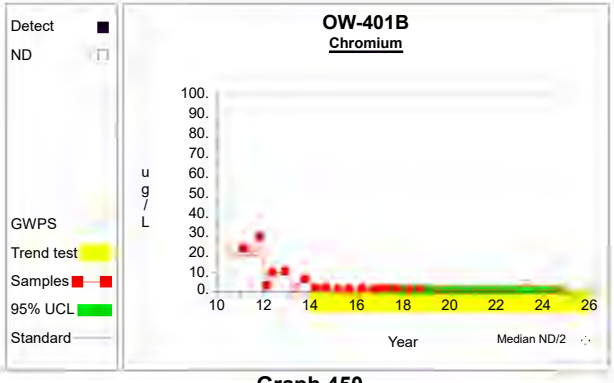
Graph 447



Graph 448

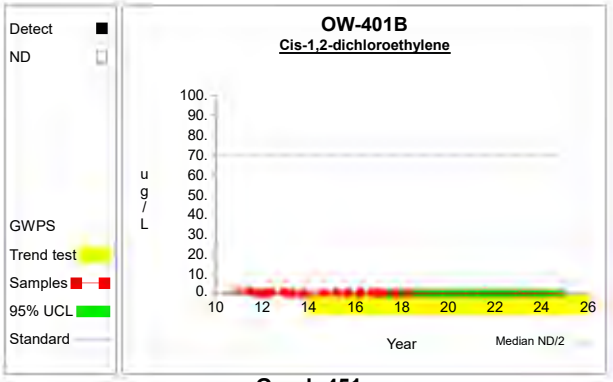


Graph 449

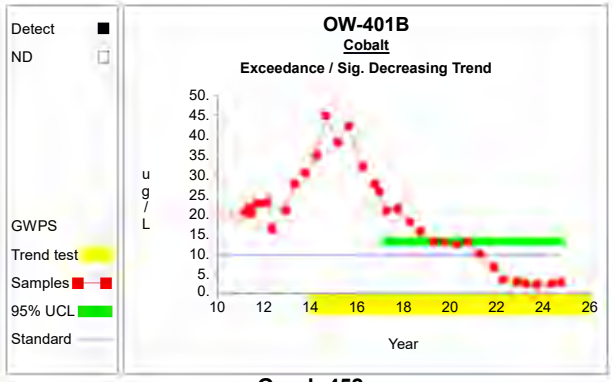


Graph 450

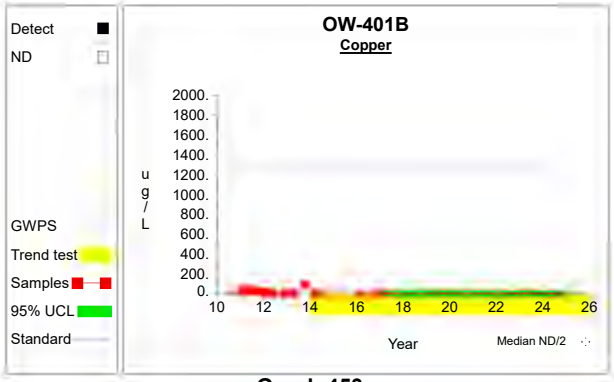
Confidence Limits (Assessment)



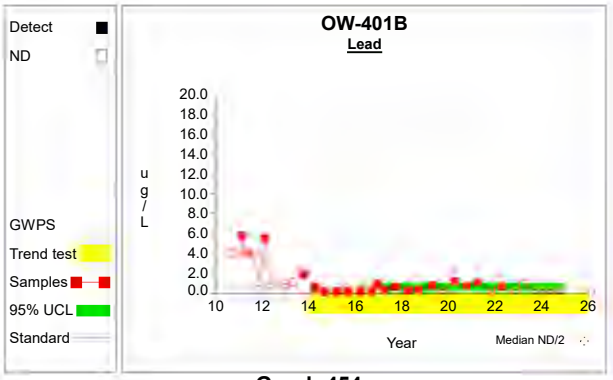
Graph 451



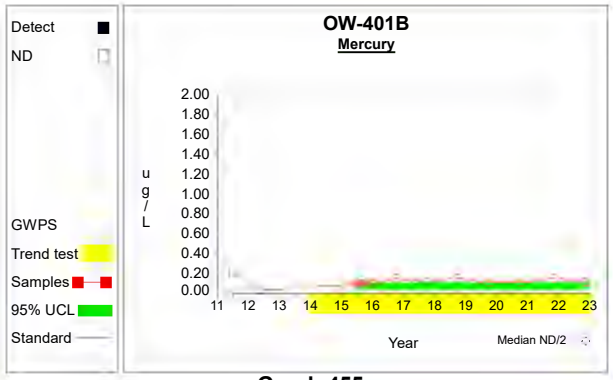
Graph 452



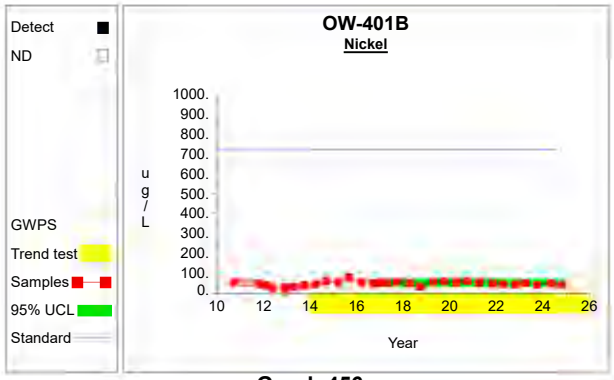
Graph 453



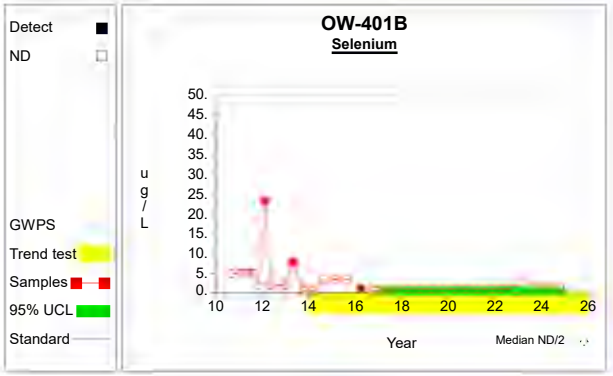
Graph 454



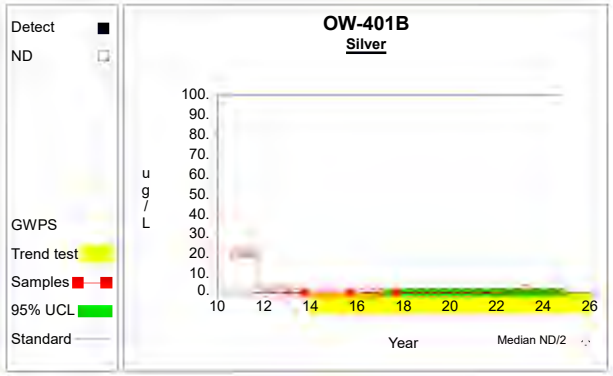
Graph 455



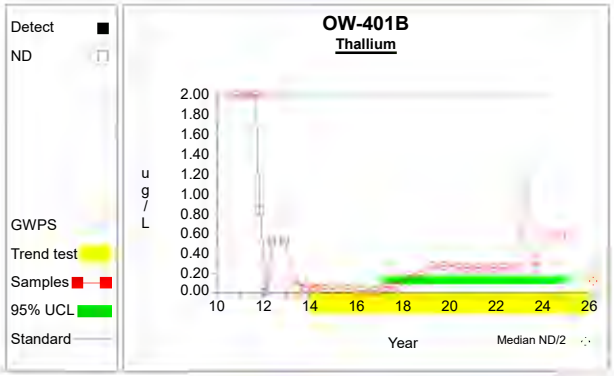
Graph 456



Graph 457

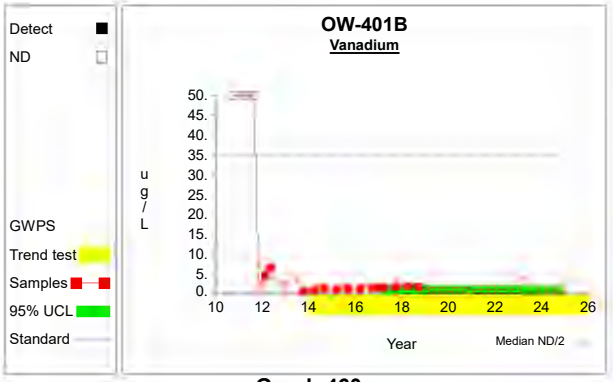


Graph 458

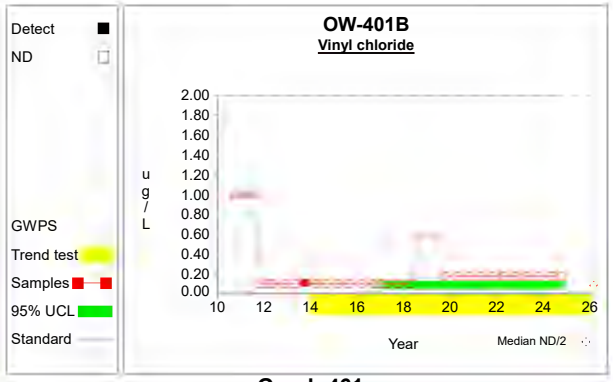


Graph 459

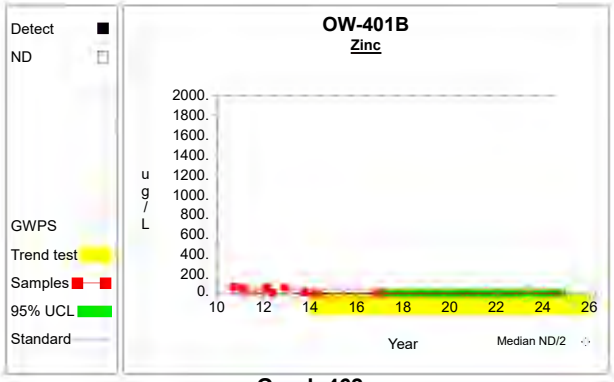
Confidence Limits (Assessment)



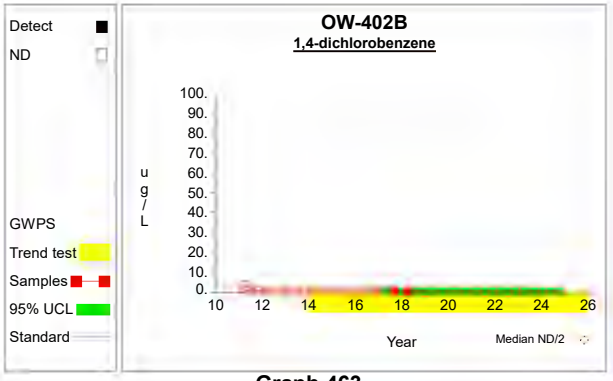
Graph 460



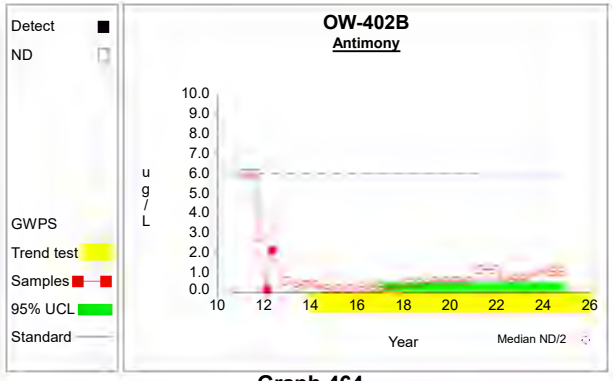
Graph 461



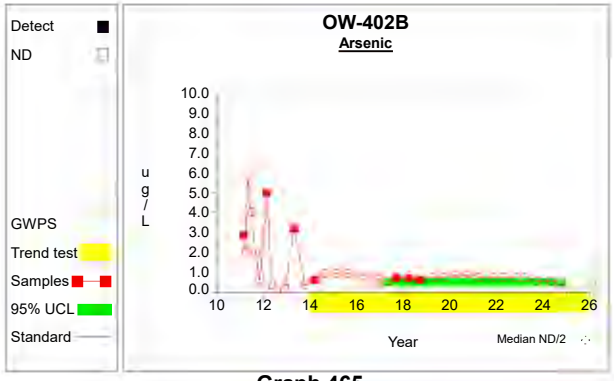
Graph 462



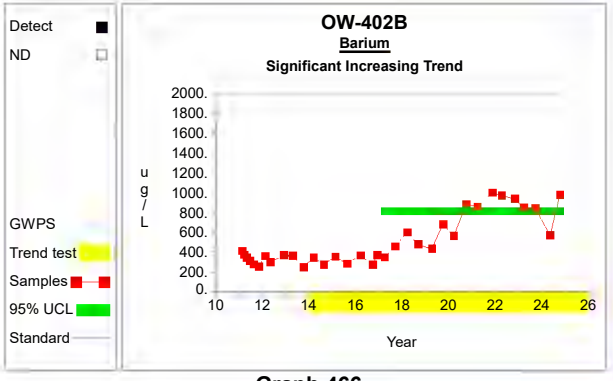
Graph 463



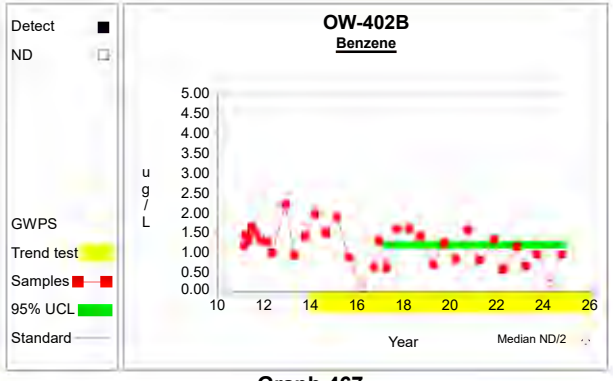
Graph 464



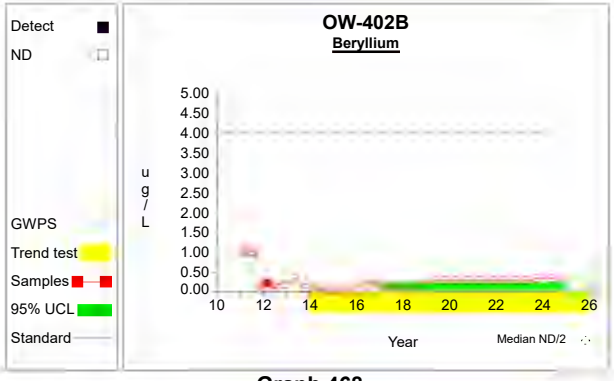
Graph 465



Graph 466

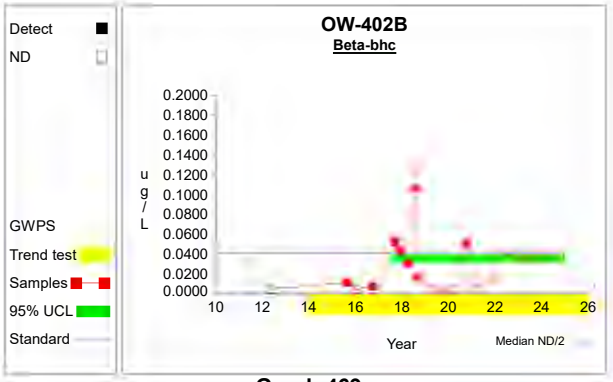


Graph 467

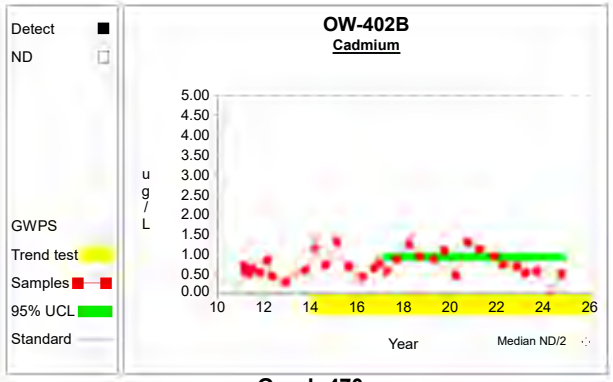


Graph 468

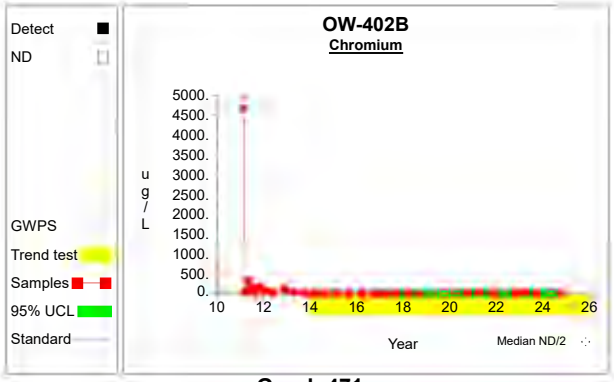
Confidence Limits (Assessment)



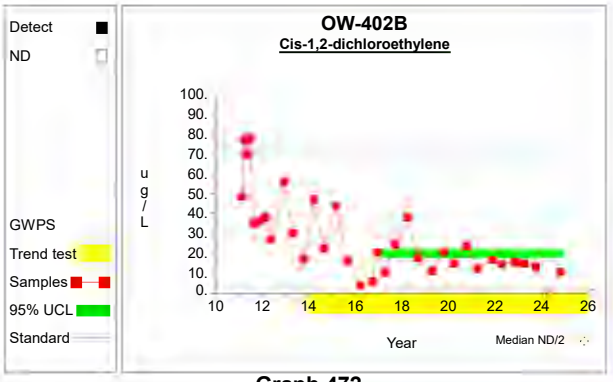
Graph 469



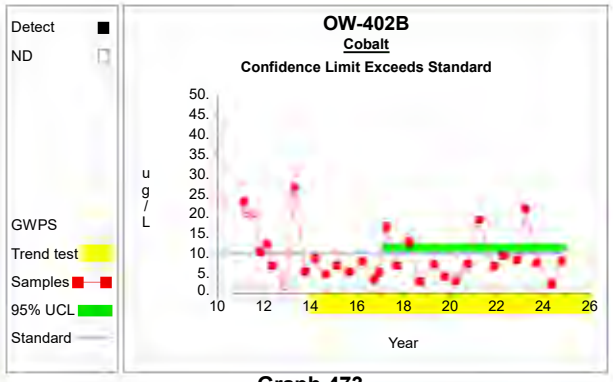
Graph 470



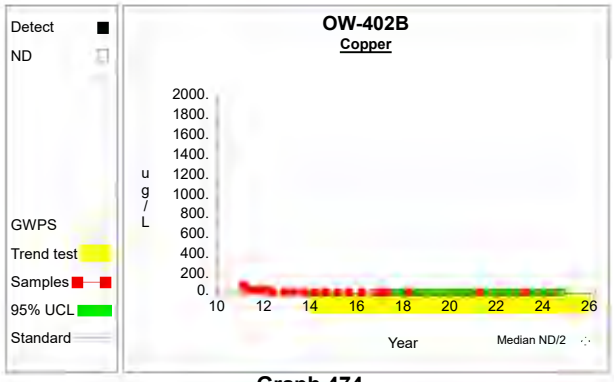
Graph 471



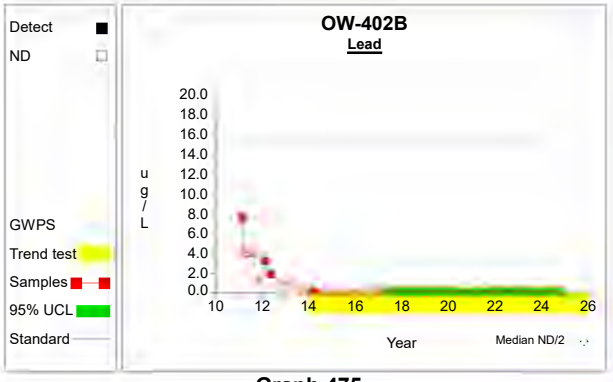
Graph 472



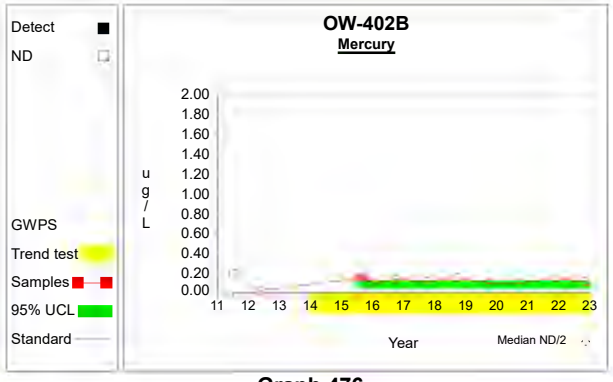
Graph 473



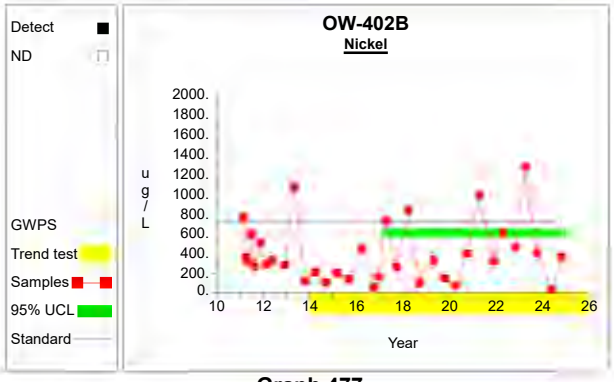
Graph 474



Graph 475

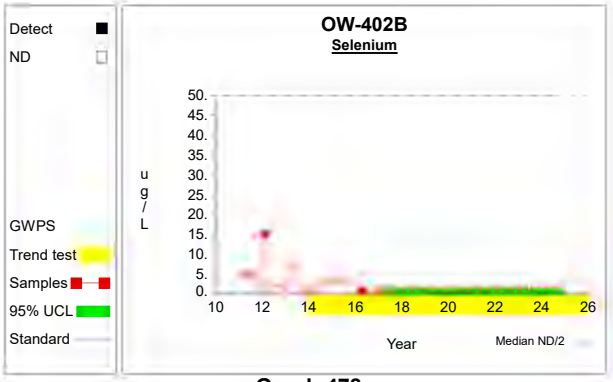


Graph 476

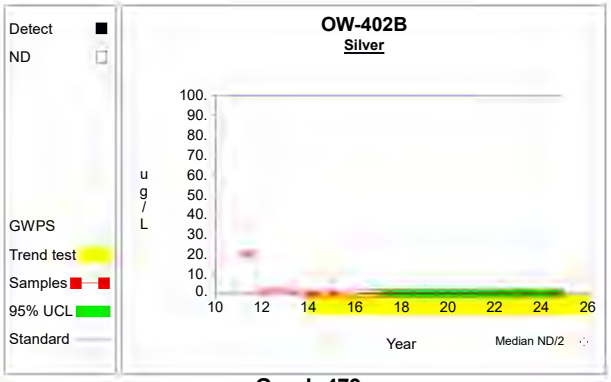


Graph 477

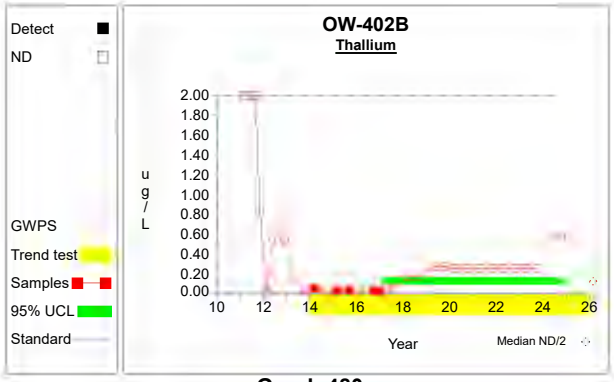
Confidence Limits (Assessment)



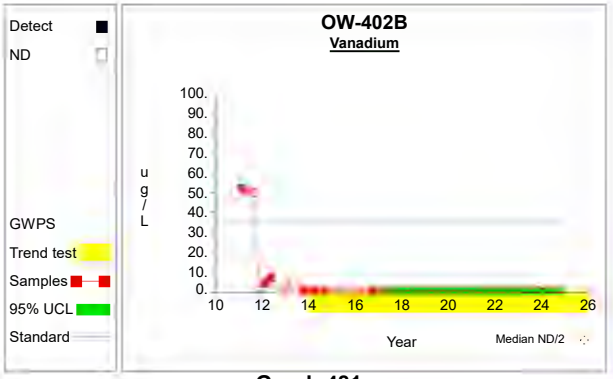
Graph 478



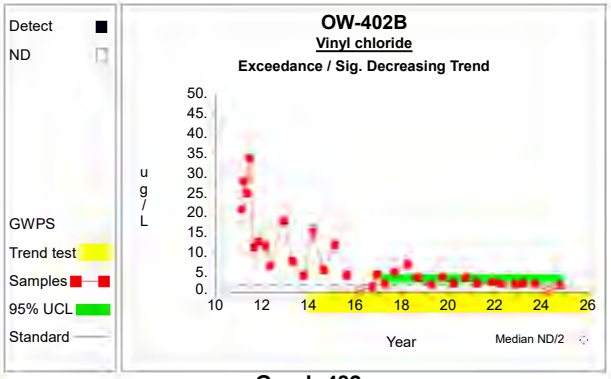
Graph 479



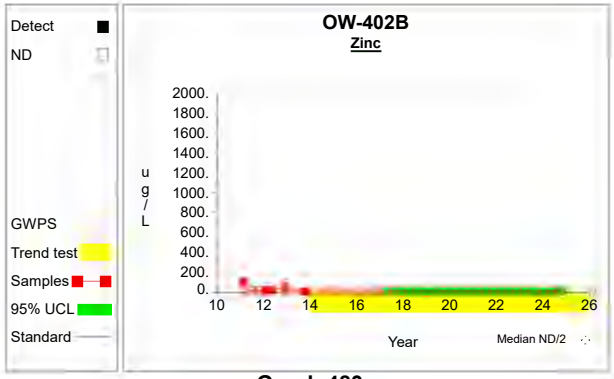
Graph 480



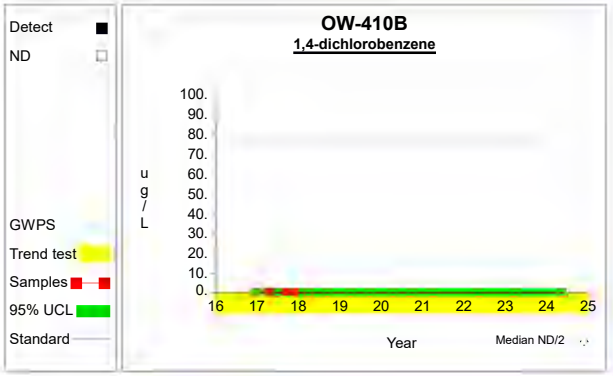
Graph 481



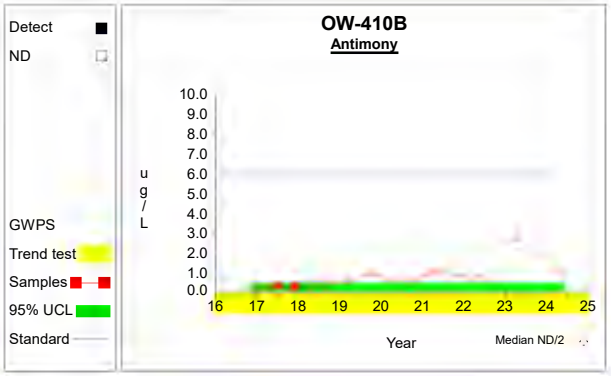
Graph 482



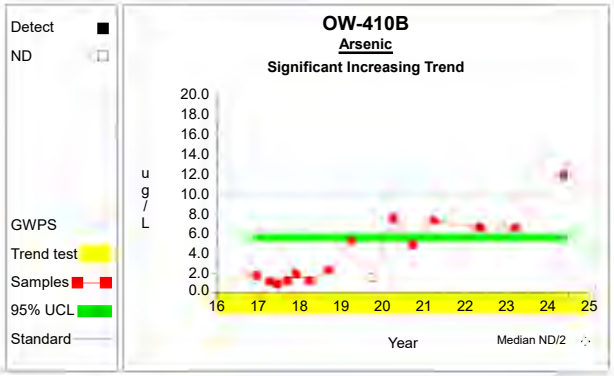
Graph 483



Graph 484

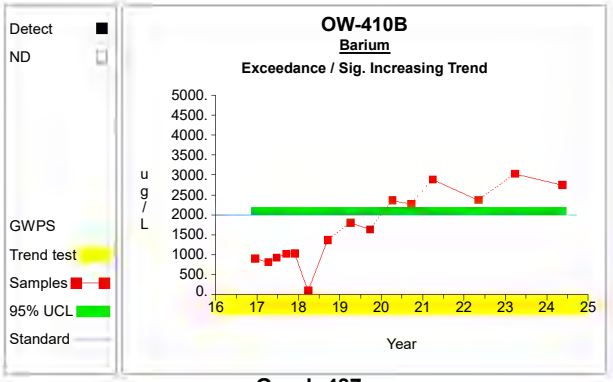


Graph 485

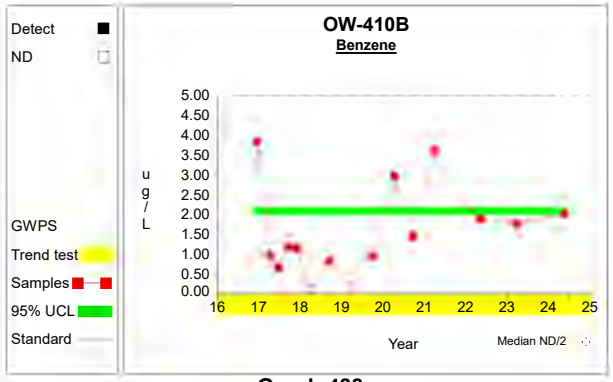


Graph 486

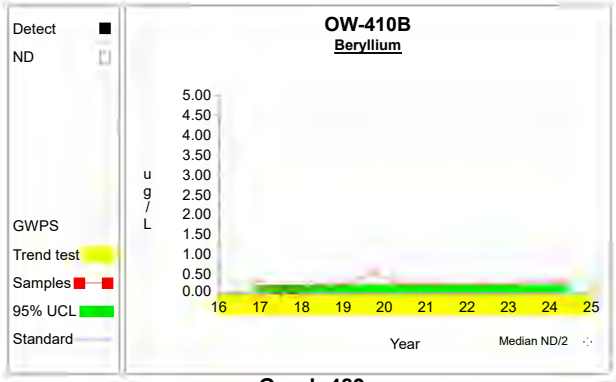
Confidence Limits (Assessment)



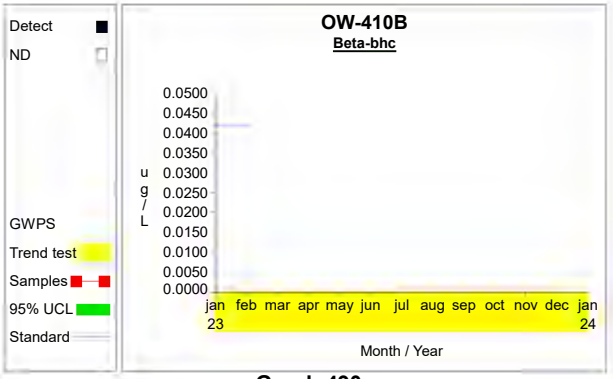
Graph 487



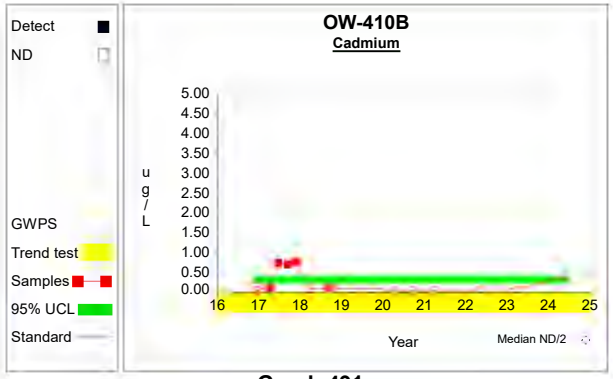
Graph 488



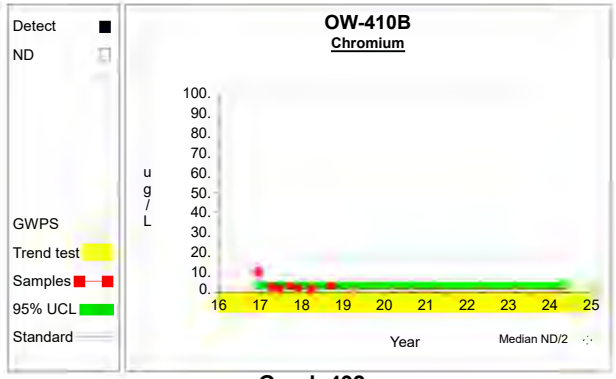
Graph 489



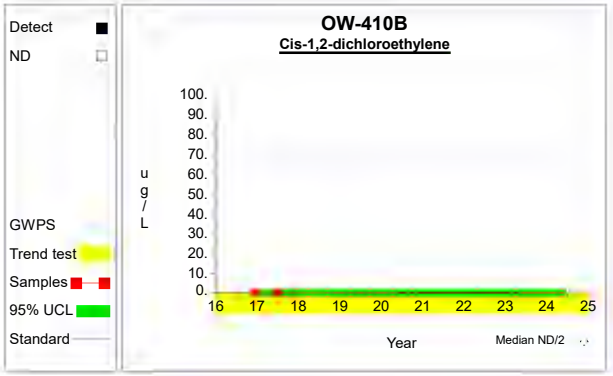
Graph 490



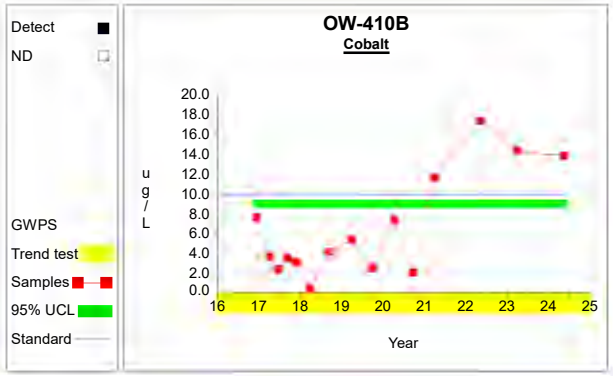
Graph 491



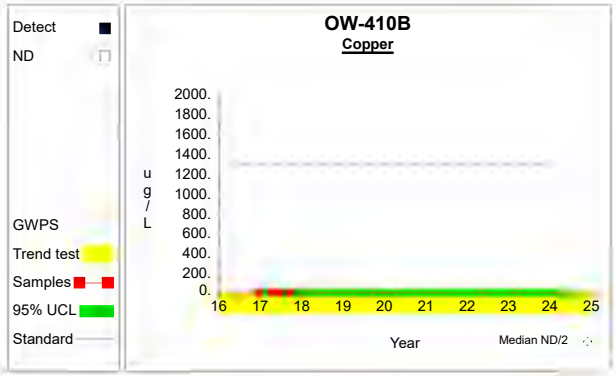
Graph 492



Graph 493

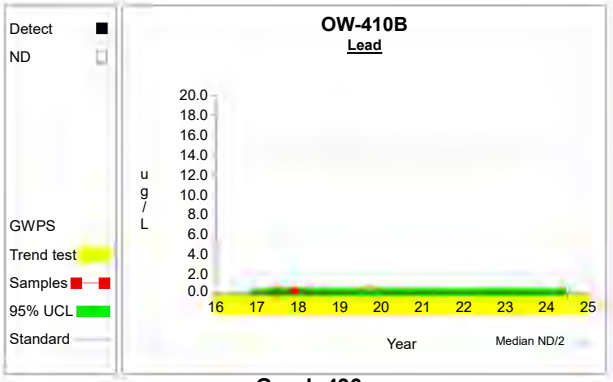


Graph 494

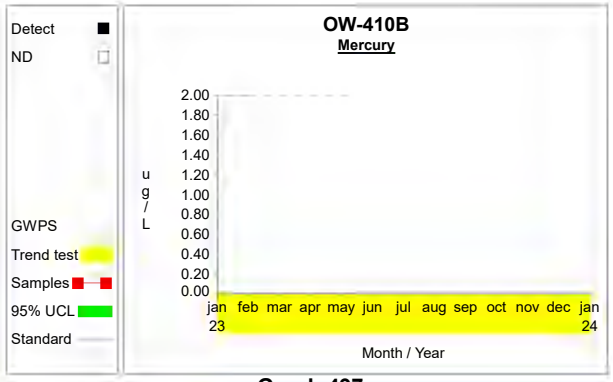


Graph 495

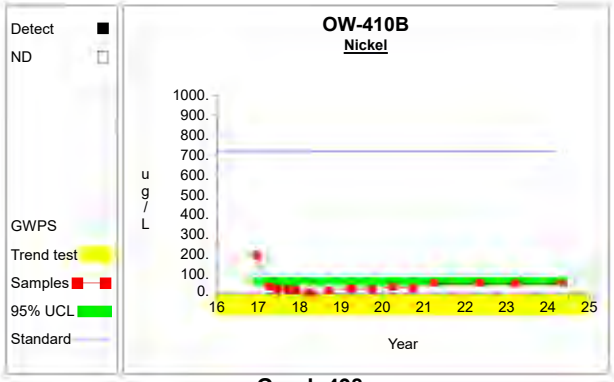
Confidence Limits (Assessment)



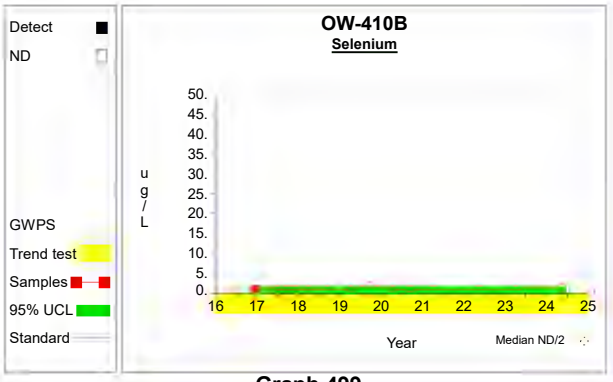
Graph 496



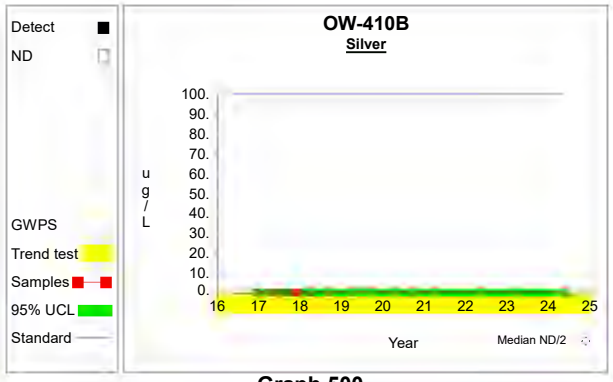
Graph 497



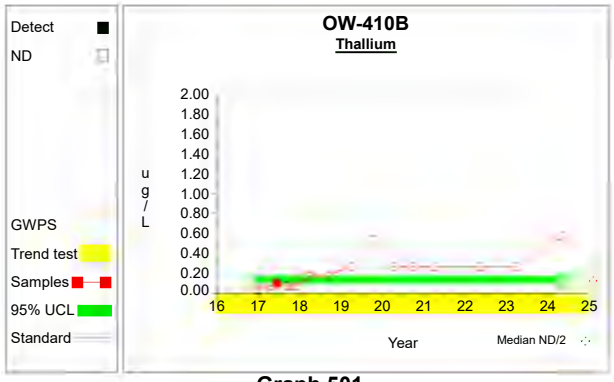
Graph 498



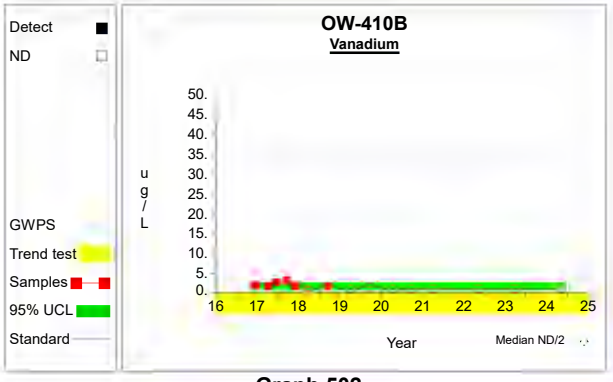
Graph 499



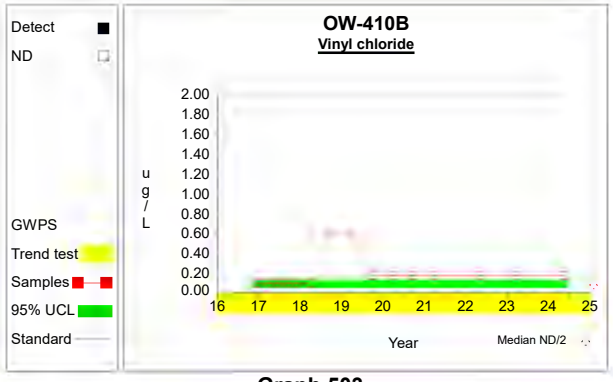
Graph 500



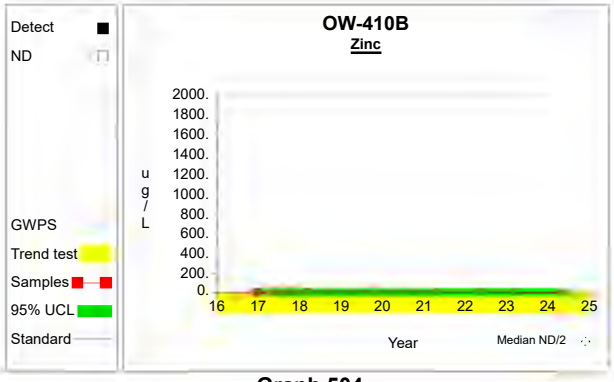
Graph 501



Graph 502

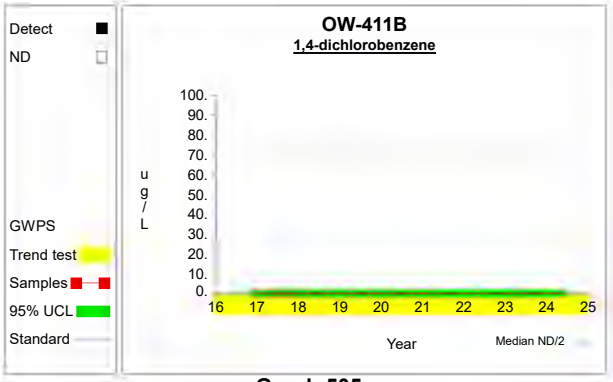


Graph 503

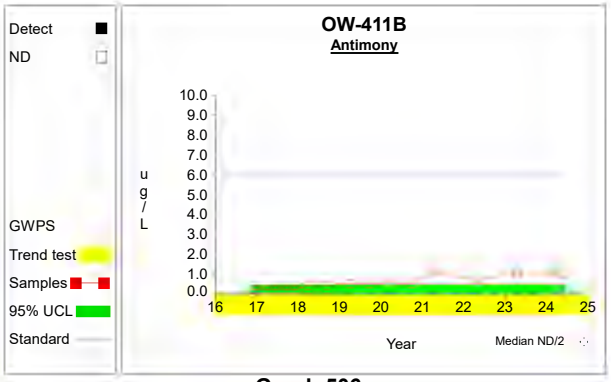


Graph 504

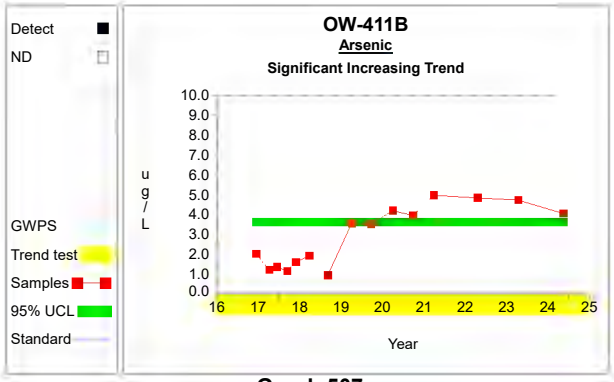
Confidence Limits (Assessment)



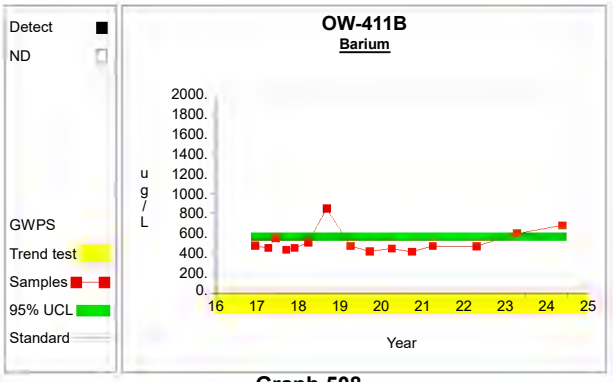
Graph 505



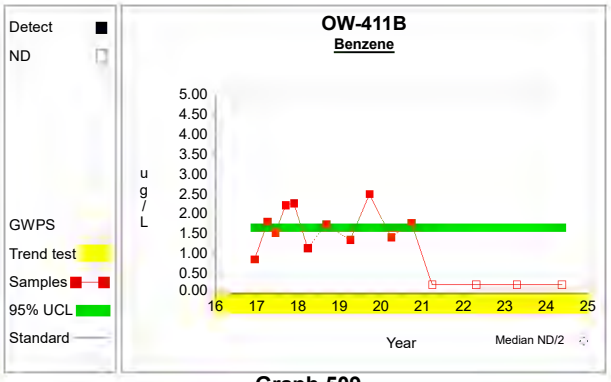
Graph 506



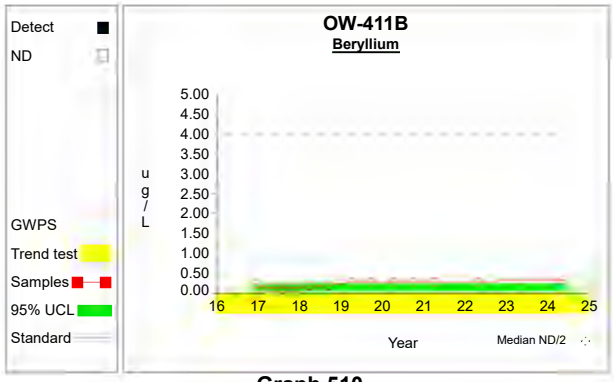
Graph 507



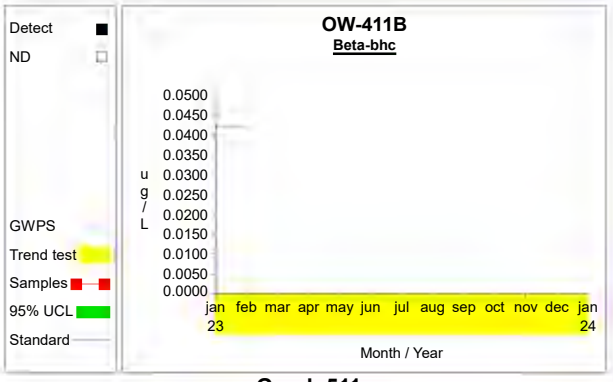
Graph 508



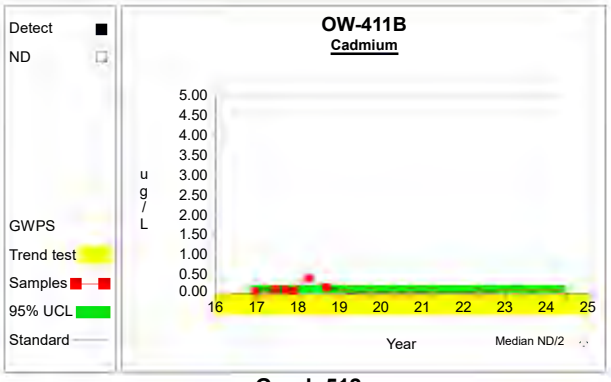
Graph 509



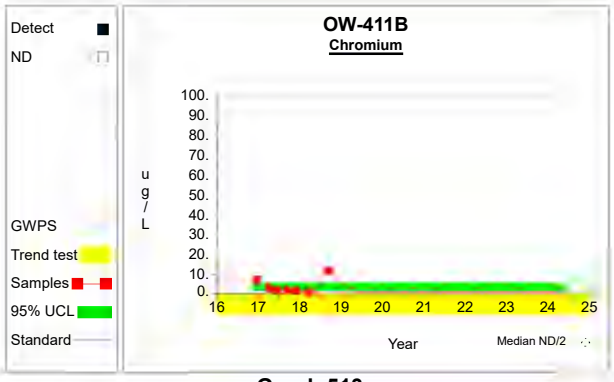
Graph 510



Graph 511

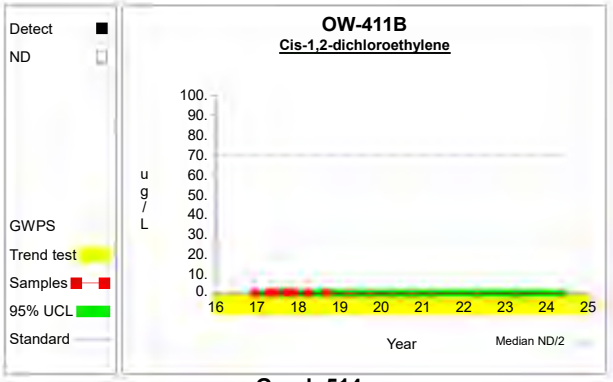


Graph 512

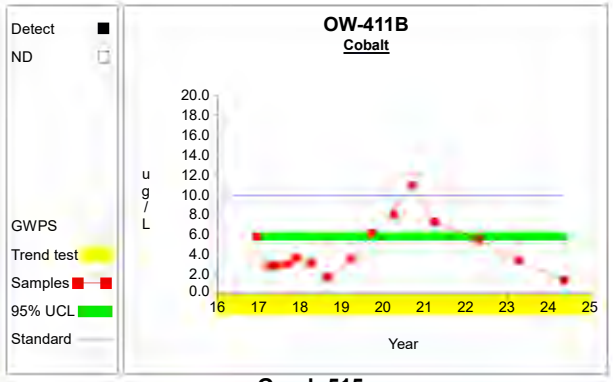


Graph 513

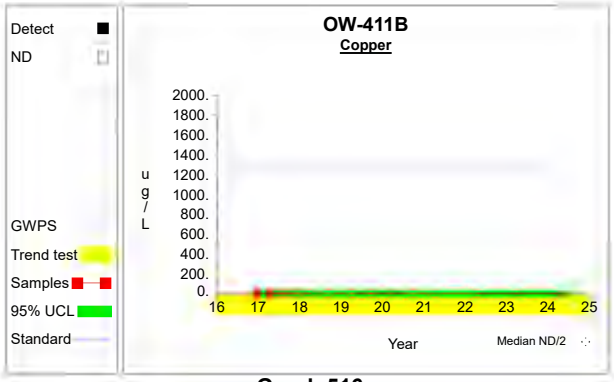
Confidence Limits (Assessment)



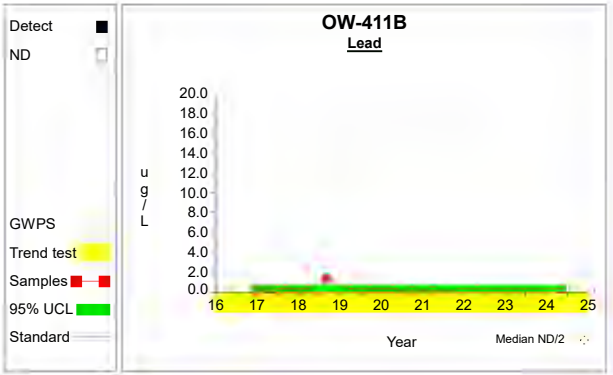
Graph 514



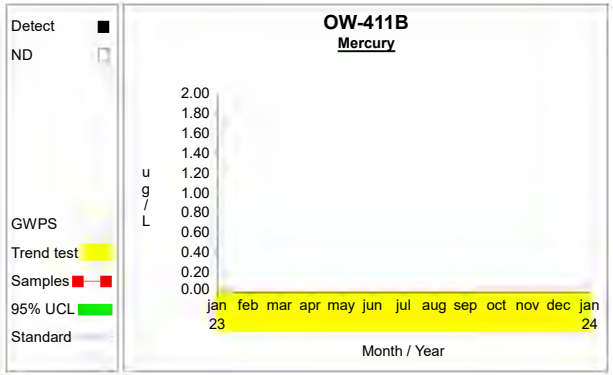
Graph 515



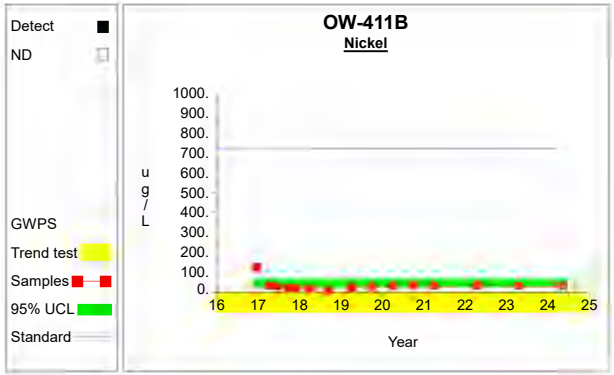
Graph 516



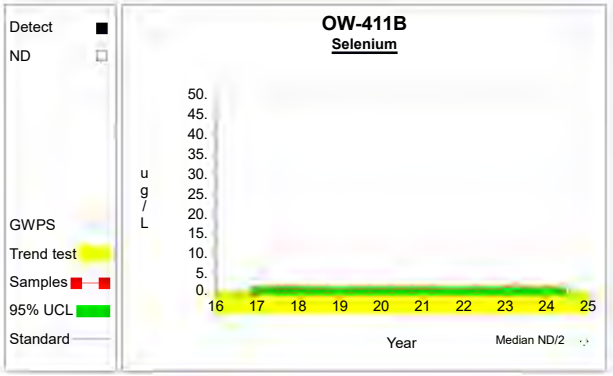
Graph 517



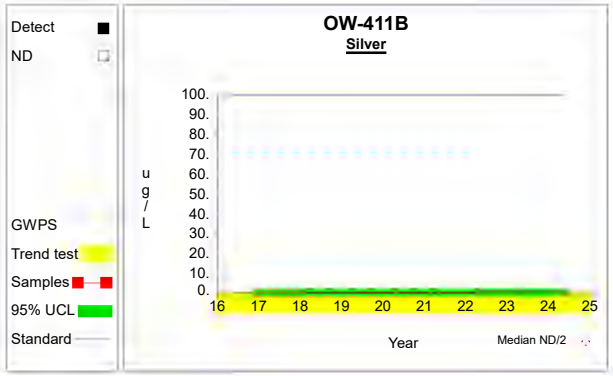
Graph 518



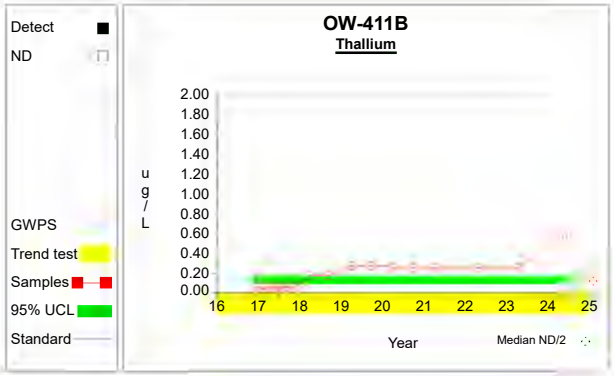
Graph 519



Graph 520

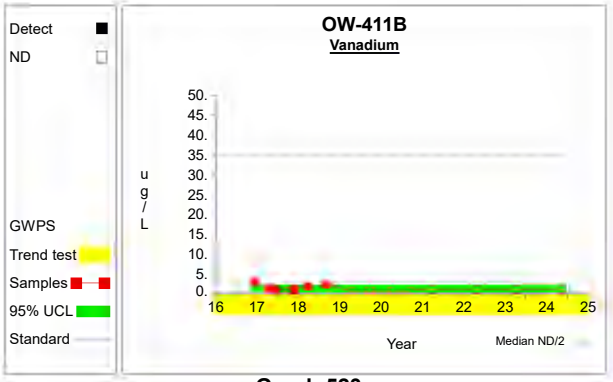


Graph 521

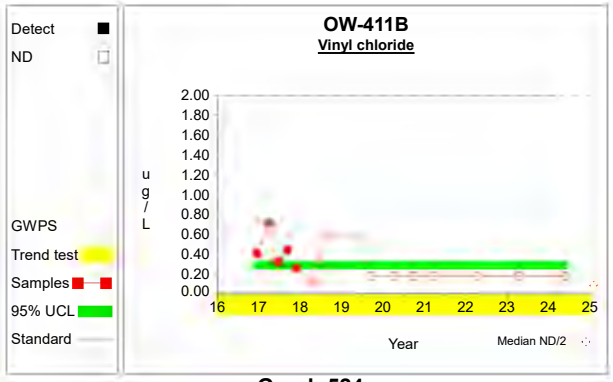


Graph 522

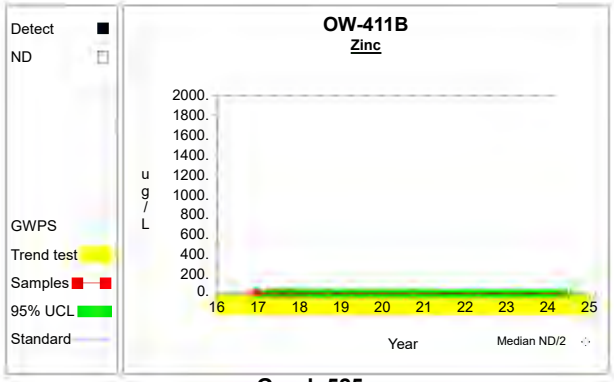
Confidence Limits (Assessment)



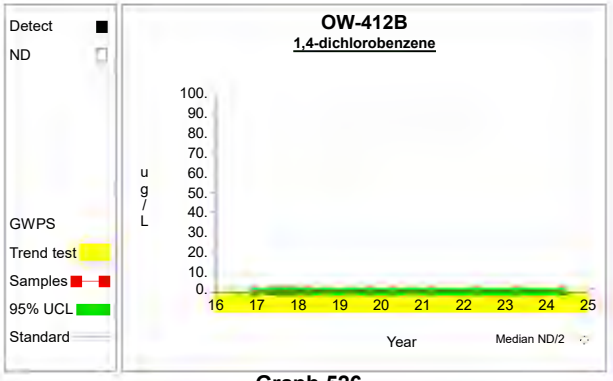
Graph 523



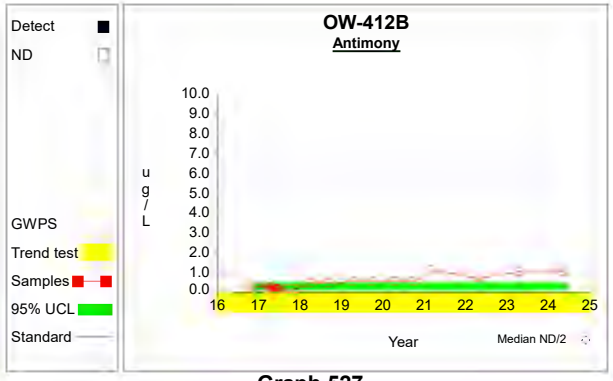
Graph 524



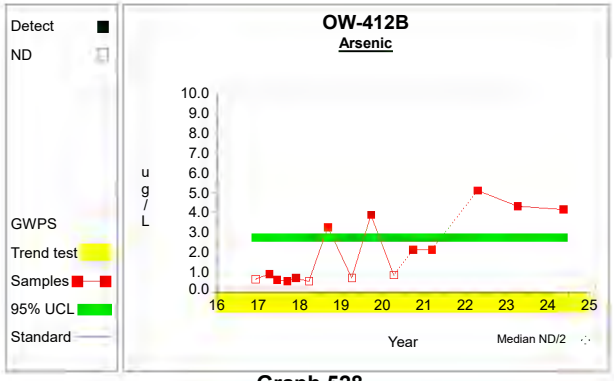
Graph 525



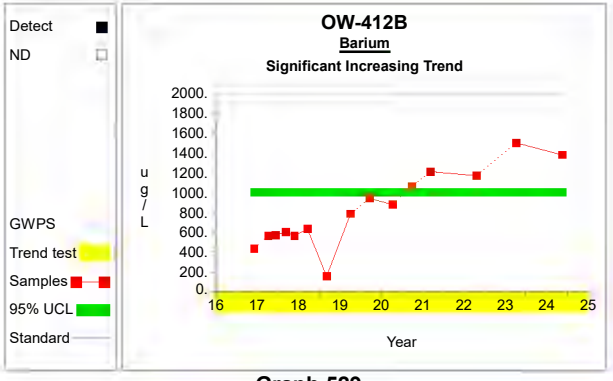
Graph 526



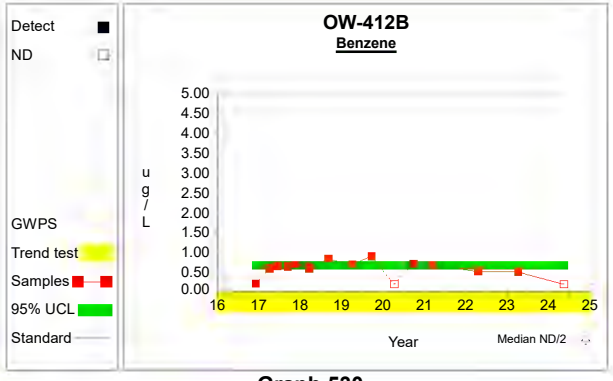
Graph 527



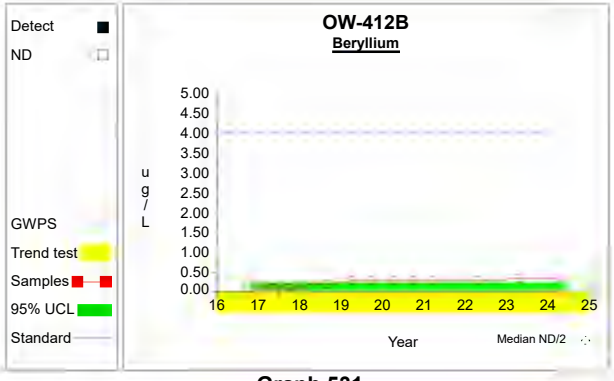
Graph 528



Graph 529

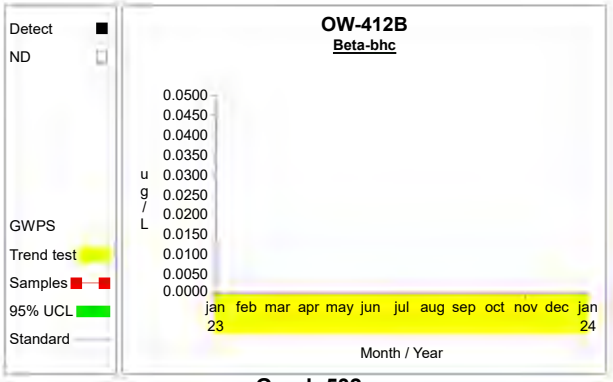


Graph 530

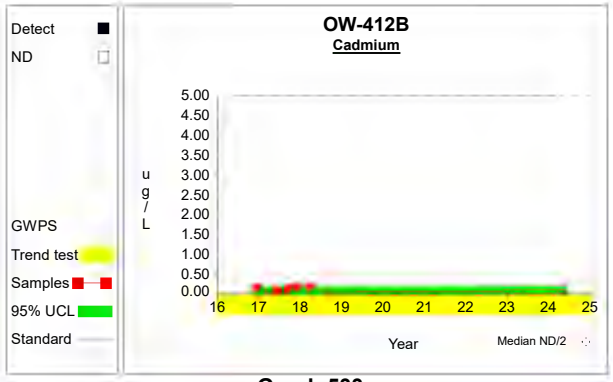


Graph 531

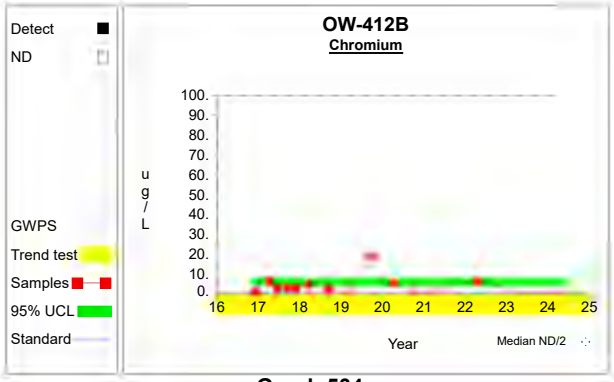
Confidence Limits (Assessment)



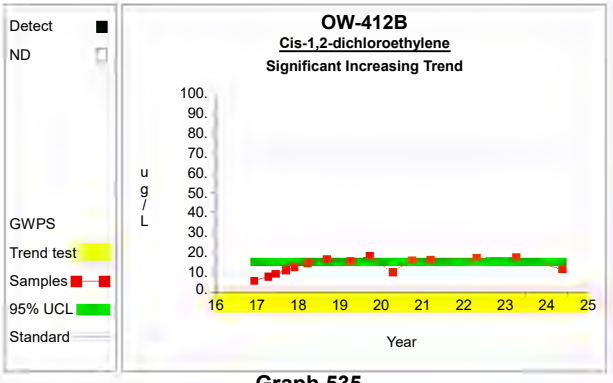
Graph 532



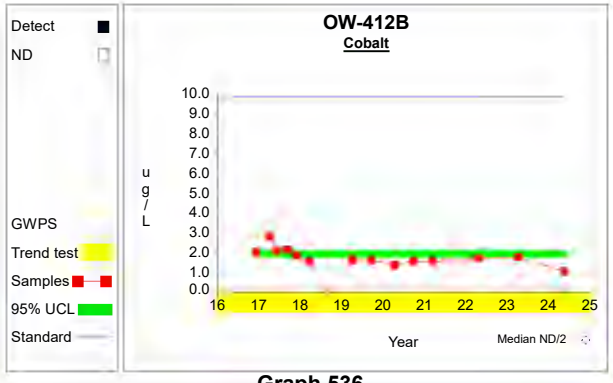
Graph 533



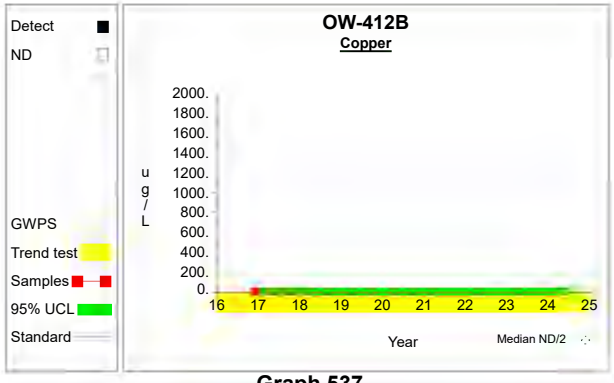
Graph 534



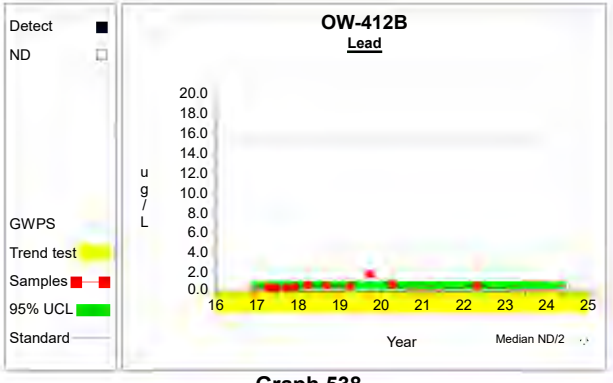
Graph 535



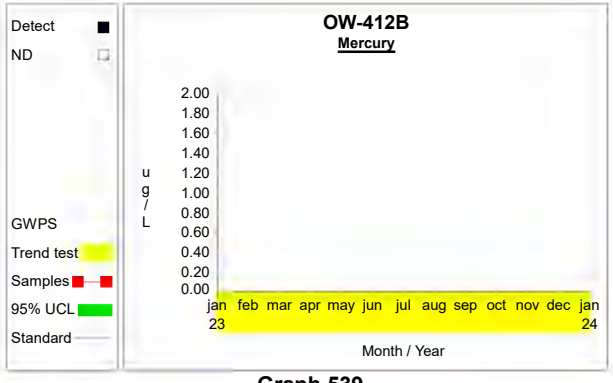
Graph 536



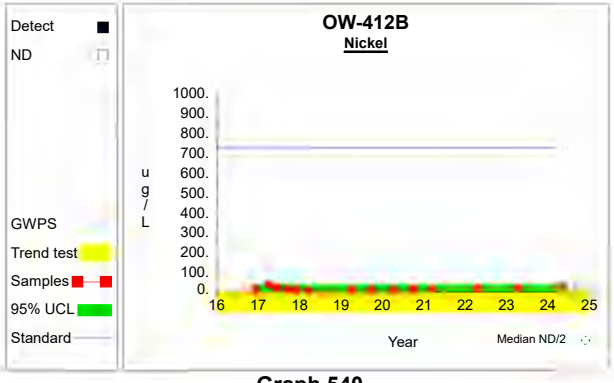
Graph 537



Graph 538

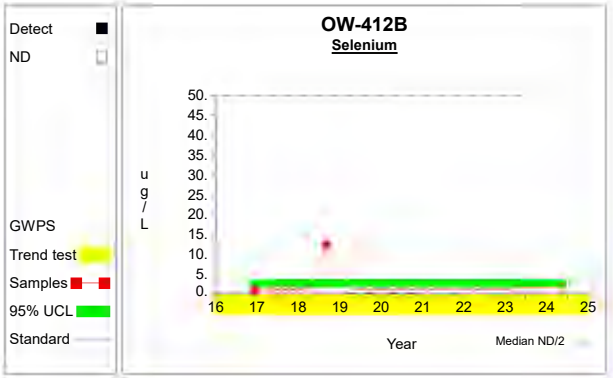


Graph 539

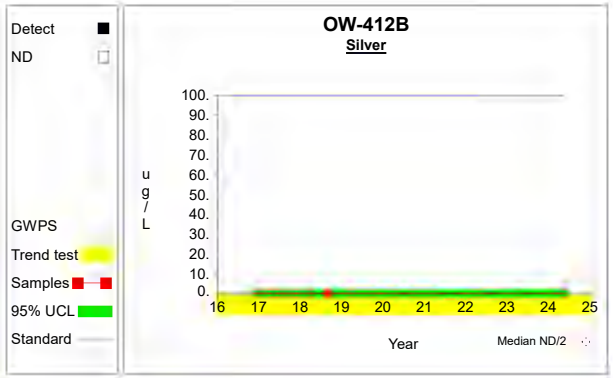


Graph 540

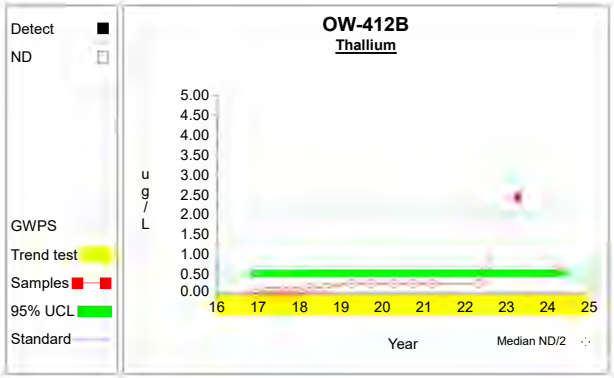
Confidence Limits (Assessment)



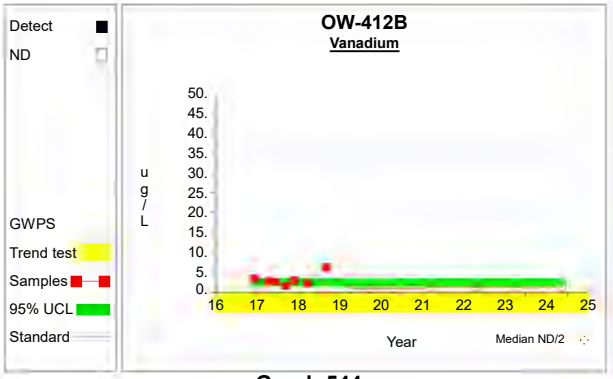
Graph 541



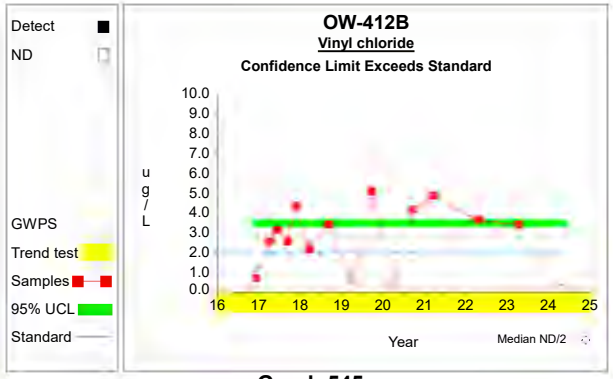
Graph 542



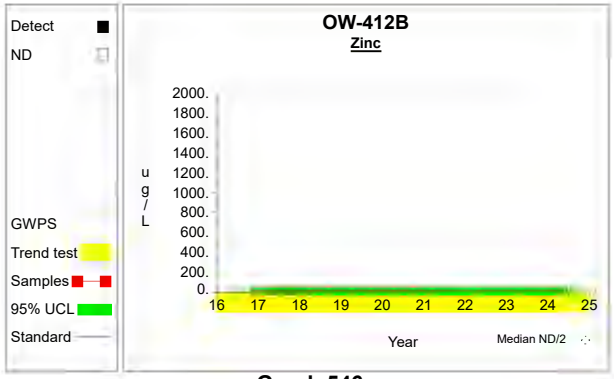
Graph 543



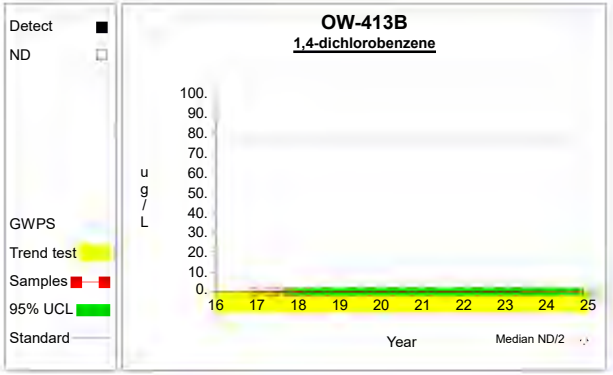
Graph 544



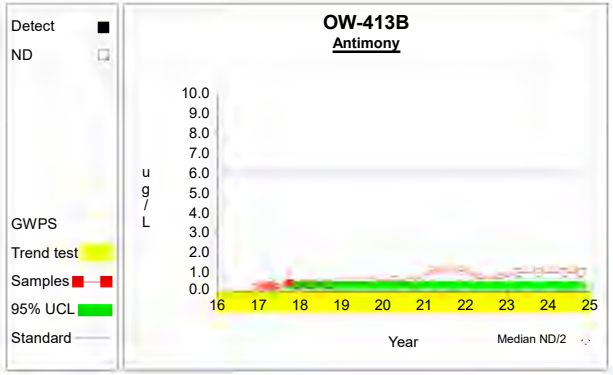
Graph 545



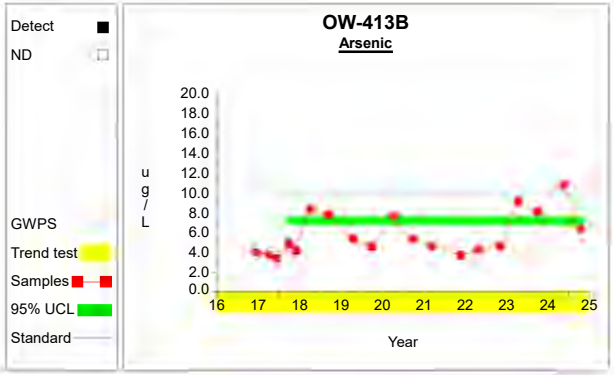
Graph 546



Graph 547

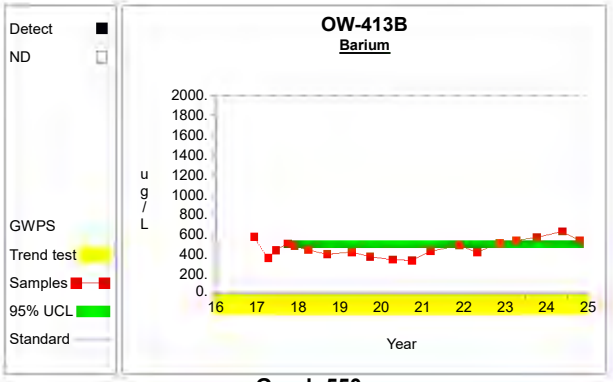


Graph 548

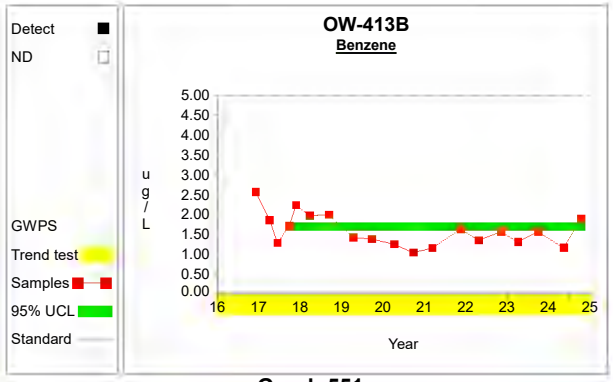


Graph 549

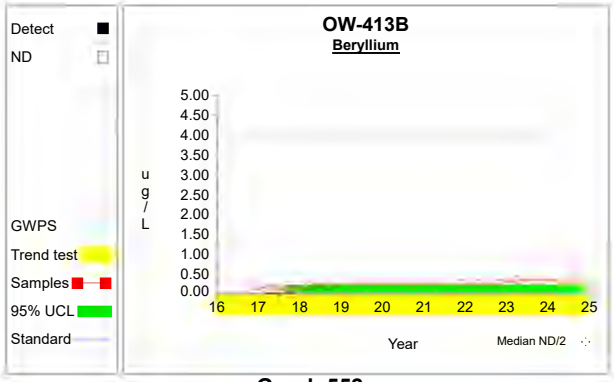
Confidence Limits (Assessment)



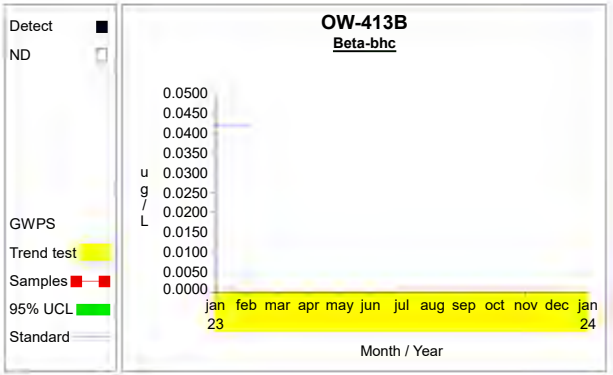
Graph 550



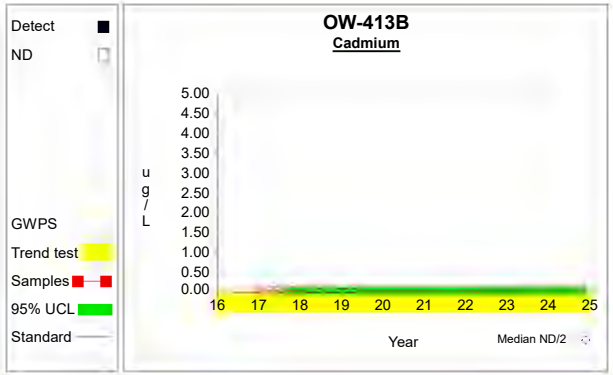
Graph 551



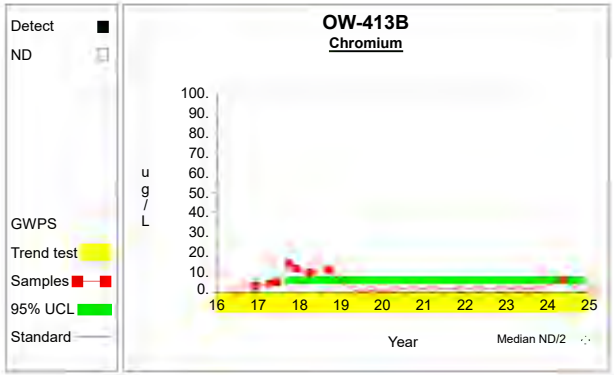
Graph 552



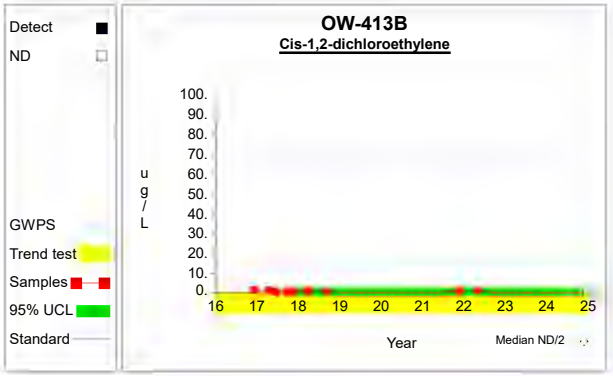
Graph 553



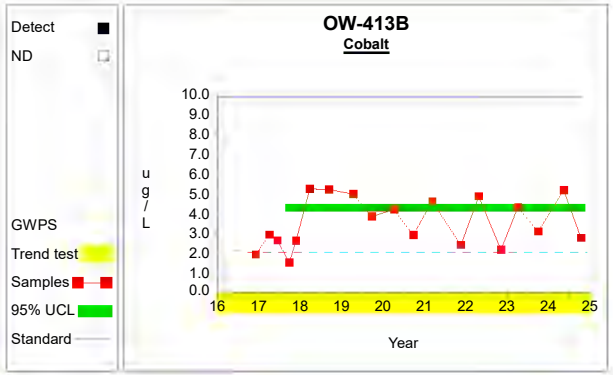
Graph 554



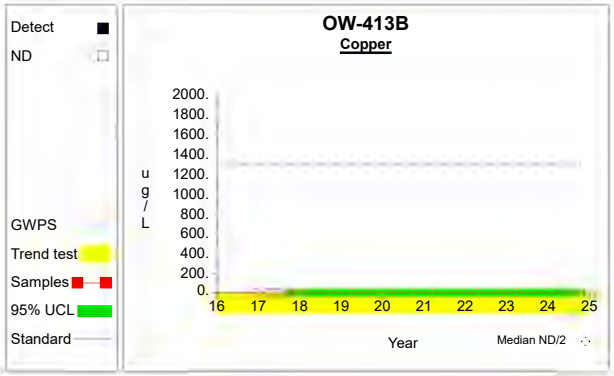
Graph 555



Graph 556

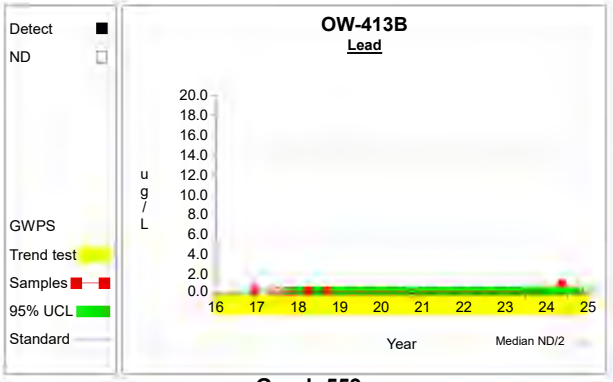


Graph 557

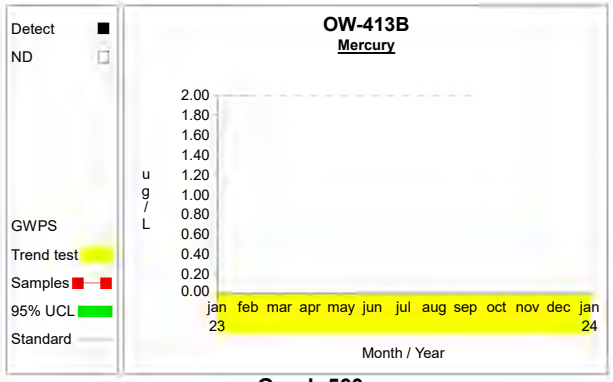


Graph 558

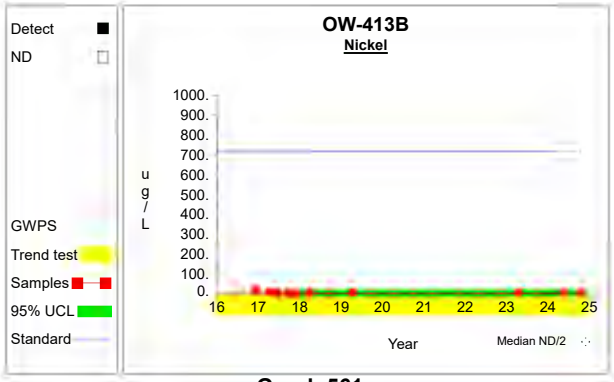
Confidence Limits (Assessment)



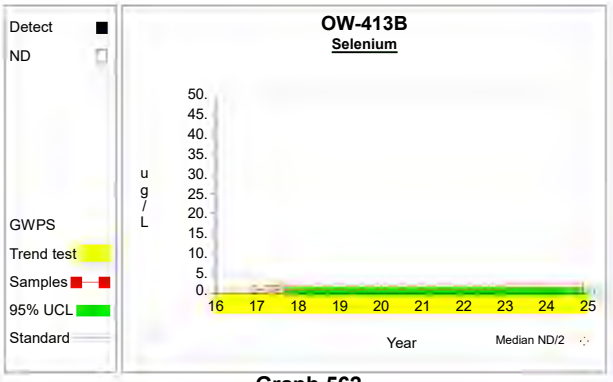
Graph 559



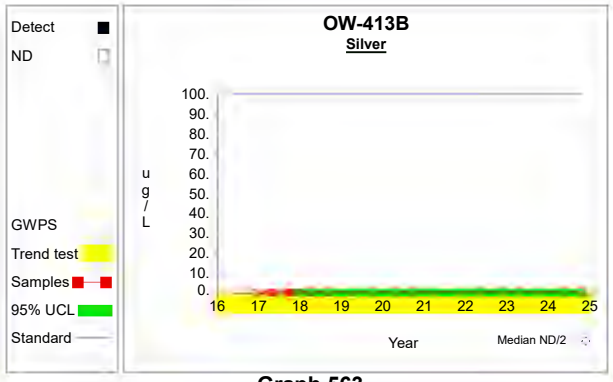
Graph 560



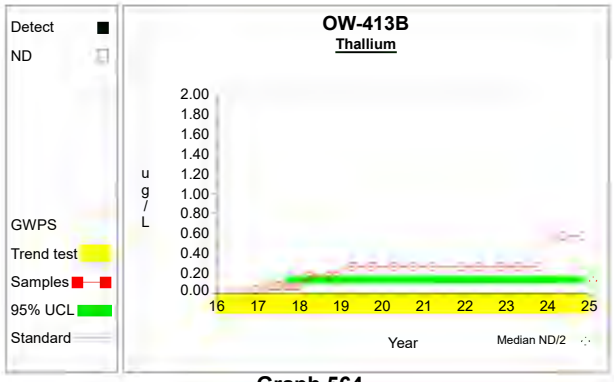
Graph 561



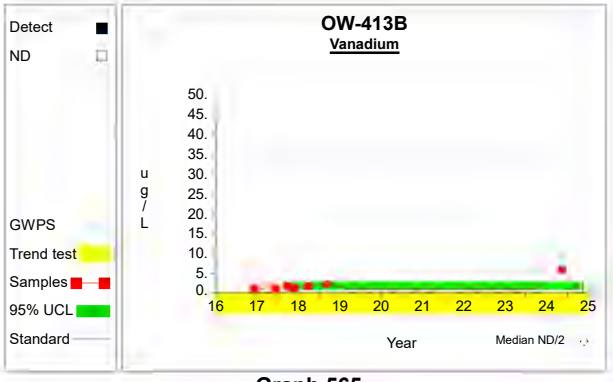
Graph 562



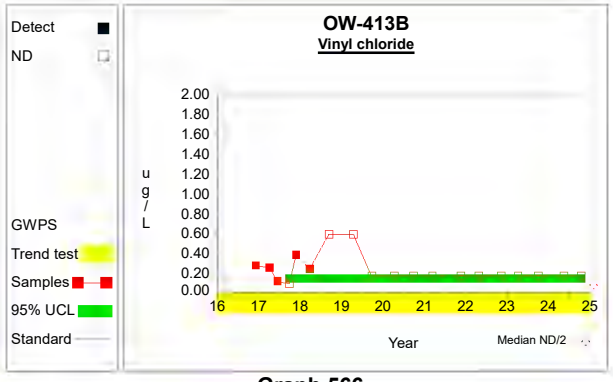
Graph 563



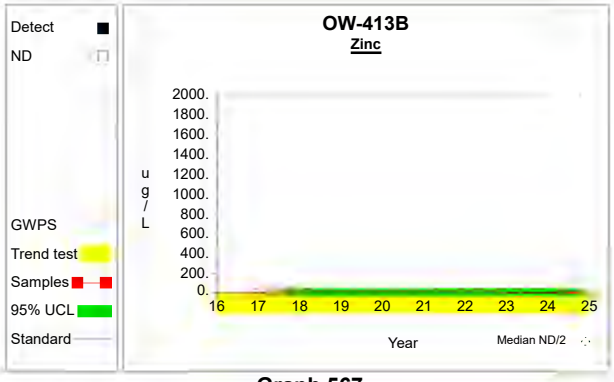
Graph 564



Graph 565

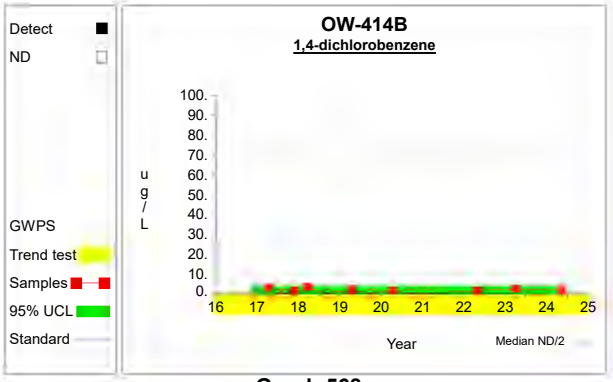


Graph 566

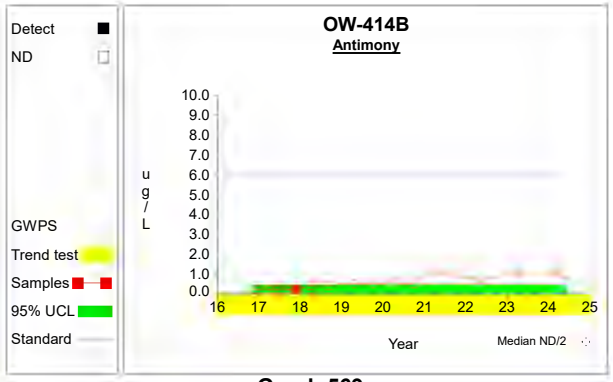


Graph 567

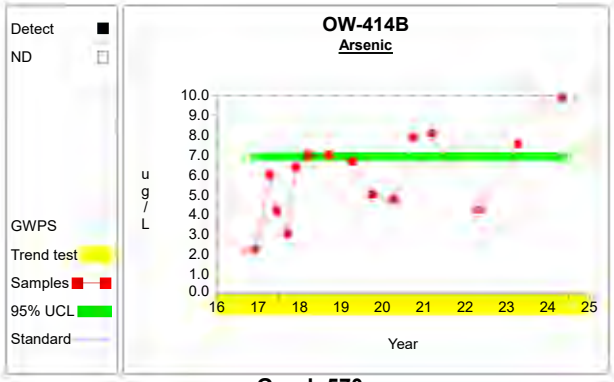
Confidence Limits (Assessment)



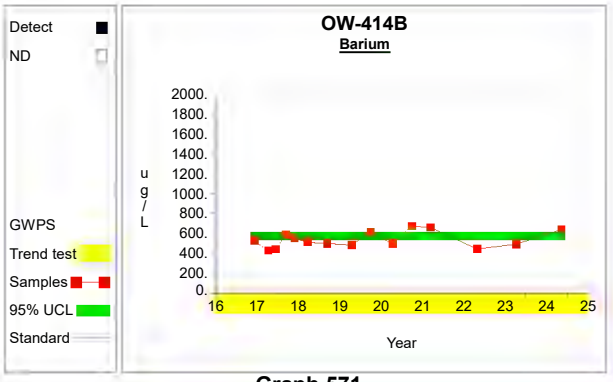
Graph 568



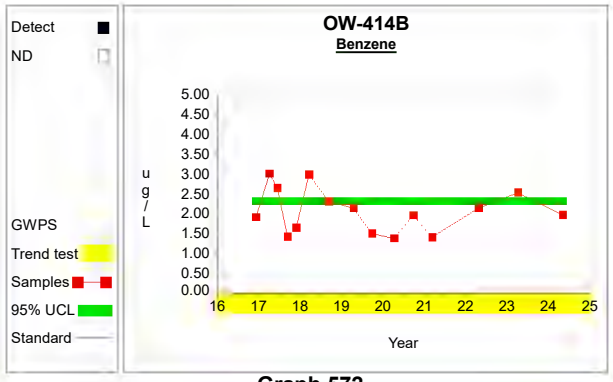
Graph 569



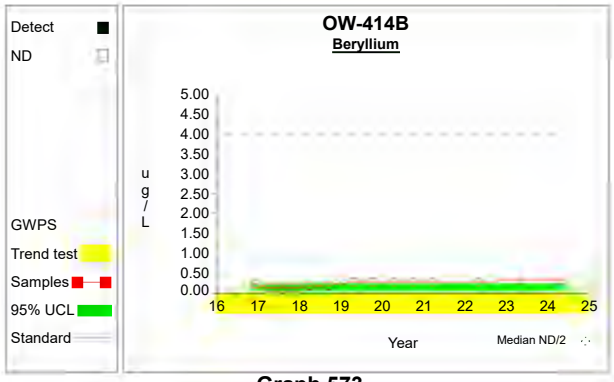
Graph 570



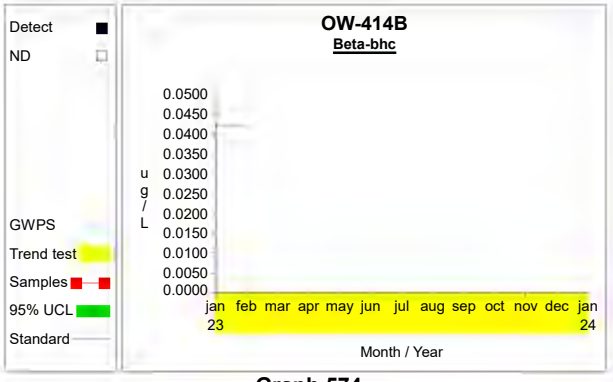
Graph 571



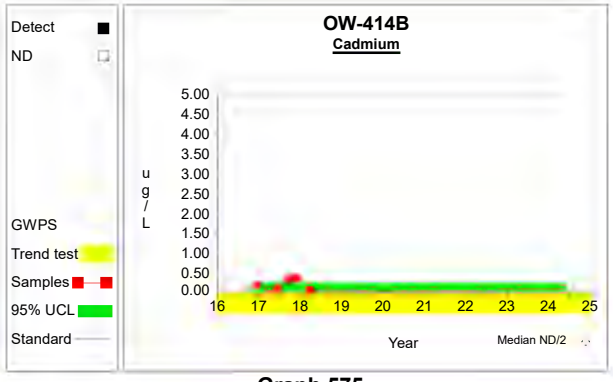
Graph 572



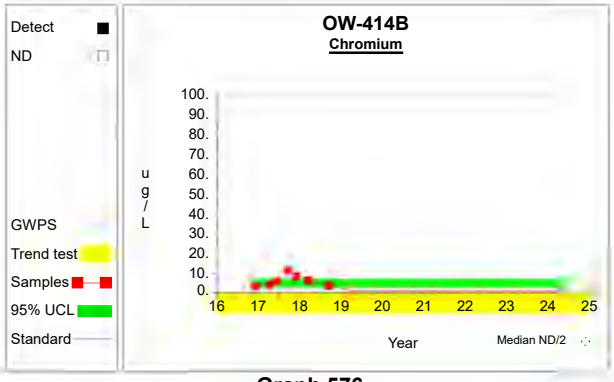
Graph 573



Graph 574

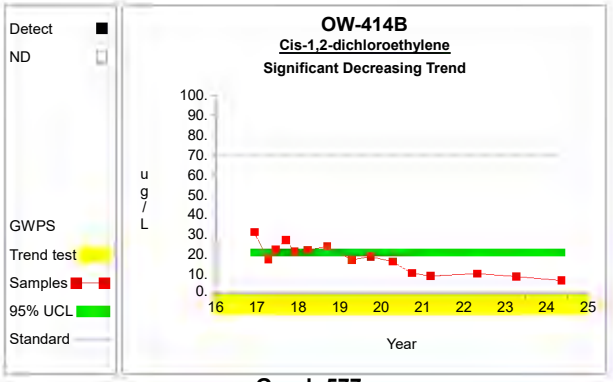


Graph 575

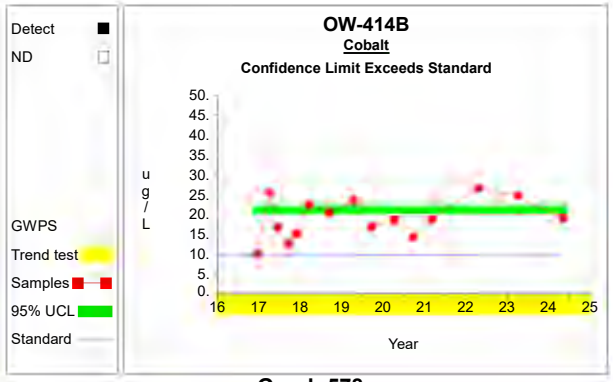


Graph 576

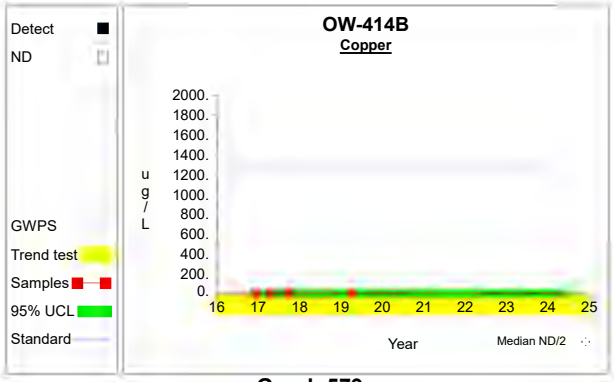
Confidence Limits (Assessment)



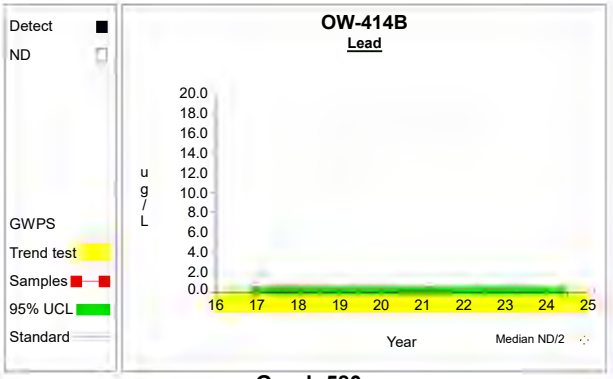
Graph 577



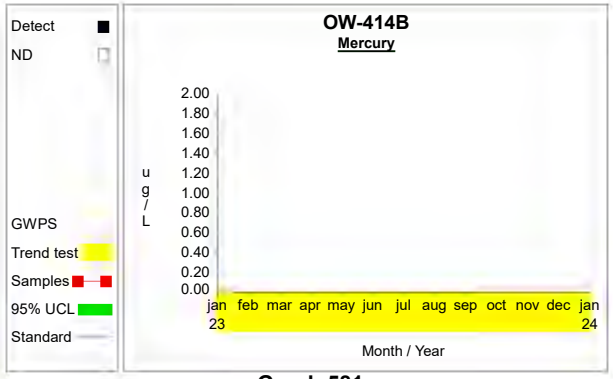
Graph 578



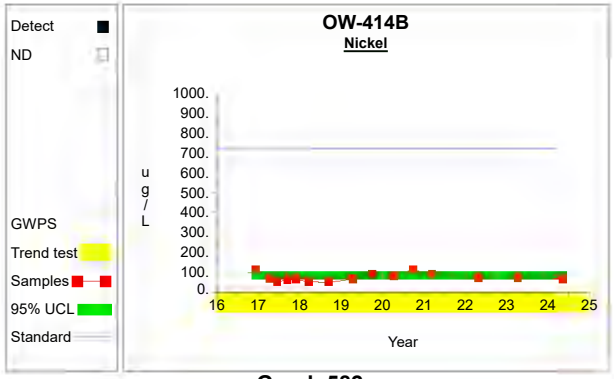
Graph 579



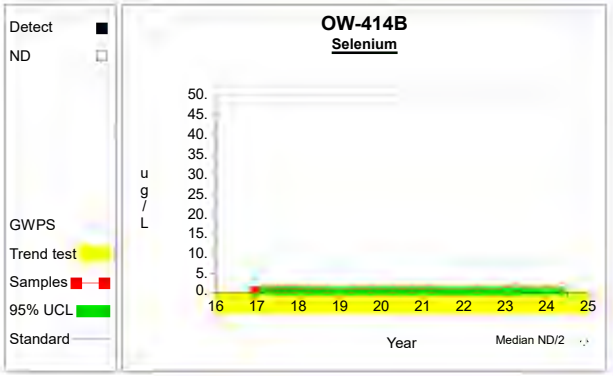
Graph 580



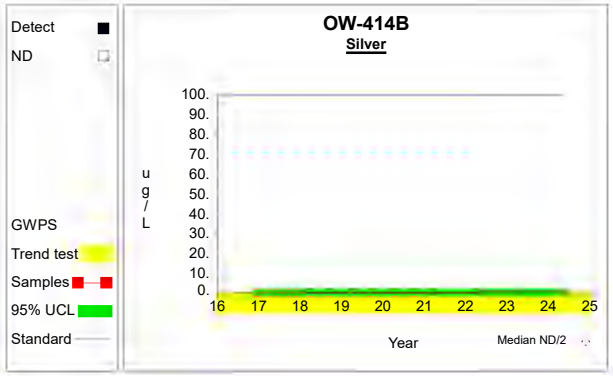
Graph 581



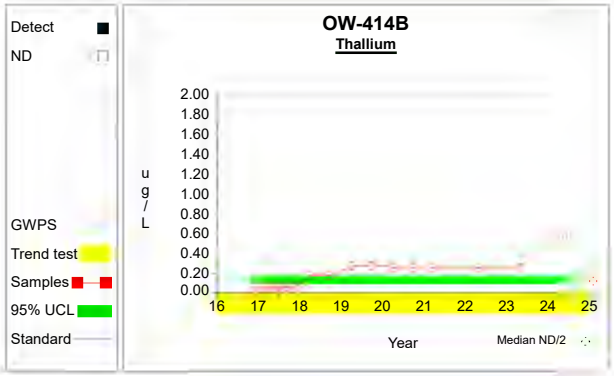
Graph 582



Graph 583

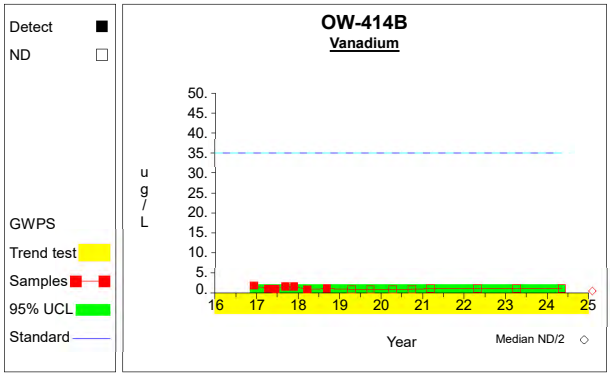


Graph 584

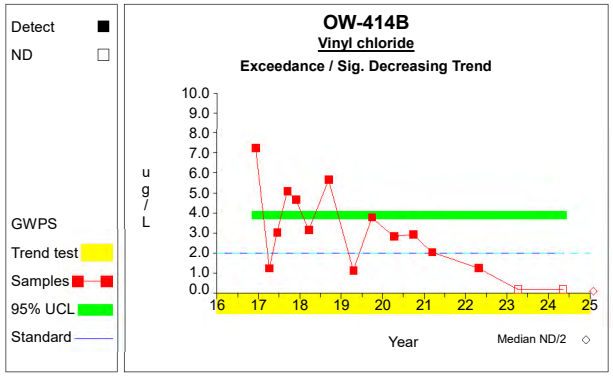


Graph 585

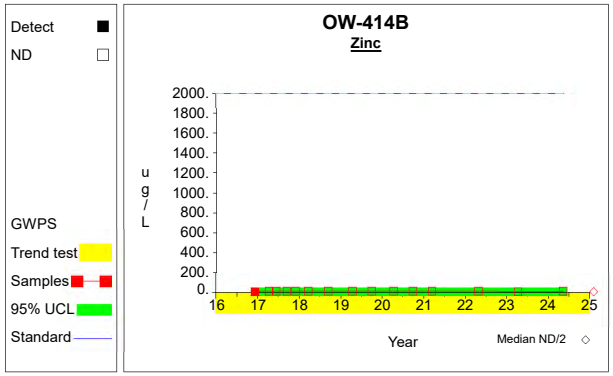
Confidence Limits (Assessment)



Graph 586



Graph 587



Graph 588

Table 1

Confidence Intervals for Comparing the Mean of the Last 16 Measurements to an Assessment Monitoring Standard

Constituent	Units	Well	N	Mean	SD	Factor	95% LCL	95% UCL	Standard	Trend	
1,4-dichlorobenzene	ug/L	MW-409B	16	0.115	0.000	0.438	0.115	0.115	75.000		
Antimony	ug/L	MW-409B	16	0.255	0.000	0.438	0.255	0.255	6.000		
Arsenic	ug/L	MW-409B	16	2.489	1.807	0.438	1.698	3.281	10.000		
Barium	ug/L	MW-409B	16	35.138	11.616	0.438	30.047	40.228	2000.000		
Benzene	ug/L	MW-409B	16	0.136	0.074	0.438	0.103	0.168	5.000		
Beryllium	ug/L	MW-409B	16	0.135	0.000	0.438	0.135	0.135	4.000		
Beta-bhc	ug/L	MW-409B	8	0.003	0.000	0.670	0.003	0.003	0.042		
Cadmium	ug/L	MW-409B	16	0.039	0.023	0.438	0.029	0.049	5.000		
Chromium	ug/L	MW-409B	16	0.550	0.000	0.438	0.550	0.550	100.000		
Cis-1,2-dichloroethylene	ug/L	MW-409B	16	0.126	0.057	0.438	0.101	0.151	70.000		
Cobalt	ug/L	MW-409B	16	8.945	3.838	0.438	7.263	10.627	9.830	dec	**
Copper	ug/L	MW-409B	16	1.156	1.025	0.438	0.707	1.605	1300.000		
Lead	ug/L	MW-409B	16	0.125	0.000	0.438	0.125	0.125	15.000		
Mercury	ug/L	MW-409B	10	0.061	0.017	0.580	0.052	0.071	2.000		
Nickel	ug/L	MW-409B	16	6.642	2.972	0.438	5.340	7.944	722.000	dec	
Selenium	ug/L	MW-409B	16	0.480	0.000	0.438	0.480	0.480	50.000		
Silver	ug/L	MW-409B	16	0.185	0.000	0.438	0.185	0.185	100.000		
Thallium	ug/L	MW-409B	16	0.130	0.000	0.438	0.130	0.130	2.000		
Vanadium	ug/L	MW-409B	16	0.435	0.059	0.438	0.409	0.461	35.000		
Vinyl chloride	ug/L	MW-409B	16	0.090	0.000	0.438	0.090	0.090	2.000		
Zinc	ug/L	MW-409B	16	5.000	0.000	0.438	5.000	5.000	2000.000		
1,4-dichlorobenzene	ug/L	MW-501B	16	0.115	0.000	0.438	0.115	0.115	75.000		
Antimony	ug/L	MW-501B	16	0.265	0.000	0.438	0.265	0.265	6.000		
Arsenic	ug/L	MW-501B	16	0.454	0.471	0.438	0.247	0.660	10.000		
Barium	ug/L	MW-501B	16	173.881	273.855	0.438	53.881	293.881	2000.000	inc	
Benzene	ug/L	MW-501B	16	0.110	0.000	0.438	0.110	0.110	5.000		
Beryllium	ug/L	MW-501B	16	0.135	0.000	0.438	0.135	0.135	4.000		
Beta-bhc	ug/L	MW-501B	1								*
Cadmium	ug/L	MW-501B	16	0.034	0.014	0.438	0.027	0.040	5.000		
Chromium	ug/L	MW-501B	16	2.053	3.831	0.438	0.374	3.732	100.000		
Cis-1,2-dichloroethylene	ug/L	MW-501B	16	0.105	0.000	0.438	0.105	0.105	70.000		
Cobalt	ug/L	MW-501B	16	0.671	0.986	0.438	0.239	1.103	9.830		
Copper	ug/L	MW-501B	16	1.032	0.361	0.438	0.874	1.190	1300.000		
Lead	ug/L	MW-501B	16	0.132	0.048	0.438	0.111	0.153	15.000		
Mercury	ug/L	MW-501B	1								*
Nickel	ug/L	MW-501B	16	9.236	6.280	0.438	6.484	11.987	722.000		
Selenium	ug/L	MW-501B	16	0.480	0.000	0.438	0.480	0.480	50.000		
Silver	ug/L	MW-501B	16	0.150	0.000	0.438	0.150	0.150	100.000		
Thallium	ug/L	MW-501B	16	0.085	0.000	0.438	0.085	0.085	2.000		
Vanadium	ug/L	MW-501B	16	0.528	0.246	0.438	0.420	0.636	35.000		
Vinyl chloride	ug/L	MW-501B	16	0.090	0.000	0.438	0.090	0.090	2.000		
Zinc	ug/L	MW-501B	16	5.569	2.275	0.438	4.572	6.566	2000.000		
1,4-dichlorobenzene	ug/L	MW-602B	16	0.115	0.000	0.438	0.115	0.115	75.000		
Antimony	ug/L	MW-602B	16	0.265	0.000	0.438	0.265	0.265	6.000		
Arsenic	ug/L	MW-602B	16	0.375	0.000	0.438	0.375	0.375	10.000		
Barium	ug/L	MW-602B	16	125.388	21.672	0.438	115.891	134.884	2000.000	dec	
Benzene	ug/L	MW-602B	16	0.110	0.000	0.438	0.110	0.110	5.000		
Beryllium	ug/L	MW-602B	16	0.135	0.000	0.438	0.135	0.135	4.000		
Beta-bhc	ug/L	MW-602B	0								*
Cadmium	ug/L	MW-602B	16	0.046	0.027	0.438	0.034	0.059	5.000		
Chromium	ug/L	MW-602B	16	6.422	9.403	0.438	2.302	10.542	100.000		
Cis-1,2-dichloroethylene	ug/L	MW-602B	16	0.105	0.000	0.438	0.105	0.105	70.000		
Cobalt	ug/L	MW-602B	16	0.466	0.792	0.438	0.119	0.813	9.830		
Copper	ug/L	MW-602B	16	0.900	0.000	0.438	0.900	0.900	1300.000		
Lead	ug/L	MW-602B	16	0.125	0.000	0.438	0.125	0.125	15.000		
Mercury	ug/L	MW-602B	0								*
Nickel	ug/L	MW-602B	16	4.281	6.787	0.438	1.307	7.255	722.000		
Selenium	ug/L	MW-602B	16	0.540	0.160	0.438	0.470	0.610	50.000		
Silver	ug/L	MW-602B	16	0.182	0.011	0.438	0.177	0.187	100.000		
Thallium	ug/L	MW-602B	16	0.130	0.000	0.438	0.130	0.130	2.000		
Vanadium	ug/L	MW-602B	16	0.696	0.263	0.438	0.581	0.811	35.000		
Vinyl chloride	ug/L	MW-602B	16	0.090	0.000	0.438	0.090	0.090	2.000		

* - Insufficient Data
** - Significant Exceedance
LCL = Lower Confidence Limit
UCL = Upper Confidence Limit

Table 1

Confidence Intervals for Comparing the Mean of the Last 16 Measurements to an Assessment Monitoring Standard

Constituent	Units	Well	N	Mean	SD	Factor	95% LCL	95% UCL	Standard	Trend	
Zinc	ug/L	MW-602B	16	5.000	0.000	0.438	5.000	5.000	2000.000		
1,4-dichlorobenzene	ug/L	MW-603B	16	0.115	0.000	0.438	0.115	0.115	75.000		
Antimony	ug/L	MW-603B	16	0.291	0.006	0.438	0.289	0.294	6.000		
Arsenic	ug/L	MW-603B	16	1.418	1.304	0.438	0.846	1.989	10.000		
Barium	ug/L	MW-603B	16	46.394	10.644	0.438	41.730	51.058	2000.000	dec	
Benzene	ug/L	MW-603B	16	0.110	0.000	0.438	0.110	0.110	5.000		
Beryllium	ug/L	MW-603B	16	0.135	0.000	0.438	0.135	0.135	4.000		
Beta-bhc	ug/L	MW-603B	0								*
Cadmium	ug/L	MW-603B	16	0.030	0.000	0.438	0.030	0.030	5.000		
Chromium	ug/L	MW-603B	16	0.550	0.000	0.438	0.550	0.550	100.000		
Cis-1,2-dichloroethylene	ug/L	MW-603B	16	0.105	0.000	0.438	0.105	0.105	70.000		
Cobalt	ug/L	MW-603B	16	0.100	0.039	0.438	0.083	0.117	9.830		
Copper	ug/L	MW-603B	16	0.900	0.000	0.438	0.900	0.900	1300.000		
Lead	ug/L	MW-603B	16	0.120	0.000	0.438	0.120	0.120	15.000		
Mercury	ug/L	MW-603B	0								*
Nickel	ug/L	MW-603B	16	0.972	0.088	0.438	0.934	1.010	722.000		
Selenium	ug/L	MW-603B	16	0.500	0.000	0.438	0.500	0.500	50.000		
Silver	ug/L	MW-603B	16	0.183	0.008	0.438	0.179	0.187	100.000		
Thallium	ug/L	MW-603B	16	0.130	0.000	0.438	0.130	0.130	2.000		
Vanadium	ug/L	MW-603B	16	0.425	0.000	0.438	0.425	0.425	35.000		
Vinyl chloride	ug/L	MW-603B	16	0.090	0.000	0.438	0.090	0.090	2.000		
Zinc	ug/L	MW-603B	16	5.000	0.000	0.438	5.000	5.000	2000.000		
1,4-dichlorobenzene	ug/L	MW-604B	16	0.115	0.000	0.438	0.115	0.115	75.000		
Antimony	ug/L	MW-604B	16	0.290	0.000	0.438	0.290	0.290	6.000		
Arsenic	ug/L	MW-604B	16	0.375	0.000	0.438	0.375	0.375	10.000		
Barium	ug/L	MW-604B	16	95.463	20.605	0.438	86.433	104.492	2000.000	dec	
Benzene	ug/L	MW-604B	16	0.110	0.000	0.438	0.110	0.110	5.000		
Beryllium	ug/L	MW-604B	16	0.135	0.000	0.438	0.135	0.135	4.000		
Beta-bhc	ug/L	MW-604B	0								*
Cadmium	ug/L	MW-604B	16	0.036	0.016	0.438	0.029	0.043	5.000		
Chromium	ug/L	MW-604B	16	2.357	3.090	0.438	1.003	3.711	100.000		
Cis-1,2-dichloroethylene	ug/L	MW-604B	16	0.105	0.000	0.438	0.105	0.105	70.000		
Cobalt	ug/L	MW-604B	16	0.205	0.201	0.438	0.117	0.293	9.830	dec	
Copper	ug/L	MW-604B	16	0.900	0.000	0.438	0.900	0.900	1300.000		
Lead	ug/L	MW-604B	16	0.120	0.000	0.438	0.120	0.120	15.000		
Mercury	ug/L	MW-604B	0								*
Nickel	ug/L	MW-604B	16	5.424	6.694	0.438	2.491	8.358	722.000		
Selenium	ug/L	MW-604B	16	0.500	0.000	0.438	0.500	0.500	50.000		
Silver	ug/L	MW-604B	16	0.185	0.000	0.438	0.185	0.185	100.000		
Thallium	ug/L	MW-604B	16	0.130	0.000	0.438	0.130	0.130	2.000		
Vanadium	ug/L	MW-604B	16	0.579	0.079	0.438	0.544	0.613	35.000		
Vinyl chloride	ug/L	MW-604B	16	0.090	0.000	0.438	0.090	0.090	2.000		
Zinc	ug/L	MW-604B	16	5.000	0.000	0.438	5.000	5.000	2000.000		
1,4-dichlorobenzene	ug/L	MW-711B	9	0.115	0.000	0.620	0.115	0.115	75.000		
Antimony	ug/L	MW-711B	9	0.500	0.000	0.620	0.500	0.500	6.000		
Arsenic	ug/L	MW-711B	9	0.375	0.000	0.620	0.375	0.375	10.000		
Barium	ug/L	MW-711B	9	64.467	29.116	0.620	46.420	82.514	2000.000	dec	
Benzene	ug/L	MW-711B	9	0.110	0.000	0.620	0.110	0.110	5.000		
Beryllium	ug/L	MW-711B	9	0.135	0.000	0.620	0.135	0.135	4.000		
Beta-bhc	ug/L	MW-711B	0								*
Cadmium	ug/L	MW-711B	9	0.038	0.033	0.620	0.018	0.059	5.000		
Chromium	ug/L	MW-711B	9	0.550	0.000	0.620	0.550	0.550	100.000		
Cis-1,2-dichloroethylene	ug/L	MW-711B	9	0.105	0.000	0.620	0.105	0.105	70.000		
Cobalt	ug/L	MW-711B	9	3.861	1.011	0.620	3.235	4.488	9.830		
Copper	ug/L	MW-711B	9	0.900	0.000	0.620	0.900	0.900	1300.000		
Lead	ug/L	MW-711B	9	0.120	0.000	0.620	0.120	0.120	15.000		
Mercury	ug/L	MW-711B	0								*
Nickel	ug/L	MW-711B	10	13.077	3.562	0.580	11.013	15.141	722.000		
Selenium	ug/L	MW-711B	9	0.480	0.000	0.620	0.480	0.480	50.000		
Silver	ug/L	MW-711B	9	0.245	0.000	0.620	0.245	0.245	100.000		
Thallium	ug/L	MW-711B	9	0.130	0.000	0.620	0.130	0.130	2.000		
Vanadium	ug/L	MW-711B	9	0.550	0.000	0.620	0.550	0.550	35.000		

* - Insufficient Data
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LCL = Lower Confidence Limit
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Table 1

Confidence Intervals for Comparing the Mean of the Last 16 Measurements to an Assessment Monitoring Standard

Constituent	Units	Well	N	Mean	SD	Factor	95% LCL	95% UCL	Standard	Trend	
Vinyl chloride	ug/L	MW-711B	9	0.090	0.000	0.620	0.090	0.090	2.000		
Zinc	ug/L	MW-711B	9	5.000	0.000	0.620	5.000	5.000	2000.000		
1,4-dichlorobenzene	ug/L	MW-712B	9	0.115	0.000	0.620	0.115	0.115	75.000		
Antimony	ug/L	MW-712B	9	0.500	0.000	0.620	0.500	0.500	6.000		
Arsenic	ug/L	MW-712B	9	0.727	1.385	0.620	0.000	1.585	10.000		
Barium	ug/L	MW-712B	9	77.978	32.387	0.620	57.903	98.053	2000.000		
Benzene	ug/L	MW-712B	9	0.110	0.000	0.620	0.110	0.110	5.000		
Beryllium	ug/L	MW-712B	9	0.165	0.000	0.620	0.165	0.165	4.000		
Beta-bhc	ug/L	MW-712B	0								*
Cadmium	ug/L	MW-712B	10	0.190	0.162	0.580	0.096	0.284	5.000		
Chromium	ug/L	MW-712B	9	0.550	0.000	0.620	0.550	0.550	100.000		
Cis-1,2-dichloroethylene	ug/L	MW-712B	9	0.105	0.000	0.620	0.105	0.105	70.000		
Cobalt	ug/L	MW-712B	11	5.903	3.105	0.546	4.207	7.600	9.830		
Copper	ug/L	MW-712B	9	2.444	4.633	0.620	0.000	5.316	1300.000		
Lead	ug/L	MW-712B	9	0.345	0.532	0.620	0.015	0.675	15.000		
Mercury	ug/L	MW-712B	0								*
Nickel	ug/L	MW-712B	9	8.602	3.270	0.620	6.575	10.629	722.000		
Selenium	ug/L	MW-712B	9	15.427	44.840	0.620	0.000	43.220	50.000		
Silver	ug/L	MW-712B	9	0.245	0.000	0.620	0.245	0.245	100.000		
Thallium	ug/L	MW-712B	10	0.396	0.841	0.580	0.000	0.883	2.000		
Vanadium	ug/L	MW-712B	9	0.550	0.000	0.620	0.550	0.550	35.000		
Vinyl chloride	ug/L	MW-712B	9	0.090	0.000	0.620	0.090	0.090	2.000		
Zinc	ug/L	MW-712B	9	5.000	0.000	0.620	5.000	5.000	2000.000		
1,4-dichlorobenzene	ug/L	OW-101B	7	0.115	0.000	0.734	0.115	0.115	75.000		
Antimony	ug/L	OW-101B	7	0.500	0.000	0.734	0.500	0.500	6.000		
Arsenic	ug/L	OW-101B	7	0.265	0.000	0.734	0.265	0.265	10.000		
Barium	ug/L	OW-101B	7	178.000	11.460	0.734	169.587	186.413	2000.000		
Benzene	ug/L	OW-101B	7	0.110	0.000	0.734	0.110	0.110	5.000		
Beryllium	ug/L	OW-101B	7	0.165	0.000	0.734	0.165	0.165	4.000		
Beta-bhc	ug/L	OW-101B	0								*
Cadmium	ug/L	OW-101B	7	0.050	0.000	0.734	0.050	0.050	5.000		
Chromium	ug/L	OW-101B	7	1.463	2.415	0.734	0.000	3.236	100.000		
Cis-1,2-dichloroethylene	ug/L	OW-101B	7	0.105	0.000	0.734	0.105	0.105	70.000		
Cobalt	ug/L	OW-101B	7	0.085	0.000	0.734	0.085	0.085	9.830		
Copper	ug/L	OW-101B	7	0.900	0.000	0.734	0.900	0.900	1300.000		
Lead	ug/L	OW-101B	7	0.120	0.000	0.734	0.120	0.120	15.000		
Mercury	ug/L	OW-101B	0								*
Nickel	ug/L	OW-101B	7	0.950	0.000	0.734	0.950	0.950	722.000		
Selenium	ug/L	OW-101B	7	0.700	0.000	0.734	0.700	0.700	50.000		
Silver	ug/L	OW-101B	7	0.250	0.000	0.734	0.250	0.250	100.000		
Thallium	ug/L	OW-101B	7	0.537	1.077	0.734	0.000	1.328	2.000		
Vanadium	ug/L	OW-101B	7	0.550	0.000	0.734	0.550	0.550	35.000		
Vinyl chloride	ug/L	OW-101B	7	0.090	0.000	0.734	0.090	0.090	2.000		
Zinc	ug/L	OW-101B	7	4.850	0.000	0.734	4.850	4.850	2000.000		
1,4-dichlorobenzene	ug/L	OW-105B	13	0.115	0.000	0.494	0.115	0.115	75.000		
Antimony	ug/L	OW-105B	13	0.493	0.025	0.494	0.481	0.505	6.000		
Arsenic	ug/L	OW-105B	13	0.375	0.000	0.494	0.375	0.375	10.000		
Barium	ug/L	OW-105B	13	86.685	4.552	0.494	84.435	88.934	2000.000		
Benzene	ug/L	OW-105B	13	0.110	0.000	0.494	0.110	0.110	5.000		
Beryllium	ug/L	OW-105B	13	0.135	0.000	0.494	0.135	0.135	4.000		
Beta-bhc	ug/L	OW-105B	0								*
Cadmium	ug/L	OW-105B	14	0.033	0.022	0.473	0.023	0.044	5.000		
Chromium	ug/L	OW-105B	13	4.775	5.166	0.494	2.222	7.328	100.000		
Cis-1,2-dichloroethylene	ug/L	OW-105B	13	0.105	0.000	0.494	0.105	0.105	70.000		
Cobalt	ug/L	OW-105B	13	0.104	0.067	0.494	0.071	0.137	9.830		
Copper	ug/L	OW-105B	13	0.900	0.000	0.494	0.900	0.900	1300.000		
Lead	ug/L	OW-105B	13	0.120	0.000	0.494	0.120	0.120	15.000		
Mercury	ug/L	OW-105B	0								*
Nickel	ug/L	OW-105B	13	4.278	4.412	0.494	2.098	6.459	722.000		
Selenium	ug/L	OW-105B	13	0.500	0.000	0.494	0.500	0.500	50.000		
Silver	ug/L	OW-105B	13	0.210	0.000	0.494	0.210	0.210	100.000		
Thallium	ug/L	OW-105B	13	0.123	0.024	0.494	0.111	0.135	2.000		

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Table 1

Confidence Intervals for Comparing the Mean of the Last 16 Measurements to an Assessment Monitoring Standard

Constituent	Units	Well	N	Mean	SD	Factor	95% LCL	95% UCL	Standard	Trend	
Vanadium	ug/L	OW-105B	13	0.550	0.000	0.494	0.550	0.550	35.000		
Vinyl chloride	ug/L	OW-105B	13	0.090	0.000	0.494	0.090	0.090	2.000		
Zinc	ug/L	OW-105B	13	5.000	0.000	0.494	5.000	5.000	2000.000		
1,4-dichlorobenzene	ug/L	OW-113B	16	0.115	0.000	0.438	0.115	0.115	75.000		
Antimony	ug/L	OW-113B	16	0.265	0.000	0.438	0.265	0.265	6.000		
Arsenic	ug/L	OW-113B	16	0.488	0.454	0.438	0.290	0.687	10.000		
Barium	ug/L	OW-113B	16	13.375	1.689	0.438	12.635	14.115	2000.000		
Benzene	ug/L	OW-113B	16	0.110	0.000	0.438	0.110	0.110	5.000		
Beryllium	ug/L	OW-113B	16	0.135	0.000	0.438	0.135	0.135	4.000		
Beta-bhc	ug/L	OW-113B	3								*
Cadmium	ug/L	OW-113B	16	0.041	0.025	0.438	0.030	0.052	5.000		
Chromium	ug/L	OW-113B	16	1.159	2.245	0.438	0.175	2.143	100.000		
Cis-1,2-dichloroethylene	ug/L	OW-113B	16	0.105	0.000	0.438	0.105	0.105	70.000		
Cobalt	ug/L	OW-113B	16	10.911	7.462	0.438	7.641	14.180	9.830		**
Copper	ug/L	OW-113B	16	0.900	0.000	0.438	0.900	0.900	1300.000		
Lead	ug/L	OW-113B	16	0.120	0.000	0.438	0.120	0.120	15.000		
Mercury	ug/L	OW-113B	3								*
Nickel	ug/L	OW-113B	16	17.765	4.171	0.438	15.937	19.593	722.000	inc	
Selenium	ug/L	OW-113B	16	0.480	0.000	0.438	0.480	0.480	50.000		
Silver	ug/L	OW-113B	16	0.185	0.000	0.438	0.185	0.185	100.000		
Thallium	ug/L	OW-113B	16	0.130	0.000	0.438	0.130	0.130	2.000		
Vanadium	ug/L	OW-113B	16	0.420	0.000	0.438	0.420	0.420	35.000		
Vinyl chloride	ug/L	OW-113B	16	0.090	0.000	0.438	0.090	0.090	2.000		
Zinc	ug/L	OW-113B	16	5.000	0.000	0.438	5.000	5.000	2000.000		
1,4-dichlorobenzene	ug/L	OW-205B	16	0.115	0.000	0.438	0.115	0.115	75.000		
Antimony	ug/L	OW-205B	16	0.308	0.173	0.438	0.232	0.384	6.000		
Arsenic	ug/L	OW-205B	16	10.616	4.495	0.438	8.646	12.586	10.000		**
Barium	ug/L	OW-205B	16	222.313	84.112	0.438	185.455	259.170	2000.000		
Benzene	ug/L	OW-205B	16	0.197	0.201	0.438	0.109	0.285	5.000		
Beryllium	ug/L	OW-205B	16	0.135	0.000	0.438	0.135	0.135	4.000		
Beta-bhc	ug/L	OW-205B	6	0.003	0.000	0.822	0.003	0.003	0.042		
Cadmium	ug/L	OW-205B	16	0.039	0.035	0.438	0.024	0.054	5.000		
Chromium	ug/L	OW-205B	16	0.767	0.596	0.438	0.506	1.028	100.000		
Cis-1,2-dichloroethylene	ug/L	OW-205B	16	0.327	0.360	0.438	0.169	0.484	70.000		
Cobalt	ug/L	OW-205B	16	4.116	0.949	0.438	3.700	4.532	9.830		
Copper	ug/L	OW-205B	16	3.706	11.225	0.438	0.000	8.625	1300.000		
Lead	ug/L	OW-205B	16	1.130	4.019	0.438	0.000	2.891	15.000		
Mercury	ug/L	OW-205B	5	0.055	0.000	0.953	0.055	0.055	2.000		
Nickel	ug/L	OW-205B	16	11.620	3.450	0.438	10.108	13.132	722.000	inc	
Selenium	ug/L	OW-205B	16	0.480	0.000	0.438	0.480	0.480	50.000		
Silver	ug/L	OW-205B	16	0.183	0.006	0.438	0.181	0.185	100.000		
Thallium	ug/L	OW-205B	16	0.130	0.000	0.438	0.130	0.130	2.000		
Vanadium	ug/L	OW-205B	16	0.420	0.000	0.438	0.420	0.420	35.000		
Vinyl chloride	ug/L	OW-205B	16	0.090	0.000	0.438	0.090	0.090	2.000		
Zinc	ug/L	OW-205B	16	5.000	0.000	0.438	5.000	5.000	2000.000		
1,4-dichlorobenzene	ug/L	OW-209B	16	0.115	0.000	0.438	0.115	0.115	75.000		
Antimony	ug/L	OW-209B	16	0.255	0.000	0.438	0.255	0.255	6.000		
Arsenic	ug/L	OW-209B	16	0.375	0.000	0.438	0.375	0.375	10.000		
Barium	ug/L	OW-209B	16	39.456	7.432	0.438	36.200	42.713	2000.000	inc	
Benzene	ug/L	OW-209B	16	0.110	0.000	0.438	0.110	0.110	5.000		
Beryllium	ug/L	OW-209B	16	0.135	0.000	0.438	0.135	0.135	4.000		
Beta-bhc	ug/L	OW-209B	3								*
Cadmium	ug/L	OW-209B	16	0.040	0.024	0.438	0.029	0.051	5.000		
Chromium	ug/L	OW-209B	16	0.591	0.113	0.438	0.542	0.641	100.000		
Cis-1,2-dichloroethylene	ug/L	OW-209B	16	0.105	0.000	0.438	0.105	0.105	70.000		
Cobalt	ug/L	OW-209B	16	0.180	0.316	0.438	0.042	0.319	9.830		
Copper	ug/L	OW-209B	16	2.281	2.193	0.438	1.320	3.242	1300.000		
Lead	ug/L	OW-209B	16	0.120	0.000	0.438	0.120	0.120	15.000		
Mercury	ug/L	OW-209B	3								*
Nickel	ug/L	OW-209B	16	7.167	3.325	0.438	5.710	8.624	722.000		
Selenium	ug/L	OW-209B	16	0.480	0.000	0.438	0.480	0.480	50.000		
Silver	ug/L	OW-209B	16	0.186	0.002	0.438	0.185	0.186	100.000		

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Constituent	Units	Well	N	Mean	SD	Factor	95% LCL	95% UCL	Standard	Trend	
Thallium	ug/L	OW-209B	16	0.130	0.000	0.438	0.130	0.130	2.000		
Vanadium	ug/L	OW-209B	16	0.420	0.000	0.438	0.420	0.420	35.000		
Vinyl chloride	ug/L	OW-209B	16	0.090	0.000	0.438	0.090	0.090	2.000		
Zinc	ug/L	OW-209B	16	5.000	0.000	0.438	5.000	5.000	2000.000		
1,4-dichlorobenzene	ug/L	OW-212B	11	0.115	0.000	0.546	0.115	0.115	75.000		
Antimony	ug/L	OW-212B	11	0.500	0.000	0.546	0.500	0.500	6.000		
Arsenic	ug/L	OW-212B	11	1.756	2.260	0.546	0.521	2.991	10.000		
Barium	ug/L	OW-212B	11	28.709	4.457	0.546	26.273	31.145	2000.000		
Benzene	ug/L	OW-212B	11	0.110	0.000	0.546	0.110	0.110	5.000		
Beryllium	ug/L	OW-212B	11	0.135	0.000	0.546	0.135	0.135	4.000		
Beta-bhc	ug/L	OW-212B	3								*
Cadmium	ug/L	OW-212B	12	0.197	0.175	0.518	0.106	0.288	5.000		
Chromium	ug/L	OW-212B	11	0.550	0.000	0.546	0.550	0.550	100.000		
Cis-1,2-dichloroethylene	ug/L	OW-212B	11	0.105	0.000	0.546	0.105	0.105	70.000		
Cobalt	ug/L	OW-212B	13	13.692	13.318	0.494	7.111	20.273	9.830		**
Copper	ug/L	OW-212B	11	4.438	4.739	0.546	1.848	7.028	1300.000		
Lead	ug/L	OW-212B	11	0.165	0.198	0.546	0.056	0.273	15.000		
Mercury	ug/L	OW-212B	3								*
Nickel	ug/L	OW-212B	11	20.396	14.150	0.546	12.664	28.129	722.000		
Selenium	ug/L	OW-212B	11	0.500	0.000	0.546	0.500	0.500	50.000		
Silver	ug/L	OW-212B	11	0.210	0.000	0.546	0.210	0.210	100.000		
Thallium	ug/L	OW-212B	11	0.231	0.335	0.546	0.048	0.414	2.000		
Vanadium	ug/L	OW-212B	11	0.550	0.000	0.546	0.550	0.550	35.000		
Vinyl chloride	ug/L	OW-212B	11	0.090	0.000	0.546	0.090	0.090	2.000		
Zinc	ug/L	OW-212B	11	5.000	0.000	0.546	5.000	5.000	2000.000		
1,4-dichlorobenzene	ug/L	OW-220B	12	3.343	5.478	0.518	0.505	6.182	75.000		
Antimony	ug/L	OW-220B	12	0.500	0.000	0.518	0.500	0.500	6.000		
Arsenic	ug/L	OW-220B	12	13.628	5.309	0.518	10.877	16.379	10.000		**
Barium	ug/L	OW-220B	12	826.917	136.538	0.518	756.162	897.671	2000.000		
Benzene	ug/L	OW-220B	12	5.047	8.663	0.518	0.557	9.536	5.000	dec	**
Beryllium	ug/L	OW-220B	12	0.135	0.000	0.518	0.135	0.135	4.000		
Beta-bhc	ug/L	OW-220B	3								*
Cadmium	ug/L	OW-220B	12	0.073	0.127	0.518	0.008	0.139	5.000		
Chromium	ug/L	OW-220B	12	5.789	1.314	0.518	5.108	6.470	100.000		
Cis-1,2-dichloroethylene	ug/L	OW-220B	12	1.246	3.953	0.518	0.000	3.295	70.000		
Cobalt	ug/L	OW-220B	12	23.992	5.149	0.518	21.323	26.660	9.830	dec	**
Copper	ug/L	OW-220B	12	1.266	1.267	0.518	0.609	1.923	1300.000		
Lead	ug/L	OW-220B	12	0.168	0.167	0.518	0.082	0.254	15.000		
Mercury	ug/L	OW-220B	3								*
Nickel	ug/L	OW-220B	12	119.725	15.760	0.518	111.558	127.892	722.000		
Selenium	ug/L	OW-220B	12	0.500	0.000	0.518	0.500	0.500	50.000		
Silver	ug/L	OW-220B	12	0.210	0.000	0.518	0.210	0.210	100.000		
Thallium	ug/L	OW-220B	12	0.247	0.407	0.518	0.037	0.458	2.000		
Vanadium	ug/L	OW-220B	12	0.550	0.000	0.518	0.550	0.550	35.000		
Vinyl chloride	ug/L	OW-220B	12	0.090	0.000	0.518	0.090	0.090	2.000		
Zinc	ug/L	OW-220B	12	5.000	0.000	0.518	5.000	5.000	2000.000		
1,4-dichlorobenzene	ug/L	OW-221B	12	0.115	0.000	0.518	0.115	0.115	75.000		
Antimony	ug/L	OW-221B	12	0.345	0.000	0.518	0.345	0.345	6.000		
Arsenic	ug/L	OW-221B	12	5.232	4.944	0.518	2.670	7.793	10.000	inc	
Barium	ug/L	OW-221B	12	463.917	263.274	0.518	327.487	600.346	2000.000		
Benzene	ug/L	OW-221B	12	0.898	0.455	0.518	0.662	1.134	5.000		
Beryllium	ug/L	OW-221B	12	0.135	0.000	0.518	0.135	0.135	4.000		
Beta-bhc	ug/L	OW-221B	3								*
Cadmium	ug/L	OW-221B	12	0.026	0.000	0.518	0.026	0.026	5.000		
Chromium	ug/L	OW-221B	12	0.550	0.000	0.518	0.550	0.550	100.000		
Cis-1,2-dichloroethylene	ug/L	OW-221B	12	0.950	0.704	0.518	0.585	1.315	70.000		
Cobalt	ug/L	OW-221B	12	5.320	1.748	0.518	4.414	6.226	9.830		
Copper	ug/L	OW-221B	12	0.900	0.000	0.518	0.900	0.900	1300.000		
Lead	ug/L	OW-221B	12	0.287	0.577	0.518	0.000	0.586	15.000		
Mercury	ug/L	OW-221B	3								*
Nickel	ug/L	OW-221B	12	4.438	3.309	0.518	2.723	6.152	722.000		
Selenium	ug/L	OW-221B	12	0.500	0.000	0.518	0.500	0.500	50.000		

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Table 1

Confidence Intervals for Comparing the Mean of the Last 16 Measurements to an Assessment Monitoring Standard

Constituent	Units	Well	N	Mean	SD	Factor	95% LCL	95% UCL	Standard	Trend	
Silver	ug/L	OW-221B	12	0.520	0.951	0.518	0.027	1.012	100.000		
Thallium	ug/L	OW-221B	12	0.222	0.320	0.518	0.056	0.389	2.000		
Vanadium	ug/L	OW-221B	12	0.550	0.000	0.518	0.550	0.550	35.000		
Vinyl chloride	ug/L	OW-221B	12	0.090	0.000	0.518	0.090	0.090	2.000		
Zinc	ug/L	OW-221B	12	5.000	0.000	0.518	5.000	5.000	2000.000		
1,4-dichlorobenzene	ug/L	OW-222B	12	0.115	0.000	0.518	0.115	0.115	75.000		
Antimony	ug/L	OW-222B	12	0.345	0.000	0.518	0.345	0.345	6.000		
Arsenic	ug/L	OW-222B	12	0.544	0.585	0.518	0.241	0.847	10.000		
Barium	ug/L	OW-222B	12	159.333	21.223	0.518	148.335	170.331	2000.000		
Benzene	ug/L	OW-222B	12	0.110	0.000	0.518	0.110	0.110	5.000		
Beryllium	ug/L	OW-222B	12	0.135	0.000	0.518	0.135	0.135	4.000		
Beta-bhc	ug/L	OW-222B	3								*
Cadmium	ug/L	OW-222B	12	0.083	0.096	0.518	0.033	0.133	5.000		
Chromium	ug/L	OW-222B	12	0.550	0.000	0.518	0.550	0.550	100.000		
Cis-1,2-dichloroethylene	ug/L	OW-222B	12	0.105	0.000	0.518	0.105	0.105	70.000		
Cobalt	ug/L	OW-222B	12	8.443	1.153	0.518	7.845	9.040	9.830	dec	
Copper	ug/L	OW-222B	12	3.906	7.885	0.518	0.000	7.992	1300.000		
Lead	ug/L	OW-222B	12	0.251	0.453	0.518	0.016	0.486	15.000		
Mercury	ug/L	OW-222B	3								*
Nickel	ug/L	OW-222B	12	21.471	12.201	0.518	15.148	27.794	722.000	dec	
Selenium	ug/L	OW-222B	12	0.500	0.000	0.518	0.500	0.500	50.000		
Silver	ug/L	OW-222B	12	0.210	0.000	0.518	0.210	0.210	100.000		
Thallium	ug/L	OW-222B	12	0.130	0.000	0.518	0.130	0.130	2.000		
Vanadium	ug/L	OW-222B	12	0.550	0.000	0.518	0.550	0.550	35.000		
Vinyl chloride	ug/L	OW-222B	12	0.090	0.000	0.518	0.090	0.090	2.000		
Zinc	ug/L	OW-222B	12	5.000	0.000	0.518	5.000	5.000	2000.000		
1,4-dichlorobenzene	ug/L	OW-223B	12	0.115	0.000	0.518	0.115	0.115	75.000		
Antimony	ug/L	OW-223B	12	0.345	0.000	0.518	0.345	0.345	6.000		
Arsenic	ug/L	OW-223B	12	0.375	0.000	0.518	0.375	0.375	10.000		
Barium	ug/L	OW-223B	12	115.267	39.811	0.518	94.636	135.897	2000.000	dec	
Benzene	ug/L	OW-223B	12	0.110	0.000	0.518	0.110	0.110	5.000		
Beryllium	ug/L	OW-223B	12	0.135	0.000	0.518	0.135	0.135	4.000		
Beta-bhc	ug/L	OW-223B	3								*
Cadmium	ug/L	OW-223B	12	0.026	0.000	0.518	0.026	0.026	5.000		
Chromium	ug/L	OW-223B	12	1.601	2.548	0.518	0.281	2.921	100.000		
Cis-1,2-dichloroethylene	ug/L	OW-223B	12	0.105	0.000	0.518	0.105	0.105	70.000		
Cobalt	ug/L	OW-223B	12	0.085	0.000	0.518	0.085	0.085	9.830		
Copper	ug/L	OW-223B	12	3.832	2.665	0.518	2.451	5.213	1300.000		
Lead	ug/L	OW-223B	12	0.120	0.000	0.518	0.120	0.120	15.000		
Mercury	ug/L	OW-223B	3								*
Nickel	ug/L	OW-223B	12	4.093	3.349	0.518	2.357	5.828	722.000		
Selenium	ug/L	OW-223B	12	0.500	0.000	0.518	0.500	0.500	50.000		
Silver	ug/L	OW-223B	12	0.210	0.000	0.518	0.210	0.210	100.000		
Thallium	ug/L	OW-223B	12	0.237	0.372	0.518	0.045	0.430	2.000		
Vanadium	ug/L	OW-223B	12	0.550	0.000	0.518	0.550	0.550	35.000		
Vinyl chloride	ug/L	OW-223B	12	0.090	0.000	0.518	0.090	0.090	2.000		
Zinc	ug/L	OW-223B	12	21.833	58.312	0.518	0.000	52.051	2000.000		
1,4-dichlorobenzene	ug/L	OW-224B	7	2.459	1.020	0.734	1.710	3.207	75.000		
Antimony	ug/L	OW-224B	7	0.500	0.000	0.734	0.500	0.500	6.000		
Arsenic	ug/L	OW-224B	7	5.387	1.687	0.734	4.148	6.626	10.000		
Barium	ug/L	OW-224B	7	2138.571	374.318	0.734	1863.782	2413.361	2000.000		**
Benzene	ug/L	OW-224B	7	2.894	1.464	0.734	1.820	3.969	5.000		
Beryllium	ug/L	OW-224B	7	0.165	0.000	0.734	0.165	0.165	4.000		
Beta-bhc	ug/L	OW-224B	2								*
Cadmium	ug/L	OW-224B	7	0.646	0.544	0.734	0.247	1.046	5.000		
Chromium	ug/L	OW-224B	7	7.467	3.106	0.734	5.187	9.747	100.000		
Cis-1,2-dichloroethylene	ug/L	OW-224B	7	0.442	0.577	0.734	0.019	0.866	70.000		
Cobalt	ug/L	OW-224B	7	35.614	16.328	0.734	23.627	47.601	9.830		**
Copper	ug/L	OW-224B	7	4.161	6.243	0.734	0.000	8.745	1300.000		
Lead	ug/L	OW-224B	7	1.308	0.342	0.734	1.057	1.560	15.000		
Mercury	ug/L	OW-224B	2								*
Nickel	ug/L	OW-224B	7	173.286	73.402	0.734	119.401	227.171	722.000		

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Table 1

Confidence Intervals for Comparing the Mean of the Last 16 Measurements to an Assessment Monitoring Standard

Constituent	Units	Well	N	Mean	SD	Factor	95% LCL	95% UCL	Standard	Trend	
Selenium	ug/L	OW-224B	7	0.700	0.000	0.734	0.700	0.700	50.000		
Silver	ug/L	OW-224B	7	0.250	0.000	0.734	0.250	0.250	100.000		
Thallium	ug/L	OW-224B	7	0.491	0.617	0.734	0.038	0.945	2.000		
Vanadium	ug/L	OW-224B	7	0.550	0.000	0.734	0.550	0.550	35.000		
Vinyl chloride	ug/L	OW-224B	7	0.090	0.000	0.734	0.090	0.090	2.000		
Zinc	ug/L	OW-224B	7	4.850	0.000	0.734	4.850	4.850	2000.000		
1,4-dichlorobenzene	ug/L	OW-225B	7	0.414	0.513	0.734	0.037	0.790	75.000		
Antimony	ug/L	OW-225B	7	0.500	0.000	0.734	0.500	0.500	6.000		
Arsenic	ug/L	OW-225B	8	3.343	2.545	0.670	1.638	5.047	10.000	inc	
Barium	ug/L	OW-225B	7	1447.143	216.927	0.734	1287.895	1606.390	2000.000		
Benzene	ug/L	OW-225B	7	1.056	0.173	0.734	0.929	1.183	5.000		
Beryllium	ug/L	OW-225B	7	0.165	0.000	0.734	0.165	0.165	4.000		
Beta-bhc	ug/L	OW-225B	2								*
Cadmium	ug/L	OW-225B	7	0.635	0.227	0.734	0.468	0.802	5.000		
Chromium	ug/L	OW-225B	7	1.957	3.723	0.734	0.000	4.690	100.000		
Cis-1,2-dichloroethylene	ug/L	OW-225B	7	0.408	0.517	0.734	0.028	0.788	70.000		
Cobalt	ug/L	OW-225B	7	29.657	4.580	0.734	26.295	33.019	9.830		**
Copper	ug/L	OW-225B	7	3.880	2.841	0.734	1.795	5.965	1300.000		
Lead	ug/L	OW-225B	7	0.695	0.503	0.734	0.326	1.064	15.000		
Mercury	ug/L	OW-225B	2								*
Nickel	ug/L	OW-225B	7	118.143	19.100	0.734	104.121	132.164	722.000		
Selenium	ug/L	OW-225B	7	0.700	0.000	0.734	0.700	0.700	50.000		
Silver	ug/L	OW-225B	7	0.250	0.000	0.734	0.250	0.250	100.000		
Thallium	ug/L	OW-225B	7	0.130	0.000	0.734	0.130	0.130	2.000		
Vanadium	ug/L	OW-225B	7	0.550	0.000	0.734	0.550	0.550	35.000		
Vinyl chloride	ug/L	OW-225B	7	0.090	0.000	0.734	0.090	0.090	2.000		
Zinc	ug/L	OW-225B	7	4.850	0.000	0.734	4.850	4.850	2000.000		
1,4-dichlorobenzene	ug/L	OW-226B	7	0.115	0.000	0.734	0.115	0.115	75.000		
Antimony	ug/L	OW-226B	7	0.500	0.000	0.734	0.500	0.500	6.000		
Arsenic	ug/L	OW-226B	8	6.679	2.660	0.670	4.898	8.461	10.000		
Barium	ug/L	OW-226B	7	1621.429	171.409	0.734	1495.596	1747.261	2000.000		
Benzene	ug/L	OW-226B	7	2.414	0.254	0.734	2.228	2.601	5.000		
Beryllium	ug/L	OW-226B	7	0.165	0.000	0.734	0.165	0.165	4.000		
Beta-bhc	ug/L	OW-226B	2								*
Cadmium	ug/L	OW-226B	7	0.211	0.155	0.734	0.097	0.324	5.000		
Chromium	ug/L	OW-226B	7	6.996	4.469	0.734	3.715	10.277	100.000		
Cis-1,2-dichloroethylene	ug/L	OW-226B	7	0.105	0.000	0.734	0.105	0.105	70.000		
Cobalt	ug/L	OW-226B	7	25.329	5.337	0.734	21.411	29.246	9.830		**
Copper	ug/L	OW-226B	7	1.536	1.682	0.734	0.301	2.770	1300.000		
Lead	ug/L	OW-226B	7	1.604	0.769	0.734	1.039	2.169	15.000		
Mercury	ug/L	OW-226B	2								*
Nickel	ug/L	OW-226B	7	80.186	9.423	0.734	73.268	87.104	722.000		
Selenium	ug/L	OW-226B	7	0.700	0.000	0.734	0.700	0.700	50.000		
Silver	ug/L	OW-226B	7	0.250	0.000	0.734	0.250	0.250	100.000		
Thallium	ug/L	OW-226B	7	0.285	0.000	0.734	0.285	0.285	2.000		
Vanadium	ug/L	OW-226B	7	0.550	0.000	0.734	0.550	0.550	35.000		
Vinyl chloride	ug/L	OW-226B	7	0.090	0.000	0.734	0.090	0.090	2.000		
Zinc	ug/L	OW-226B	7	4.850	0.000	0.734	4.850	4.850	2000.000		
1,4-dichlorobenzene	ug/L	OW-227B	7	0.115	0.000	0.734	0.115	0.115	75.000		
Antimony	ug/L	OW-227B	7	0.500	0.000	0.734	0.500	0.500	6.000		
Arsenic	ug/L	OW-227B	7	8.570	5.714	0.734	4.376	12.764	10.000		**
Barium	ug/L	OW-227B	7	1682.857	260.302	0.734	1491.768	1873.947	2000.000		
Benzene	ug/L	OW-227B	7	2.487	0.622	0.734	2.031	2.944	5.000	inc	
Beryllium	ug/L	OW-227B	7	0.165	0.000	0.734	0.165	0.165	4.000		
Beta-bhc	ug/L	OW-227B	2								*
Cadmium	ug/L	OW-227B	7	0.439	0.258	0.734	0.249	0.628	5.000		
Chromium	ug/L	OW-227B	7	5.497	2.289	0.734	3.817	7.178	100.000		
Cis-1,2-dichloroethylene	ug/L	OW-227B	7	0.105	0.000	0.734	0.105	0.105	70.000		
Cobalt	ug/L	OW-227B	7	25.986	5.970	0.734	21.603	30.368	9.830		**
Copper	ug/L	OW-227B	7	3.186	4.203	0.734	0.100	6.271	1300.000		
Lead	ug/L	OW-227B	7	0.263	0.245	0.734	0.083	0.443	15.000		
Mercury	ug/L	OW-227B	2								*

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Confidence Intervals for Comparing the Mean of the Last 16 Measurements to an Assessment Monitoring Standard

Constituent	Units	Well	N	Mean	SD	Factor	95% LCL	95% UCL	Standard	Trend	
Nickel	ug/L	OW-227B	7	83.929	8.888	0.734	77.404	90.453	722.000		
Selenium	ug/L	OW-227B	7	0.700	0.000	0.734	0.700	0.700	50.000		
Silver	ug/L	OW-227B	7	0.250	0.000	0.734	0.250	0.250	100.000		
Thallium	ug/L	OW-227B	7	0.130	0.000	0.734	0.130	0.130	2.000		
Vanadium	ug/L	OW-227B	7	0.550	0.000	0.734	0.550	0.550	35.000		
Vinyl chloride	ug/L	OW-227B	7	0.090	0.000	0.734	0.090	0.090	2.000		
Zinc	ug/L	OW-227B	7	4.850	0.000	0.734	4.850	4.850	2000.000		
1,4-dichlorobenzene	ug/L	OW-401B	16	0.461	0.470	0.438	0.255	0.667	75.000		
Antimony	ug/L	OW-401B	16	0.254	0.004	0.438	0.252	0.256	6.000		
Arsenic	ug/L	OW-401B	16	9.709	3.569	0.438	8.145	11.273	10.000		**
Barium	ug/L	OW-401B	16	1200.500	452.361	0.438	1002.281	1398.719	2000.000	inc	
Benzene	ug/L	OW-401B	16	4.063	1.298	0.438	3.494	4.631	5.000		
Beryllium	ug/L	OW-401B	16	0.135	0.000	0.438	0.135	0.135	4.000		
Beta-bhc	ug/L	OW-401B	16	0.043	0.029	0.438	0.031	0.056	0.042		**
Cadmium	ug/L	OW-401B	16	0.028	0.000	0.438	0.028	0.028	5.000		
Chromium	ug/L	OW-401B	16	0.796	0.454	0.438	0.597	0.995	100.000		
Cis-1,2-dichloroethylene	ug/L	OW-401B	16	0.151	0.100	0.438	0.107	0.194	70.000		
Cobalt	ug/L	OW-401B	16	10.117	6.852	0.438	7.115	13.119	9.830	dec	**
Copper	ug/L	OW-401B	16	0.900	0.000	0.438	0.900	0.900	1300.000		
Lead	ug/L	OW-401B	16	0.418	0.347	0.438	0.266	0.570	15.000		
Mercury	ug/L	OW-401B	9	0.059	0.013	0.620	0.051	0.067	2.000		
Nickel	ug/L	OW-401B	16	48.344	8.096	0.438	44.796	51.891	722.000		
Selenium	ug/L	OW-401B	16	0.480	0.000	0.438	0.480	0.480	50.000		
Silver	ug/L	OW-401B	16	0.184	0.006	0.438	0.181	0.186	100.000		
Thallium	ug/L	OW-401B	16	0.130	0.000	0.438	0.130	0.130	2.000		
Vanadium	ug/L	OW-401B	16	0.864	0.566	0.438	0.616	1.113	35.000		
Vinyl chloride	ug/L	OW-401B	16	0.090	0.000	0.438	0.090	0.090	2.000		
Zinc	ug/L	OW-401B	16	5.000	0.000	0.438	5.000	5.000	2000.000		
1,4-dichlorobenzene	ug/L	OW-402B	16	0.138	0.068	0.438	0.109	0.168	75.000		
Antimony	ug/L	OW-402B	16	0.255	0.000	0.438	0.255	0.255	6.000		
Arsenic	ug/L	OW-402B	16	0.431	0.121	0.438	0.378	0.484	10.000		
Barium	ug/L	OW-402B	16	725.313	221.997	0.438	628.036	822.589	2000.000	inc	
Benzene	ug/L	OW-402B	16	0.994	0.439	0.438	0.802	1.187	5.000		
Beryllium	ug/L	OW-402B	16	0.135	0.000	0.438	0.135	0.135	4.000		
Beta-bhc	ug/L	OW-402B	16	0.023	0.028	0.438	0.011	0.036	0.042		
Cadmium	ug/L	OW-402B	16	0.783	0.328	0.438	0.639	0.926	5.000		
Chromium	ug/L	OW-402B	16	8.565	11.820	0.438	3.386	13.745	100.000		
Cis-1,2-dichloroethylene	ug/L	OW-402B	16	16.075	8.196	0.438	12.484	19.667	70.000		
Cobalt	ug/L	OW-402B	16	8.901	5.640	0.438	6.429	11.372	9.830		**
Copper	ug/L	OW-402B	16	2.084	2.231	0.438	1.107	3.062	1300.000		
Lead	ug/L	OW-402B	16	0.120	0.000	0.438	0.120	0.120	15.000		
Mercury	ug/L	OW-402B	9	0.066	0.033	0.620	0.046	0.086	2.000		
Nickel	ug/L	OW-402B	16	455.112	348.953	0.438	302.206	608.019	722.000		
Selenium	ug/L	OW-402B	16	0.480	0.000	0.438	0.480	0.480	50.000		
Silver	ug/L	OW-402B	16	0.185	0.000	0.438	0.185	0.185	100.000		
Thallium	ug/L	OW-402B	16	0.130	0.000	0.438	0.130	0.130	2.000		
Vanadium	ug/L	OW-402B	16	0.420	0.000	0.438	0.420	0.420	35.000		
Vinyl chloride	ug/L	OW-402B	16	2.659	1.629	0.438	1.946	3.373	2.000	dec	**
Zinc	ug/L	OW-402B	16	5.000	0.000	0.438	5.000	5.000	2000.000		
1,4-dichlorobenzene	ug/L	OW-410B	15	0.202	0.199	0.455	0.111	0.292	75.000		
Antimony	ug/L	OW-410B	15	0.275	0.028	0.455	0.262	0.288	6.000		
Arsenic	ug/L	OW-410B	15	4.057	3.326	0.455	2.545	5.569	10.000	inc	
Barium	ug/L	OW-410B	15	1682.593	893.111	0.455	1276.520	2088.667	2000.000	inc	**
Benzene	ug/L	OW-410B	15	1.557	1.155	0.455	1.032	2.082	5.000		
Beryllium	ug/L	OW-410B	15	0.135	0.000	0.455	0.135	0.135	4.000		
Beta-bhc	ug/L	OW-410B	0								*
Cadmium	ug/L	OW-410B	15	0.179	0.285	0.455	0.049	0.308	5.000		
Chromium	ug/L	OW-410B	15	1.892	2.492	0.455	0.759	3.025	100.000		
Cis-1,2-dichloroethylene	ug/L	OW-410B	15	0.114	0.026	0.455	0.102	0.126	70.000		
Cobalt	ug/L	OW-410B	15	6.599	5.241	0.455	4.217	8.982	9.830		
Copper	ug/L	OW-410B	15	1.599	1.330	0.455	0.995	2.204	1300.000		
Lead	ug/L	OW-410B	15	0.139	0.054	0.455	0.114	0.163	15.000		

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** - Significant Exceedance
LCL = Lower Confidence Limit
UCL = Upper Confidence Limit

Table 1

Confidence Intervals for Comparing the Mean of the Last 16 Measurements to an Assessment Monitoring Standard

Constituent	Units	Well	N	Mean	SD	Factor	95% LCL	95% UCL	Standard	Trend	
Mercury	ug/L	OW-410B	0								*
Nickel	ug/L	OW-410B	15	42.930	44.851	0.455	22.538	63.322	722.000		
Selenium	ug/L	OW-410B	15	0.513	0.127	0.455	0.455	0.570	50.000		
Silver	ug/L	OW-410B	15	0.184	0.004	0.455	0.182	0.186	100.000		
Thallium	ug/L	OW-410B	15	0.128	0.009	0.455	0.123	0.132	2.000		
Vanadium	ug/L	OW-410B	15	1.170	0.869	0.455	0.775	1.565	35.000		
Vinyl chloride	ug/L	OW-410B	15	0.090	0.000	0.455	0.090	0.090	2.000		
Zinc	ug/L	OW-410B	15	5.199	0.769	0.455	4.849	5.549	2000.000		
1,4-dichlorobenzene	ug/L	OW-411B	15	0.115	0.000	0.455	0.115	0.115	75.000		
Antimony	ug/L	OW-411B	15	0.255	0.000	0.455	0.255	0.255	6.000		
Arsenic	ug/L	OW-411B	15	2.949	1.504	0.455	2.265	3.633	10.000	inc	
Barium	ug/L	OW-411B	15	519.533	117.447	0.455	466.133	572.933	2000.000		
Benzene	ug/L	OW-411B	15	1.270	0.838	0.455	0.889	1.651	5.000		
Beryllium	ug/L	OW-411B	15	0.135	0.000	0.455	0.135	0.135	4.000		
Beta-bhc	ug/L	OW-411B	0								*
Cadmium	ug/L	OW-411B	15	0.076	0.097	0.455	0.032	0.120	5.000		
Chromium	ug/L	OW-411B	15	2.123	3.137	0.455	0.697	3.549	100.000		
Cis-1,2-dichloroethylene	ug/L	OW-411B	15	0.279	0.207	0.455	0.184	0.373	70.000		
Cobalt	ug/L	OW-411B	15	4.596	2.619	0.455	3.405	5.787	9.830		
Copper	ug/L	OW-411B	15	1.283	1.070	0.455	0.797	1.770	1300.000		
Lead	ug/L	OW-411B	15	0.211	0.312	0.455	0.069	0.353	15.000		
Mercury	ug/L	OW-411B	0								*
Nickel	ug/L	OW-411B	15	31.737	26.945	0.455	19.486	43.988	722.000		
Selenium	ug/L	OW-411B	15	0.480	0.000	0.455	0.480	0.480	50.000		
Silver	ug/L	OW-411B	15	0.185	0.000	0.455	0.185	0.185	100.000		
Thallium	ug/L	OW-411B	15	0.130	0.000	0.455	0.130	0.130	2.000		
Vanadium	ug/L	OW-411B	15	0.970	0.841	0.455	0.588	1.353	35.000		
Vinyl chloride	ug/L	OW-411B	15	0.203	0.190	0.455	0.116	0.289	2.000		
Zinc	ug/L	OW-411B	15	5.553	2.143	0.455	4.579	6.528	2000.000		
1,4-dichlorobenzene	ug/L	OW-412B	15	0.115	0.000	0.455	0.115	0.115	75.000		
Antimony	ug/L	OW-412B	15	0.260	0.016	0.455	0.253	0.267	6.000		
Arsenic	ug/L	OW-412B	15	1.961	1.756	0.455	1.163	2.759	10.000		
Barium	ug/L	OW-412B	15	840.400	376.893	0.455	669.037	1011.763	2000.000	inc	
Benzene	ug/L	OW-412B	15	0.579	0.245	0.455	0.467	0.690	5.000		
Beryllium	ug/L	OW-412B	15	0.135	0.000	0.455	0.135	0.135	4.000		
Beta-bhc	ug/L	OW-412B	0								*
Cadmium	ug/L	OW-412B	15	0.068	0.068	0.455	0.037	0.099	5.000		
Chromium	ug/L	OW-412B	15	3.749	4.740	0.455	1.594	5.904	100.000		
Cis-1,2-dichloroethylene	ug/L	OW-412B	15	13.545	3.913	0.455	11.766	15.324	70.000	inc	
Cobalt	ug/L	OW-412B	15	1.636	0.604	0.455	1.361	1.911	9.830		
Copper	ug/L	OW-412B	15	1.079	0.692	0.455	0.764	1.393	1300.000		
Lead	ug/L	OW-412B	15	0.468	0.424	0.455	0.275	0.661	15.000		
Mercury	ug/L	OW-412B	0								*
Nickel	ug/L	OW-412B	15	14.095	8.409	0.455	10.272	17.919	722.000		
Selenium	ug/L	OW-412B	15	1.304	3.045	0.455	0.000	2.689	50.000		
Silver	ug/L	OW-412B	15	0.195	0.038	0.455	0.178	0.212	100.000		
Thallium	ug/L	OW-412B	15	0.241	0.603	0.455	0.000	0.515	2.000		
Vanadium	ug/L	OW-412B	15	1.653	1.688	0.455	0.886	2.421	35.000		
Vinyl chloride	ug/L	OW-412B	15	2.674	1.726	0.455	1.890	3.459	2.000		**
Zinc	ug/L	OW-412B	15	5.000	0.000	0.455	5.000	5.000	2000.000		
1,4-dichlorobenzene	ug/L	OW-413B	16	0.115	0.000	0.438	0.115	0.115	75.000		
Antimony	ug/L	OW-413B	16	0.299	0.037	0.438	0.283	0.315	6.000		
Arsenic	ug/L	OW-413B	16	6.221	2.129	0.438	5.288	7.154	10.000		
Barium	ug/L	OW-413B	16	468.000	82.399	0.438	431.894	504.106	2000.000		
Benzene	ug/L	OW-413B	16	1.547	0.345	0.438	1.396	1.699	5.000		
Beryllium	ug/L	OW-413B	16	0.135	0.000	0.438	0.135	0.135	4.000		
Beta-bhc	ug/L	OW-413B	0								*
Cadmium	ug/L	OW-413B	16	0.026	0.000	0.438	0.026	0.026	5.000		
Chromium	ug/L	OW-413B	16	3.687	5.048	0.438	1.475	5.900	100.000		
Cis-1,2-dichloroethylene	ug/L	OW-413B	16	0.411	0.417	0.438	0.228	0.593	70.000		
Cobalt	ug/L	OW-413B	16	3.796	1.237	0.438	3.254	4.338	9.830		
Copper	ug/L	OW-413B	16	0.900	0.000	0.438	0.900	0.900	1300.000		

* - Insufficient Data
** - Significant Exceedance
LCL = Lower Confidence Limit
UCL = Upper Confidence Limit

Table 1

Confidence Intervals for Comparing the Mean of the Last 16 Measurements to an Assessment Monitoring Standard

Constituent	Units	Well	N	Mean	SD	Factor	95% LCL	95% UCL	Standard	Trend	
Lead	ug/L	OW-413B	16	0.209	0.234	0.438	0.106	0.311	15.000		
Mercury	ug/L	OW-413B	0								*
Nickel	ug/L	OW-413B	16	2.774	2.507	0.438	1.676	3.873	722.000		
Selenium	ug/L	OW-413B	16	0.480	0.000	0.438	0.480	0.480	50.000		
Silver	ug/L	OW-413B	16	0.185	0.000	0.438	0.185	0.185	100.000		
Thallium	ug/L	OW-413B	16	0.130	0.000	0.438	0.130	0.130	2.000		
Vanadium	ug/L	OW-413B	16	1.167	1.371	0.438	0.566	1.768	35.000		
Vinyl chloride	ug/L	OW-413B	16	0.119	0.084	0.438	0.082	0.156	2.000		
Zinc	ug/L	OW-413B	16	5.000	0.000	0.438	5.000	5.000	2000.000		
1,4-dichlorobenzene	ug/L	OW-414B	15	1.266	1.250	0.455	0.698	1.835	75.000		
Antimony	ug/L	OW-414B	15	0.255	0.001	0.455	0.254	0.255	6.000		
Arsenic	ug/L	OW-414B	15	5.989	2.061	0.455	5.052	6.926	10.000		
Barium	ug/L	OW-414B	15	541.800	80.512	0.455	505.193	578.407	2000.000		
Benzene	ug/L	OW-414B	15	2.075	0.550	0.455	1.825	2.325	5.000		
Beryllium	ug/L	OW-414B	15	0.135	0.000	0.455	0.135	0.135	4.000		
Beta-bhc	ug/L	OW-414B	0								*
Cadmium	ug/L	OW-414B	15	0.088	0.119	0.455	0.035	0.142	5.000		
Chromium	ug/L	OW-414B	15	3.161	3.472	0.455	1.582	4.739	100.000		
Cis-1,2-dichloroethylene	ug/L	OW-414B	15	17.699	7.288	0.455	14.385	21.012	70.000	dec	
Cobalt	ug/L	OW-414B	15	19.014	4.912	0.455	16.780	21.248	9.830		**
Copper	ug/L	OW-414B	15	1.952	2.046	0.455	1.022	2.882	1300.000		
Lead	ug/L	OW-414B	15	0.130	0.000	0.455	0.130	0.130	15.000		
Mercury	ug/L	OW-414B	0								*
Nickel	ug/L	OW-414B	15	76.527	20.560	0.455	67.179	85.875	722.000		
Selenium	ug/L	OW-414B	15	0.497	0.068	0.455	0.467	0.528	50.000		
Silver	ug/L	OW-414B	15	0.185	0.000	0.455	0.185	0.185	100.000		
Thallium	ug/L	OW-414B	15	0.130	0.000	0.455	0.130	0.130	2.000		
Vanadium	ug/L	OW-414B	15	0.813	0.502	0.455	0.585	1.041	35.000		
Vinyl chloride	ug/L	OW-414B	15	2.941	2.077	0.455	1.997	3.886	2.000	dec	**
Zinc	ug/L	OW-414B	15	5.093	0.359	0.455	4.929	5.256	2000.000		

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** - Significant Exceedance
LCL = Lower Confidence Limit
UCL = Upper Confidence Limit

Worksheet 6 - Assessment Monitoring
1,4-dichlorobenzene (ug/L) at MW-409B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.84** / **16** = **0.115**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.212** - **3.386**/**16**) / (**16**-1))^{½} = **2.24**x**10**$^{-9}$	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.115** - **1.753** * **2.24**x**10**$^{-9}$/**16**^{½} = **0.115**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.115** + **1.753** * **2.24**x**10**$^{-9}$/**16**^{½} = **0.115**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N**' ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **0.0**^{½}) / 2 = [**115.5**, **115.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Antimony (ug/L) at MW-409B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **4.08** / **16** = **0.255**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1.04** - **16.646**/**16**) / (**16**-1))^{½} = **5.22**x**10**$^{-9}$	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.255** - **1.753** * **5.22**x**10**$^{-9}$/**16**^{½} = **0.255**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.255** + **1.753** * **5.22**x**10**$^{-9}$/**16**^{½} = **0.255**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **0.0**^{½}) / 2 = [**126.5**, **126.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Arsenic (ug/L) at MW-409B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **39.83** / **16** = **2.489**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**148.106** - **1586.429**/**16**) / (**16**-1))^{½} = **1.807**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **2.489** - **1.753** * **1.807**/**16**^{½} = **1.698**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **2.489** + **1.753** * **1.807**/**16**^{½} = **3.281**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.136**	Sen's estimator of trend.
7	var(S) = **1425.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **1425.0**^{½}) / 2 = [**77.879**, **175.121**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.142**, **0.469**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Barium (ug/L) at MW-409B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **562.2** / **16** = **35.138**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**21778.36** - **316068.84**/**16**) / (**16**-1))^{½} = **11.616**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **35.138** - **1.753** * **11.616**/**16**^{½} = **30.047**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **35.138** + **1.753** * **11.616**/**16**^{½} = **40.228**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **-1.894**	Sen's estimator of trend.
7	var(S) = **1433.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **1433.667**^{½}) / 2 = [**77.731**, **175.269**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-3.84**, **0.156**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Benzene (ug/L) at MW-409B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.172** / **16** = **0.136**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.377** - **4.718**/**16**) / (**16**-1))^{½} = **0.074**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.136** - **1.753** * **0.074**/**16**^{½} = **0.103**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.136** + **1.753** * **0.074**/**16**^{½} = **0.168**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **-0.028**	Sen's estimator of trend.
7	var(S) = **924.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **924.0**^{½}) / 2 = [**76.348**, **154.652**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.043**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Beryllium (ug/L) at MW-409B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.16** / **16** = **0.135**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.292** - **4.666**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.135** - **1.753** * **0.0**/**16**^{½} = **0.135**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.135** + **1.753** * **0.0**/**16**^{½} = **0.135**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **0.0**^{½}) / 2 = [**126.5**, **126.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Beta-bhc (ug/L) at MW-409B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.021** / **8** = **0.003**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**5.55**x**10**$^{-5}$ - **4.44**x**10**$^{-4}$/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.003** - **1.895** * **0.0**/**8**^{½} = **0.003**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.003** + **1.895** * **0.0**/**8**^{½} = **0.003**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **8** * (**8**-1) / 2 = **28**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**28** ± **2.576** * **0.0**^{½}) / 2 = [**14.0**, **14.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cadmium (ug/L) at MW-409B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.629** / **16** = **0.039**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.033** - **0.396**/**16**) / (**16**-1))^{½} = **0.023**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.039** - **1.753** * **0.023**/**16**^{½} = **0.029**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.039** + **1.753** * **0.023**/**16**^{½} = **0.049**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **939.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **939.333**^{½}) / 2 = [**87.025**, **165.975**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.004**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Chromium (ug/L) at MW-409B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **8.8** / **16** = **0.55**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**4.84** - **77.44**/**16**) / (**16**-1))^{½} = **1.37**x**10**$^{-8}$	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.55** - **1.753** * **1.37**x**10**$^{-8}$/**16**^{½} = **0.55**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.55** + **1.753** * **1.37**x**10**$^{-8}$/**16**^{½} = **0.55**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **176.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **176.0**^{½}) / 2 = [**109.413**, **143.587**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cis-1,2-dichloroethylene (ug/L) at MW-409B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.01** / **16** = **0.126**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.302** - **4.04**/**16**) / (**16**-1))^{½} = **0.057**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.126** - **1.753** * **0.057**/**16**^{½} = **0.101**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.126** + **1.753** * **0.057**/**16**^{½} = **0.151**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **764.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **764.333**^{½}) / 2 = [**79.891**, **151.109**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.022**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cobalt (ug/L) at MW-409B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **143.12** / **16** = **8.945**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1501.107** - **20483.334**/**16**) / (**16**-1))^{½} = **3.838**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **8.945** - **1.753** * **3.838**/**16**^{½} = **7.263**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **8.945** + **1.753** * **3.838**/**16**^{½} = **10.627**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **-1.454**	Sen's estimator of trend.
7	var(S) = **1431.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **1431.667**^{½}) / 2 = [**77.765**, **175.235**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-2.058**, **-0.701**]	Two-sided confidence interval for slope.
10	UCL(S) < 0	**Significant decreasing trend.**

Worksheet 6 - Assessment Monitoring
Copper (ug/L) at MW-409B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **18.5** / **16** = **1.156**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**37.15** - **342.25**/**16**) / (**16**-1))^{½} = **1.025**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **1.156** - **1.753** * **1.025**/**16**^{½} = **0.707**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **1.156** + **1.753** * **1.025**/**16**^{½} = **1.605**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **736.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **736.667**^{½}) / 2 = [**91.542**, **161.458**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Lead (ug/L) at MW-409B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.0** / **16** = **0.125**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.25** - **4.0**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.125** - **1.753** * **0.0**/**16**^{½} = **0.125**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.125** + **1.753** * **0.0**/**16**^{½} = **0.125**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **616.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **616.667**^{½}) / 2 = [**94.515**, **158.485**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Mercury (ug/L) at MW-409B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.613** / **10** = **0.061**	Compute the mean of the last 10 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.04** - **0.376**/**10**) / (**10**-1))^{½} = **0.017**	Compute sd of the last 10 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.061** - **1.833** * **0.017**/**10**^{½} = **0.052**	Compute lower confidence limit for the mean of the last 10 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.061** + **1.833** * **0.017**/**10**^{½} = **0.071**	Compute upper confidence limit for the mean of the last 10 measurements.
5	N' = **N** * (**N**-1) / 2 = **10** * (**10**-1) / 2 = **45**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **33.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**45** ± **2.576** * **33.0**^{½}) / 2 = [**15.101**, **29.899**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Nickel (ug/L) at MW-409B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **106.27** / **16** = **6.642**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**838.337** - **11293.313**/**16**) / (**16**-1))^{½} = **2.972**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **6.642** - **1.753** * **2.972**/**16**^{½} = **5.34**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **6.642** + **1.753** * **2.972**/**16**^{½} = **7.944**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **-0.639**	Sen's estimator of trend.
7	var(S) = **1432.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **1432.667**^{½}) / 2 = [**77.748**, **175.252**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-1.372**, **-0.069**]	Two-sided confidence interval for slope.
10	UCL(S) < 0	**Significant decreasing trend.**

Worksheet 6 - Assessment Monitoring
Selenium (ug/L) at MW-409B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **7.68** / **16** = **0.48**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**3.686** - **58.982**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.48** - **1.753** * **0.0**/**16**^{½} = **0.48**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.48** + **1.753** * **0.0**/**16**^{½} = **0.48**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **176.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **176.0**^{½}) / 2 = [**109.413**, **143.587**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Silver (ug/L) at MW-409B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.96** / **16** = **0.185**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.548** - **8.762**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.185** - **1.753** * **0.0**/**16**^{½} = **0.185**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.185** + **1.753** * **0.0**/**16**^{½} = **0.185**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **0.0**^{½}) / 2 = [**126.5**, **126.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Thallium (ug/L) at MW-409B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.08** / **16** = **0.13**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.27** - **4.326**/**16**) / (**16**-1))^{½} = **4.01**x**10**$^{-9}$	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.13** - **1.753** * **4.01**x**10**$^{-9}$/**16**^{½} = **0.13**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.13** + **1.753** * **4.01**x**10**$^{-9}$/**16**^{½} = **0.13**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **337.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **337.0**^{½}) / 2 = [**102.855**, **150.145**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Vanadium (ug/L) at MW-409B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **6.957** / **16** = **0.435**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**3.078** - **48.4**/**16**) / (**16**-1))^{½} = **0.059**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.435** - **1.753** * **0.059**/**16**^{½} = **0.409**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.435** + **1.753** * **0.059**/**16**^{½} = **0.461**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **483.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **483.667**^{½}) / 2 = [**98.174**, **154.826**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Vinyl chloride (ug/L) at MW-409B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.44** / **16** = **0.09**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.13** - **2.074**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.09** - **1.753** * **0.0**/**16**^{½} = **0.09**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.09** + **1.753** * **0.0**/**16**^{½} = **0.09**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **0.0**^{½}) / 2 = [**115.5**, **115.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Zinc (ug/L) at MW-409B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **80.0** / **16** = **5.0**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**400.0** - **6400.0**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **5.0** - **1.753** * **0.0**/**16**^{½} = **5.0**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **5.0** + **1.753** * **0.0**/**16**^{½} = **5.0**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **483.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **483.667**^{½}) / 2 = [**98.174**, **154.826**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
1,4-dichlorobenzene (ug/L) at MW-501B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.84** / **16** = **0.115**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.212** - **3.386**/**16**) / (**16**-1))^{½} = **2.24**x**10**$^{-9}$	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.115** - **1.753** * **2.24**x**10**$^{-9}$/**16**^{½} = **0.115**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.115** + **1.753** * **2.24**x**10**$^{-9}$/**16**^{½} = **0.115**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **24** * (**24**-1) / 2 = **276**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**276** ± **2.576** * **0.0**^{½}) / 2 = [**138.0**, **138.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Antimony (ug/L) at MW-501B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **4.24** / **16** = **0.265**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1.124** - **17.978**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.265** - **1.753** * **0.0**/**16**^{½} = **0.265**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.265** + **1.753** * **0.0**/**16**^{½} = **0.265**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **25** * (**25**-1) / 2 = **300**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **883.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**300** ± **2.576** * **883.333**^{½}) / 2 = [**111.719**, **188.281**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Arsenic (ug/L) at MW-501B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **7.26** / **16** = **0.454**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**6.622** - **52.708**/**16**) / (**16**-1))^{½} = **0.471**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.454** - **1.753** * **0.471**/**16**^{½} = **0.247**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.454** + **1.753** * **0.471**/**16**^{½} = **0.66**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **25** * (**25**-1) / 2 = **300**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **883.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**300** ± **2.576** * **883.333**^{½}) / 2 = [**111.719**, **188.281**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Barium (ug/L) at MW-501B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2782.1** / **16** = **173.881**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1.61**x**10^6** - **7.74**x**10^6**/**16**) / (**16**-1))^{½} = **273.855**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **173.881** - **1.753** * **273.855**/**16**^{½} = **53.881**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **173.881** + **1.753** * **273.855**/**16**^{½} = **293.881**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **26** * (**26**-1) / 2 = **325**	Number of sample pairs during trend detection period.
6	S = **2.865**	Sen's estimator of trend.
7	var(S) = **2055.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**325** ± **2.576** * **2055.333**^{½}) / 2 = [**104.108**, **220.892**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.777**, **4.871**]	Two-sided confidence interval for slope.
10	LCL(S) > 0	**Significant increasing trend.**

Worksheet 6 - Assessment Monitoring
Benzene (ug/L) at MW-501B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.76** / **16** = **0.11**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.194** - **3.098**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.11** - **1.753** * **0.0**/**16**^{½} = **0.11**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.11** + **1.753** * **0.0**/**16**^{½} = **0.11**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **24** * (**24**-1) / 2 = **276**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**276** ± **2.576** * **0.0**^{½}) / 2 = [**138.0**, **138.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Beryllium (ug/L) at MW-501B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.16** / **16** = **0.135**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.292** - **4.666**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.135** - **1.753** * **0.0**/**16**^{½} = **0.135**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.135** + **1.753** * **0.0**/**16**^{½} = **0.135**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **25** * (**25**-1) / 2 = **300**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **399.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**300** ± **2.576** * **399.667**^{½}) / 2 = [**124.251**, **175.749**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cadmium (ug/L) at MW-501B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.537** / **16** = **0.034**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.021** - **0.288**/**16**) / (**16**-1))^{½} = **0.014**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.034** - **1.753** * **0.014**/**16**^{½} = **0.027**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.034** + **1.753** * **0.014**/**16**^{½} = **0.04**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **25** * (**25**-1) / 2 = **300**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **399.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**300** ± **2.576** * **399.667**^{½}) / 2 = [**124.251**, **175.749**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Chromium (ug/L) at MW-501B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **32.85** / **16** = **2.053**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**287.608** - **1079.123**/**16**) / (**16**-1))^{½} = **3.831**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **2.053** - **1.753** * **3.831**/**16**^{½} = **0.374**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **2.053** + **1.753** * **3.831**/**16**^{½} = **3.732**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **25** * (**25**-1) / 2 = **300**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **1425.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**300** ± **2.576** * **1425.0**^{½}) / 2 = [**101.379**, **198.621**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.189**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cis-1,2-dichloroethylene (ug/L) at MW-501B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.68** / **16** = **0.105**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.176** - **2.822**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.105** - **1.753** * **0.0**/**16**^{½} = **0.105**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.105** + **1.753** * **0.0**/**16**^{½} = **0.105**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **24** * (**24**-1) / 2 = **276**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**276** ± **2.576** * **0.0**^{½}) / 2 = [**138.0**, **138.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cobalt (ug/L) at MW-501B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **10.739** / **16** = **0.671**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**21.789** - **115.326**/**16**) / (**16**-1))^{½} = **0.986**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.671** - **1.753** * **0.986**/**16**^{½} = **0.239**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.671** + **1.753** * **0.986**/**16**^{½} = **1.103**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **25** * (**25**-1) / 2 = **300**	Number of sample pairs during trend detection period.
6	S = **-0.039**	Sen's estimator of trend.
7	var(S) = **1768.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**300** ± **2.576** * **1768.0**^{½}) / 2 = [**95.843**, **204.157**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.161**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Copper (ug/L) at MW-501B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **16.51** / **16** = **1.032**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**18.99** - **272.58**/**16**) / (**16**-1))^{½} = **0.361**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **1.032** - **1.753** * **0.361**/**16**^{½} = **0.874**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **1.032** + **1.753** * **0.361**/**16**^{½} = **1.19**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **25** * (**25**-1) / 2 = **300**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **1136.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**300** ± **2.576** * **1136.333**^{½}) / 2 = [**106.582**, **193.418**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.036**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Lead (ug/L) at MW-501B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.112** / **16** = **0.132**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.313** - **4.461**/**16**) / (**16**-1))^{½} = **0.048**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.132** - **1.753** * **0.048**/**16**^{½} = **0.111**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.132** + **1.753** * **0.048**/**16**^{½} = **0.153**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **25** * (**25**-1) / 2 = **300**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **1016.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**300** ± **2.576** * **1016.333**^{½}) / 2 = [**108.939**, **191.061**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.014**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Nickel (ug/L) at MW-501B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **147.77** / **16** = **9.236**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1956.248** - **21835.973**/**16**) / (**16**-1))^{½} = **6.28**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **9.236** - **1.753** * **6.28**/**16**^{½} = **6.484**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **9.236** + **1.753** * **6.28**/**16**^{½} = **11.987**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **25** * (**25**-1) / 2 = **300**	Number of sample pairs during trend detection period.
6	S = **-0.889**	Sen's estimator of trend.
7	var(S) = **1827.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**300** ± **2.576** * **1827.667**^{½}) / 2 = [**94.936**, **205.064**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-2.236**, **0.333**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Selenium (ug/L) at MW-501B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **7.68** / **16** = **0.48**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**3.686** - **58.982**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.48** - **1.753** * **0.0**/**16**^{½} = **0.48**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.48** + **1.753** * **0.0**/**16**^{½} = **0.48**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **25** * (**25**-1) / 2 = **300**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**300** ± **2.576** * **0.0**^{½}) / 2 = [**150.0**, **150.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Silver (ug/L) at MW-501B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.4** / **16** = **0.15**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.36** - **5.76**/**16**) / (**16**-1))^{½} = **3.67**x**10**$^{-9}$	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.15** - **1.753** * **3.67**x**10**$^{-9}$/**16**^{½} = **0.15**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.15** + **1.753** * **3.67**x**10**$^{-9}$/**16**^{½} = **0.15**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **25** * (**25**-1) / 2 = **300**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **208.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**300** ± **2.576** * **208.0**^{½}) / 2 = [**131.424**, **168.576**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Thallium (ug/L) at MW-501B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.36** / **16** = **0.085**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.116** - **1.85**/**16**) / (**16**-1))^{½} = **1.62**x**10**$^{-9}$	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.085** - **1.753** * **1.62**x**10**$^{-9}$/**16**^{½} = **0.085**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.085** + **1.753** * **1.62**x**10**$^{-9}$/**16**^{½} = **0.085**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **25** * (**25**-1) / 2 = **300**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **208.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**300** ± **2.576** * **208.0**^{½}) / 2 = [**131.424**, **168.576**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Vanadium (ug/L) at MW-501B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **8.453** / **16** = **0.528**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**5.376** - **71.453**/**16**) / (**16**-1))^{½} = **0.246**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.528** - **1.753** * **0.246**/**16**^{½} = **0.42**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.528** + **1.753** * **0.246**/**16**^{½} = **0.636**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **25** * (**25**-1) / 2 = **300**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **1340.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**300** ± **2.576** * **1340.0**^{½}) / 2 = [**102.851**, **197.149**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.017**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Vinyl chloride (ug/L) at MW-501B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.44** / **16** = **0.09**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.13** - **2.074**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.09** - **1.753** * **0.0**/**16**^{½} = **0.09**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.09** + **1.753** * **0.0**/**16**^{½} = **0.09**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **24** * (**24**-1) / 2 = **276**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**276** ± **2.576** * **0.0**^{½}) / 2 = [**138.0**, **138.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Zinc (ug/L) at MW-501B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **89.1** / **16** = **5.569**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**573.81** - **7938.81**/**16**) / (**16**-1))^{½} = **2.275**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **5.569** - **1.753** * **2.275**/**16**^{½} = **4.572**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **5.569** + **1.753** * **2.275**/**16**^{½} = **6.566**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **25** * (**25**-1) / 2 = **300**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **575.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**300** ± **2.576** * **575.667**^{½}) / 2 = [**119.097**, **180.903**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
1,4-dichlorobenzene (ug/L) at MW-602B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.84** / **16** = **0.115**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.212** - **3.386**/**16**) / (**16**-1))^{½} = **2.24**x**10**$^{-9}$	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.115** - **1.753** * **2.24**x**10**$^{-9}$/**16**^{½} = **0.115**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.115** + **1.753** * **2.24**x**10**$^{-9}$/**16**^{½} = **0.115**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **0.0**^{½}) / 2 = [**126.5**, **126.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Antimony (ug/L) at MW-602B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **4.24** / **16** = **0.265**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1.124** - **17.978**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.265** - **1.753** * **0.0**/**16**^{½} = **0.265**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.265** + **1.753** * **0.0**/**16**^{½} = **0.265**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **736.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **736.667**^{½}) / 2 = [**91.542**, **161.458**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Arsenic (ug/L) at MW-602B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **6.0** / **16** = **0.375**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**2.25** - **36.0**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.375** - **1.753** * **0.0**/**16**^{½} = **0.375**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.375** + **1.753** * **0.0**/**16**^{½} = **0.375**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **176.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **176.0**^{½}) / 2 = [**109.413**, **143.587**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Barium (ug/L) at MW-602B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2006.2** / **16** = **125.388**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**258597.24** - **4.02**x**10^6**/**16**) / (**16**-1))^{½} = **21.672**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **125.388** - **1.753** * **21.672**/**16**^{½} = **115.891**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **125.388** + **1.753** * **21.672**/**16**^{½} = **134.884**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **-14.585**	Sen's estimator of trend.
7	var(S) = **1430.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **1430.667**^{½}) / 2 = [**77.782**, **175.218**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-24.214**, **-7.91**]	Two-sided confidence interval for slope.
10	UCL(S) < 0	**Significant decreasing trend.**

Worksheet 6 - Assessment Monitoring
Benzene (ug/L) at MW-602B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.76** / **16** = **0.11**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.194** - **3.098**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.11** - **1.753** * **0.0**/**16**^{½} = **0.11**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.11** + **1.753** * **0.0**/**16**^{½} = **0.11**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **0.0**^{½}) / 2 = [**126.5**, **126.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Beryllium (ug/L) at MW-602B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.16** / **16** = **0.135**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.292** - **4.666**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.135** - **1.753** * **0.0**/**16**^{½} = **0.135**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.135** + **1.753** * **0.0**/**16**^{½} = **0.135**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **0.0**^{½}) / 2 = [**126.5**, **126.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cadmium (ug/L) at MW-602B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.744** / **16** = **0.047**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.046** - **0.554**/**16**) / (**16**-1))^{½} = **0.027**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.047** - **1.753** * **0.027**/**16**^{½} = **0.034**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.047** + **1.753** * **0.027**/**16**^{½} = **0.059**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **616.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **616.667**^{½}) / 2 = [**94.515**, **158.485**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Chromium (ug/L) at MW-602B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **102.75** / **16** = **6.422**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1986.058** - **10557.563**/**16**) / (**16**-1))^{½} = **9.403**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **6.422** - **1.753** * **9.403**/**16**^{½} = **2.302**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **6.422** + **1.753** * **9.403**/**16**^{½} = **10.542**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **-3.41**	Sen's estimator of trend.
7	var(S) = **1268.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **1268.667**^{½}) / 2 = [**80.624**, **172.376**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-9.907**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cis-1,2-dichloroethylene (ug/L) at MW-602B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.68** / **16** = **0.105**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.176** - **2.822**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.105** - **1.753** * **0.0**/**16**^{½} = **0.105**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.105** + **1.753** * **0.0**/**16**^{½} = **0.105**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **0.0**^{½}) / 2 = [**126.5**, **126.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cobalt (ug/L) at MW-602B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **7.453** / **16** = **0.466**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**12.888** - **55.547**/**16**) / (**16**-1))^{½} = **0.792**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.466** - **1.753** * **0.792**/**16**^{½} = **0.119**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.466** + **1.753** * **0.792**/**16**^{½} = **0.813**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **-0.054**	Sen's estimator of trend.
7	var(S) = **1341.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **1341.667**^{½}) / 2 = [**79.322**, **173.678**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.166**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Copper (ug/L) at MW-602B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **14.4** / **16** = **0.9**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**12.96** - **207.36**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.9** - **1.753** * **0.0**/**16**^{½} = **0.9**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.9** + **1.753** * **0.0**/**16**^{½} = **0.9**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **940.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **940.333**^{½}) / 2 = [**87.004**, **165.996**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.622**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Lead (ug/L) at MW-602B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.0** / **16** = **0.125**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.25** - **4.0**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.125** - **1.753** * **0.0**/**16**^{½} = **0.125**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.125** + **1.753** * **0.0**/**16**^{½} = **0.125**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **844.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **844.333**^{½}) / 2 = [**89.074**, **163.926**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.001**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Nickel (ug/L) at MW-602B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **68.5** / **16** = **4.281**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**984.137** - **4692.25**/**16**) / (**16**-1))^{½} = **6.787**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **4.281** - **1.753** * **6.787**/**16**^{½} = **1.307**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **4.281** + **1.753** * **6.787**/**16**^{½} = **7.255**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **-2.247**	Sen's estimator of trend.
7	var(S) = **1308.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **1308.667**^{½}) / 2 = [**79.906**, **173.094**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-5.638**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Selenium (ug/L) at MW-602B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **8.64** / **16** = **0.54**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**5.05** - **74.65**/**16**) / (**16**-1))^{½} = **0.16**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.54** - **1.753** * **0.16**/**16**^{½} = **0.47**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.54** + **1.753** * **0.16**/**16**^{½} = **0.61**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **483.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **483.667**^{½}) / 2 = [**98.174**, **154.826**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Silver (ug/L) at MW-602B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.916** / **16** = **0.182**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.533** - **8.503**/**16**) / (**16**-1))^{½} = **0.011**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.182** - **1.753** * **0.011**/**16**^{½} = **0.177**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.182** + **1.753** * **0.011**/**16**^{½} = **0.187**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **337.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **337.0**^{½}) / 2 = [**102.855**, **150.145**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Thallium (ug/L) at MW-602B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.08** / **16** = **0.13**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.27** - **4.326**/**16**) / (**16**-1))^{½} = **4.01**x**10**$^{-9}$	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.13** - **1.753** * **4.01**x**10**$^{-9}$/**16**^{½} = **0.13**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.13** + **1.753** * **4.01**x**10**$^{-9}$/**16**^{½} = **0.13**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **0.0**^{½}) / 2 = [**126.5**, **126.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Vanadium (ug/L) at MW-602B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **11.13** / **16** = **0.696**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**8.776** - **123.877**/**16**) / (**16**-1))^{½} = **0.263**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.696** - **1.753** * **0.263**/**16**^{½} = **0.581**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.696** + **1.753** * **0.263**/**16**^{½} = **0.811**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **-0.105**	Sen's estimator of trend.
7	var(S) = **1221.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **1221.0**^{½}) / 2 = [**81.494**, **171.506**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.19**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Vinyl chloride (ug/L) at MW-602B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.44** / **16** = **0.09**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.13** - **2.074**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.09** - **1.753** * **0.0**/**16**^{½} = **0.09**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.09** + **1.753** * **0.0**/**16**^{½} = **0.09**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **0.0**^{½}) / 2 = [**126.5**, **126.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Zinc (ug/L) at MW-602B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **80.0** / **16** = **5.0**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**400.0** - **6400.0**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **5.0** - **1.753** * **0.0**/**16**^{½} = **5.0**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **5.0** + **1.753** * **0.0**/**16**^{½} = **5.0**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **337.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **337.0**^{½}) / 2 = [**102.855**, **150.145**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
1,4-dichlorobenzene (ug/L) at MW-603B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.84** / **16** = **0.115**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.212** - **3.386**/**16**) / (**16**-1))^{½} = **2.24**x**10**$^{-9}$	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.115** - **1.753** * **2.24**x**10**$^{-9}$/**16**^{½} = **0.115**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.115** + **1.753** * **2.24**x**10**$^{-9}$/**16**^{½} = **0.115**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **176.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **176.0**^{½}) / 2 = [**109.413**, **143.587**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Antimony (ug/L) at MW-603B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **4.663** / **16** = **0.291**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1.359** - **21.744**/**16**) / (**16**-1))^{½} = **0.006**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.291** - **1.753** * **0.006**/**16**^{½} = **0.289**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.291** + **1.753** * **0.006**/**16**^{½} = **0.294**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **844.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **844.333**^{½}) / 2 = [**89.074**, **163.926**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Arsenic (ug/L) at MW-603B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **22.685** / **16** = **1.418**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**57.683** - **514.609**/**16**) / (**16**-1))^{½} = **1.304**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **1.418** - **1.753** * **1.304**/**16**^{½} = **0.846**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **1.418** + **1.753** * **1.304**/**16**^{½} = **1.989**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **24** * (**24**-1) / 2 = **276**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **1356.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**276** ± **2.576** * **1356.667**^{½}) / 2 = [**90.559**, **185.441**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.269**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Barium (ug/L) at MW-603B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **742.3** / **16** = **46.394**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**36137.59** - **551009.29**/**16**) / (**16**-1))^{½} = **10.644**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **46.394** - **1.753** * **10.644**/**16**^{½} = **41.73**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **46.394** + **1.753** * **10.644**/**16**^{½} = **51.058**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **-6.063**	Sen's estimator of trend.
7	var(S) = **1433.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **1433.667**^{½}) / 2 = [**77.731**, **175.269**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-9.765**, **-3.891**]	Two-sided confidence interval for slope.
10	UCL(S) < 0	**Significant decreasing trend.**

Worksheet 6 - Assessment Monitoring
Benzene (ug/L) at MW-603B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.76** / **16** = **0.11**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.194** - **3.098**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.11** - **1.753** * **0.0**/**16**^{½} = **0.11**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.11** + **1.753** * **0.0**/**16**^{½} = **0.11**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **0.0**^{½}) / 2 = [**126.5**, **126.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Beryllium (ug/L) at MW-603B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.16** / **16** = **0.135**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.292** - **4.666**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.135** - **1.753** * **0.0**/**16**^{½} = **0.135**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.135** + **1.753** * **0.0**/**16**^{½} = **0.135**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **0.0**^{½}) / 2 = [**126.5**, **126.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cadmium (ug/L) at MW-603B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.48** / **16** = **0.03**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.014** - **0.23**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.03** - **1.753** * **0.0**/**16**^{½} = **0.03**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.03** + **1.753** * **0.0**/**16**^{½} = **0.03**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **0.0**^{½}) / 2 = [**126.5**, **126.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Chromium (ug/L) at MW-603B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **8.8** / **16** = **0.55**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**4.84** - **77.44**/**16**) / (**16**-1))^{½} = **1.37**x**10**$^{-8}$	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.55** - **1.753** * **1.37**x**10**$^{-8}$/**16**^{½} = **0.55**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.55** + **1.753** * **1.37**x**10**$^{-8}$/**16**^{½} = **0.55**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **940.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **940.333**^{½}) / 2 = [**87.004**, **165.996**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.315**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cis-1,2-dichloroethylene (ug/L) at MW-603B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.68** / **16** = **0.105**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.176** - **2.822**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.105** - **1.753** * **0.0**/**16**^{½} = **0.105**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.105** + **1.753** * **0.0**/**16**^{½} = **0.105**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **0.0**^{½}) / 2 = [**126.5**, **126.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cobalt (ug/L) at MW-603B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.606** / **16** = **0.1**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.184** - **2.579**/**16**) / (**16**-1))^{½} = **0.039**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.1** - **1.753** * **0.039**/**16**^{½} = **0.083**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.1** + **1.753** * **0.039**/**16**^{½} = **0.117**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **-0.046**	Sen's estimator of trend.
7	var(S) = **1221.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **1221.0**^{½}) / 2 = [**81.494**, **171.506**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.301**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Copper (ug/L) at MW-603B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **14.4** / **16** = **0.9**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**12.96** - **207.36**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.9** - **1.753** * **0.0**/**16**^{½} = **0.9**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.9** + **1.753** * **0.0**/**16**^{½} = **0.9**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **844.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **844.333**^{½}) / 2 = [**89.074**, **163.926**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.037**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Lead (ug/L) at MW-603B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.92** / **16** = **0.12**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.23** - **3.686**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.12** - **1.753** * **0.0**/**16**^{½} = **0.12**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.12** + **1.753** * **0.0**/**16**^{½} = **0.12**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **736.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **736.667**^{½}) / 2 = [**91.542**, **161.458**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.004**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Nickel (ug/L) at MW-603B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **15.55** / **16** = **0.972**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**15.228** - **241.803**/**16**) / (**16**-1))^{½} = **0.088**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.972** - **1.753** * **0.088**/**16**^{½} = **0.934**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.972** + **1.753** * **0.088**/**16**^{½} = **1.01**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **-0.173**	Sen's estimator of trend.
7	var(S) = **1025.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **1025.333**^{½}) / 2 = [**85.257**, **167.743**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.955**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Selenium (ug/L) at MW-603B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **8.0** / **16** = **0.5**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**4.0** - **64.0**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.5** - **1.753** * **0.0**/**16**^{½} = **0.5**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.5** + **1.753** * **0.0**/**16**^{½} = **0.5**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **0.0**^{½}) / 2 = [**126.5**, **126.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Silver (ug/L) at MW-603B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.927** / **16** = **0.183**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.536** - **8.567**/**16**) / (**16**-1))^{½} = **0.008**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.183** - **1.753** * **0.008**/**16**^{½} = **0.179**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.183** + **1.753** * **0.008**/**16**^{½} = **0.187**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **176.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **176.0**^{½}) / 2 = [**109.413**, **143.587**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Thallium (ug/L) at MW-603B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.08** / **16** = **0.13**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.27** - **4.326**/**16**) / (**16**-1))^{½} = **4.01**x**10**$^{-9}$	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.13** - **1.753** * **4.01**x**10**$^{-9}$/**16**^{½} = **0.13**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.13** + **1.753** * **4.01**x**10**$^{-9}$/**16**^{½} = **0.13**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **0.0**^{½}) / 2 = [**126.5**, **126.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Vanadium (ug/L) at MW-603B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **6.8** / **16** = **0.425**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**2.89** - **46.24**/**16**) / (**16**-1))^{½} = **1.09**x**10**$^{-8}$	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.425** - **1.753** * **1.09**x**10**$^{-8}$/**16**^{½} = **0.425**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.425** + **1.753** * **1.09**x**10**$^{-8}$/**16**^{½} = **0.425**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **844.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **844.333**^{½}) / 2 = [**89.074**, **163.926**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.025**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Vinyl chloride (ug/L) at MW-603B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.44** / **16** = **0.09**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.13** - **2.074**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.09** - **1.753** * **0.0**/**16**^{½} = **0.09**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.09** + **1.753** * **0.0**/**16**^{½} = **0.09**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **0.0**^{½}) / 2 = [**126.5**, **126.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Zinc (ug/L) at MW-603B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **80.0** / **16** = **5.0**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**400.0** - **6400.0**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **5.0** - **1.753** * **0.0**/**16**^{½} = **5.0**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **5.0** + **1.753** * **0.0**/**16**^{½} = **5.0**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **337.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **337.0**^{½}) / 2 = [**102.855**, **150.145**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
1,4-dichlorobenzene (ug/L) at MW-604B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.84** / **16** = **0.115**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.212** - **3.386**/**16**) / (**16**-1))^{½} = **2.24**x**10**$^{-9}$	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.115** - **1.753** * **2.24**x**10**$^{-9}$/**16**^{½} = **0.115**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.115** + **1.753** * **2.24**x**10**$^{-9}$/**16**^{½} = **0.115**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **0.0**^{½}) / 2 = [**126.5**, **126.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Antimony (ug/L) at MW-604B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **4.64** / **16** = **0.29**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1.346** - **21.53**/**16**) / (**16**-1))^{½} = **2.49**x**10**$^{-9}$	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.29** - **1.753** * **2.49**x**10**$^{-9}$/**16**^{½} = **0.29**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.29** + **1.753** * **2.49**x**10**$^{-9}$/**16**^{½} = **0.29**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **844.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **844.333**^{½}) / 2 = [**89.074**, **163.926**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.019**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Arsenic (ug/L) at MW-604B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **6.0** / **16** = **0.375**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**2.25** - **36.0**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.375** - **1.753** * **0.0**/**16**^{½} = **0.375**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.375** + **1.753** * **0.0**/**16**^{½} = **0.375**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **176.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **176.0**^{½}) / 2 = [**109.413**, **143.587**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Barium (ug/L) at MW-604B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1527.4** / **16** = **95.463**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**152178.14** - **2.33**x**10^6**/**16**) / (**16**-1))^{½} = **20.605**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **95.463** - **1.753** * **20.605**/**16**^{½} = **86.433**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **95.463** + **1.753** * **20.605**/**16**^{½} = **104.492**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **-11.916**	Sen's estimator of trend.
7	var(S) = **1432.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **1432.667**^{½}) / 2 = [**77.748**, **175.252**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-18.509**, **-7.596**]	Two-sided confidence interval for slope.
10	UCL(S) < 0	**Significant decreasing trend.**

Worksheet 6 - Assessment Monitoring
Benzene (ug/L) at MW-604B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.76** / **16** = **0.11**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.194** - **3.098**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.11** - **1.753** * **0.0**/**16**^{½} = **0.11**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.11** + **1.753** * **0.0**/**16**^{½} = **0.11**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **0.0**^{½}) / 2 = [**126.5**, **126.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Beryllium (ug/L) at MW-604B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.16** / **16** = **0.135**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.292** - **4.666**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.135** - **1.753** * **0.0**/**16**^{½} = **0.135**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.135** + **1.753** * **0.0**/**16**^{½} = **0.135**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **176.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **176.0**^{½}) / 2 = [**109.413**, **143.587**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cadmium (ug/L) at MW-604B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.573** / **16** = **0.036**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.024** - **0.328**/**16**) / (**16**-1))^{½} = **0.016**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.036** - **1.753** * **0.016**/**16**^{½} = **0.029**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.036** + **1.753** * **0.016**/**16**^{½} = **0.043**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **736.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **736.667**^{½}) / 2 = [**91.542**, **161.458**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Chromium (ug/L) at MW-604B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **37.71** / **16** = **2.357**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**232.135** - **1422.044**/**16**) / (**16**-1))^{½} = **3.09**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **2.357** - **1.753** * **3.09**/**16**^{½} = **1.003**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **2.357** + **1.753** * **3.09**/**16**^{½} = **3.711**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **24** * (**24**-1) / 2 = **276**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **1291.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**276** ± **2.576** * **1291.667**^{½}) / 2 = [**91.71**, **184.29**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.002**, **0.038**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cis-1,2-dichloroethylene (ug/L) at MW-604B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.68** / **16** = **0.105**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.176** - **2.822**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.105** - **1.753** * **0.0**/**16**^{½} = **0.105**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.105** + **1.753** * **0.0**/**16**^{½} = **0.105**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **0.0**^{½}) / 2 = [**126.5**, **126.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cobalt (ug/L) at MW-604B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **3.283** / **16** = **0.205**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1.282** - **10.778**/**16**) / (**16**-1))^{½} = **0.201**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.205** - **1.753** * **0.201**/**16**^{½} = **0.117**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.205** + **1.753** * **0.201**/**16**^{½} = **0.293**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **-0.062**	Sen's estimator of trend.
7	var(S) = **1308.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **1308.667**^{½}) / 2 = [**79.906**, **173.094**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.123**, **-0.005**]	Two-sided confidence interval for slope.
10	UCL(S) < 0	**Significant decreasing trend.**

Worksheet 6 - Assessment Monitoring
Copper (ug/L) at MW-604B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **14.4** / **16** = **0.9**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**12.96** - **207.36**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.9** - **1.753** * **0.0**/**16**^{½} = **0.9**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.9** + **1.753** * **0.0**/**16**^{½} = **0.9**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **844.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **844.333**^{½}) / 2 = [**89.074**, **163.926**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.252**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Lead (ug/L) at MW-604B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.92** / **16** = **0.12**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.23** - **3.686**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.12** - **1.753** * **0.0**/**16**^{½} = **0.12**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.12** + **1.753** * **0.0**/**16**^{½} = **0.12**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **616.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **616.667**^{½}) / 2 = [**94.515**, **158.485**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Nickel (ug/L) at MW-604B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **86.79** / **16** = **5.424**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1142.89** - **7532.504**/**16**) / (**16**-1))^{½} = **6.694**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **5.424** - **1.753** * **6.694**/**16**^{½} = **2.491**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **5.424** + **1.753** * **6.694**/**16**^{½} = **8.358**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **-0.097**	Sen's estimator of trend.
7	var(S) = **1405.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **1405.333**^{½}) / 2 = [**78.216**, **174.784**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.715**, **0.432**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Selenium (ug/L) at MW-604B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **8.0** / **16** = **0.5**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**4.0** - **64.0**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.5** - **1.753** * **0.0**/**16**^{½} = **0.5**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.5** + **1.753** * **0.0**/**16**^{½} = **0.5**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **0.0**^{½}) / 2 = [**126.5**, **126.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Silver (ug/L) at MW-604B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.96** / **16** = **0.185**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.548** - **8.762**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.185** - **1.753** * **0.0**/**16**^{½} = **0.185**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.185** + **1.753** * **0.0**/**16**^{½} = **0.185**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **337.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **337.0**^{½}) / 2 = [**102.855**, **150.145**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Thallium (ug/L) at MW-604B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.08** / **16** = **0.13**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.27** - **4.326**/**16**) / (**16**-1))^{½} = **4.01**x**10**$^{-9}$	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.13** - **1.753** * **4.01**x**10**$^{-9}$/**16**^{½} = **0.13**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.13** + **1.753** * **4.01**x**10**$^{-9}$/**16**^{½} = **0.13**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **0.0**^{½}) / 2 = [**126.5**, **126.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Vanadium (ug/L) at MW-604B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **9.262** / **16** = **0.579**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**5.455** - **85.785**/**16**) / (**16**-1))^{½} = **0.079**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.579** - **1.753** * **0.079**/**16**^{½} = **0.544**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.579** + **1.753** * **0.079**/**16**^{½} = **0.613**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **-0.037**	Sen's estimator of trend.
7	var(S) = **1100.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **1100.0**^{½}) / 2 = [**83.782**, **169.218**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.062**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Vinyl chloride (ug/L) at MW-604B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.44** / **16** = **0.09**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.13** - **2.074**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.09** - **1.753** * **0.0**/**16**^{½} = **0.09**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.09** + **1.753** * **0.0**/**16**^{½} = **0.09**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **0.0**^{½}) / 2 = [**126.5**, **126.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Zinc (ug/L) at MW-604B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **80.0** / **16** = **5.0**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**400.0** - **6400.0**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **5.0** - **1.753** * **0.0**/**16**^{½} = **5.0**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **5.0** + **1.753** * **0.0**/**16**^{½} = **5.0**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **483.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **483.667**^{½}) / 2 = [**98.174**, **154.826**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
1,4-dichlorobenzene (ug/L) at MW-711B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.035** / **9** = **0.115**	Compute the mean of the last 9 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.119** - **1.071**/**9**) / (**9**-1))^{½} = **0.0**	Compute sd of the last 9 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.115** - **1.86** * **0.0**/**9**^{½} = **0.115**	Compute lower confidence limit for the mean of the last 9 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.115** + **1.86** * **0.0**/**9**^{½} = **0.115**	Compute upper confidence limit for the mean of the last 9 measurements.
5	N' = **N** * (**N**-1) / 2 = **9** * (**9**-1) / 2 = **36**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**36** ± **2.576** * **0.0**^{½}) / 2 = [**18.0**, **18.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Antimony (ug/L) at MW-711B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **4.5** / **9** = **0.5**	Compute the mean of the last 9 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**2.25** - **20.25**/**9**) / (**9**-1))^{½} = **0.0**	Compute sd of the last 9 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.5** - **1.86** * **0.0**/**9**^{½} = **0.5**	Compute lower confidence limit for the mean of the last 9 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.5** + **1.86** * **0.0**/**9**^{½} = **0.5**	Compute upper confidence limit for the mean of the last 9 measurements.
5	N' = **N** * (**N**-1) / 2 = **9** * (**9**-1) / 2 = **36**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**36** ± **2.576** * **0.0**^{½}) / 2 = [**18.0**, **18.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Arsenic (ug/L) at MW-711B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **3.375** / **9** = **0.375**	Compute the mean of the last 9 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1.266** - **11.391**/**9**) / (**9**-1))^{½} = **0.0**	Compute sd of the last 9 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.375** - **1.86** * **0.0**/**9**^{½} = **0.375**	Compute lower confidence limit for the mean of the last 9 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.375** + **1.86** * **0.0**/**9**^{½} = **0.375**	Compute upper confidence limit for the mean of the last 9 measurements.
5	N' = **N** * (**N**-1) / 2 = **9** * (**9**-1) / 2 = **36**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**36** ± **2.576** * **0.0**^{½}) / 2 = [**18.0**, **18.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Barium (ug/L) at MW-711B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **580.2** / **9** = **64.467**	Compute the mean of the last 9 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**44185.3** - **336632.04**/**9**) / (**9**-1))^{½} = **29.116**	Compute sd of the last 9 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **64.467** - **1.86** * **29.116**/**9**^{½} = **46.42**	Compute lower confidence limit for the mean of the last 9 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **64.467** + **1.86** * **29.116**/**9**^{½} = **82.514**	Compute upper confidence limit for the mean of the last 9 measurements.
5	N' = **N** * (**N**-1) / 2 = **9** * (**9**-1) / 2 = **36**	Number of sample pairs during trend detection period.
6	S = **-12.367**	Sen's estimator of trend.
7	var(S) = **92.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**36** ± **2.576** * **92.0**^{½}) / 2 = [**5.646**, **30.354**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-59.753**, **-8.533**]	Two-sided confidence interval for slope.
10	UCL(S) < 0	**Significant decreasing trend.**

Worksheet 6 - Assessment Monitoring
Benzene (ug/L) at MW-711B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.99** / **9** = **0.11**	Compute the mean of the last 9 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.109** - **0.98**/**9**) / (**9**-1))^{½} = **0.0**	Compute sd of the last 9 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.11** - **1.86** * **0.0**/**9**^{½} = **0.11**	Compute lower confidence limit for the mean of the last 9 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.11** + **1.86** * **0.0**/**9**^{½} = **0.11**	Compute upper confidence limit for the mean of the last 9 measurements.
5	N' = **N** * (**N**-1) / 2 = **9** * (**9**-1) / 2 = **36**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**36** ± **2.576** * **0.0**^{½}) / 2 = [**18.0**, **18.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Beryllium (ug/L) at MW-711B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.215** / **9** = **0.135**	Compute the mean of the last 9 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.164** - **1.476**/**9**) / (**9**-1))^{½} = **0.0**	Compute sd of the last 9 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.135** - **1.86** * **0.0**/**9**^{½} = **0.135**	Compute lower confidence limit for the mean of the last 9 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.135** + **1.86** * **0.0**/**9**^{½} = **0.135**	Compute upper confidence limit for the mean of the last 9 measurements.
5	N' = **N** * (**N**-1) / 2 = **9** * (**9**-1) / 2 = **36**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**36** ± **2.576** * **0.0**^{½}) / 2 = [**18.0**, **18.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cadmium (ug/L) at MW-711B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.346** / **9** = **0.038**	Compute the mean of the last 9 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.022** - **0.12**/**9**) / (**9**-1))^{½} = **0.033**	Compute sd of the last 9 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.038** - **1.86** * **0.033**/**9**^{½} = **0.018**	Compute lower confidence limit for the mean of the last 9 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.038** + **1.86** * **0.033**/**9**^{½} = **0.059**	Compute upper confidence limit for the mean of the last 9 measurements.
5	N' = **N** * (**N**-1) / 2 = **9** * (**9**-1) / 2 = **36**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **26.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**36** ± **2.576** * **26.667**^{½}) / 2 = [**11.349**, **24.651**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Chromium (ug/L) at MW-711B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **4.95** / **9** = **0.55**	Compute the mean of the last 9 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**2.723** - **24.503**/**9**) / (**9**-1))^{½} = **1.31**x**10**$^{-8}$	Compute sd of the last 9 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.55** - **1.86** * **1.31**x**10**$^{-8}$/**9**^{½} = **0.55**	Compute lower confidence limit for the mean of the last 9 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.55** + **1.86** * **1.31**x**10**$^{-8}$/**9**^{½} = **0.55**	Compute upper confidence limit for the mean of the last 9 measurements.
5	N' = **N** * (**N**-1) / 2 = **9** * (**9**-1) / 2 = **36**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**36** ± **2.576** * **0.0**^{½}) / 2 = [**18.0**, **18.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cis-1,2-dichloroethylene (ug/L) at MW-711B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.945** / **9** = **0.105**	Compute the mean of the last 9 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.099** - **0.893**/**9**) / (**9**-1))^{½} = **0.0**	Compute sd of the last 9 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.105** - **1.86** * **0.0**/**9**^{½} = **0.105**	Compute lower confidence limit for the mean of the last 9 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.105** + **1.86** * **0.0**/**9**^{½} = **0.105**	Compute upper confidence limit for the mean of the last 9 measurements.
5	N' = **N** * (**N**-1) / 2 = **9** * (**9**-1) / 2 = **36**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**36** ± **2.576** * **0.0**^{½}) / 2 = [**18.0**, **18.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cobalt (ug/L) at MW-711B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **34.75** / **9** = **3.861**	Compute the mean of the last 9 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**142.345** - **1207.563/9**) / (**9**-1))^{½} = **1.011**	Compute sd of the last 9 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS/N**^{½} = **3.861** - **1.86** * **1.011/9**^{½} = **3.235**	Compute lower confidence limit for the mean of the last 9 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS/N**^{½} = **3.861** + **1.86** * **1.011/9**^{½} = **4.488**	Compute upper confidence limit for the mean of the last 9 measurements.
5	N' = **N** * (**N**-1) / 2 = **9** * (**9**-1) / 2 = **36**	Number of sample pairs during trend detection period.
6	S = **0.172**	Sen's estimator of trend.
7	var(S) = **92.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**36** ± **2.576** * **92.0**^{½}) / 2 = [**5.646**, **30.354**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-2.063**, **1.593**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Copper (ug/L) at MW-711B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **8.1** / **9** = **0.9**	Compute the mean of the last 9 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**7.29** - **65.61**/**9**) / (**9**-1))^{½} = **0.0**	Compute sd of the last 9 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.9** - **1.86** * **0.0**/**9**^{½} = **0.9**	Compute lower confidence limit for the mean of the last 9 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.9** + **1.86** * **0.0**/**9**^{½} = **0.9**	Compute upper confidence limit for the mean of the last 9 measurements.
5	N' = **N** * (**N**-1) / 2 = **9** * (**9**-1) / 2 = **36**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**36** ± **2.576** * **0.0**^{½}) / 2 = [**18.0**, **18.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Lead (ug/L) at MW-711B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.08** / **9** = **0.12**	Compute the mean of the last 9 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.13** - **1.166**/**9**) / (**9**-1))^{½} = **0.0**	Compute sd of the last 9 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.12** - **1.86** * **0.0**/**9**^{½} = **0.12**	Compute lower confidence limit for the mean of the last 9 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.12** + **1.86** * **0.0**/**9**^{½} = **0.12**	Compute upper confidence limit for the mean of the last 9 measurements.
5	N' = **N** * (**N**-1) / 2 = **9** * (**9**-1) / 2 = **36**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**36** ± **2.576** * **0.0**^{½}) / 2 = [**18.0**, **18.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Nickel (ug/L) at MW-711B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **130.77** / **10** = **13.077**	Compute the mean of the last 10 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1824.283** - **17100.793**/**10**) / (**10**-1))^{½} = **3.562**	Compute sd of the last 10 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **13.077** - **1.833** * **3.562**/**10**^{½} = **11.013**	Compute lower confidence limit for the mean of the last 10 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **13.077** + **1.833** * **3.562**/**10**^{½} = **15.141**	Compute upper confidence limit for the mean of the last 10 measurements.
5	N' = **N** * (**N**-1) / 2 = **10** * (**10**-1) / 2 = **45**	Number of sample pairs during trend detection period.
6	S = **3.556**	Sen's estimator of trend.
7	var(S) = **125.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**45** ± **2.576** * **125.0**^{½}) / 2 = [**8.1**, **36.9**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.608**, **6.753**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Selenium (ug/L) at MW-711B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **4.32** / **9** = **0.48**	Compute the mean of the last 9 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**2.074** - **18.662**/**9**) / (**9**-1))^{½} = **0.0**	Compute sd of the last 9 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.48** - **1.86** * **0.0**/**9**^{½} = **0.48**	Compute lower confidence limit for the mean of the last 9 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.48** + **1.86** * **0.0**/**9**^{½} = **0.48**	Compute upper confidence limit for the mean of the last 9 measurements.
5	N' = **N** * (**N**-1) / 2 = **9** * (**9**-1) / 2 = **36**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**36** ± **2.576** * **0.0**^{½}) / 2 = [**18.0**, **18.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Silver (ug/L) at MW-711B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.205** / **9** = **0.245**	Compute the mean of the last 9 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.54** - **4.862**/**9**) / (**9**-1))^{½} = **0.0**	Compute sd of the last 9 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.245** - **1.86** * **0.0**/**9**^{½} = **0.245**	Compute lower confidence limit for the mean of the last 9 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.245** + **1.86** * **0.0**/**9**^{½} = **0.245**	Compute upper confidence limit for the mean of the last 9 measurements.
5	N' = **N** * (**N**-1) / 2 = **9** * (**9**-1) / 2 = **36**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**36** ± **2.576** * **0.0**^{½}) / 2 = [**18.0**, **18.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Thallium (ug/L) at MW-711B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.17** / **9** = **0.13**	Compute the mean of the last 9 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.152** - **1.369**/**9**) / (**9**-1))^{½} = **1.98x10^{-9}**	Compute sd of the last 9 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.13** - **1.86** * **1.98x10^{-9}**/**9**^{½} = **0.13**	Compute lower confidence limit for the mean of the last 9 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.13** + **1.86** * **1.98x10^{-9}**/**9**^{½} = **0.13**	Compute upper confidence limit for the mean of the last 9 measurements.
5	N' = **N** * (**N**-1) / 2 = **9** * (**9**-1) / 2 = **36**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**36** ± **2.576** * **0.0**^{½}) / 2 = [**18.0**, **18.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Vanadium (ug/L) at MW-711B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **4.95** / **9** = **0.55**	Compute the mean of the last 9 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**2.723** - **24.503**/**9**) / (**9**-1))^{½} = **1.31**x**10**$^{-8}$	Compute sd of the last 9 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.55** - **1.86** * **1.31**x**10**$^{-8}$/**9**^{½} = **0.55**	Compute lower confidence limit for the mean of the last 9 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.55** + **1.86** * **1.31**x**10**$^{-8}$/**9**^{½} = **0.55**	Compute upper confidence limit for the mean of the last 9 measurements.
5	N' = **N** * (**N**-1) / 2 = **9** * (**9**-1) / 2 = **36**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**36** ± **2.576** * **0.0**^{½}) / 2 = [**18.0**, **18.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Vinyl chloride (ug/L) at MW-711B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.81** / **9** = **0.09**	Compute the mean of the last 9 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.073** - **0.656**/**9**) / (**9**-1))^{½} = **1.07x10^{-9}**	Compute sd of the last 9 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS/N**^{½} = **0.09** - **1.86** * **1.07x10^{-9}/9**^{½} = **0.09**	Compute lower confidence limit for the mean of the last 9 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS/N**^{½} = **0.09** + **1.86** * **1.07x10^{-9}/9**^{½} = **0.09**	Compute upper confidence limit for the mean of the last 9 measurements.
5	N' = **N** * (**N**-1) / 2 = **9** * (**9**-1) / 2 = **36**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**36** ± **2.576** * **0.0**^{½}) / 2 = [**18.0**, **18.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Zinc (ug/L) at MW-711B

Step	Equation	Description
1	$\bar{X}$ = **sum[X]** / **N** = **45.0** / **9** = **5.0**	Compute the mean of the last 9 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**225.0** - **2025.0**/**9**) / (**9**-1))^{½} = **0.0**	Compute sd of the last 9 measurements.
3	LCL = $\bar{\mathbf{X}}$ - **tS**/**N**^{½} = **5.0** - **1.86** * **0.0**/**9**^{½} = **5.0**	Compute lower confidence limit for the mean of the last 9 measurements.
4	UCL = $\bar{\mathbf{X}}$ + **tS**/**N**^{½} = **5.0** + **1.86** * **0.0**/**9**^{½} = **5.0**	Compute upper confidence limit for the mean of the last 9 measurements.
5	N' = **N** * (**N**-1) / 2 = **9** * (**9**-1) / 2 = **36**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**36** ± **2.576** * **0.0**^{½}) / 2 = [**18.0**, **18.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
1,4-dichlorobenzene (ug/L) at MW-712B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.035** / **9** = **0.115**	Compute the mean of the last 9 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.119** - **1.071**/**9**) / (**9**-1))^{½} = **0.0**	Compute sd of the last 9 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.115** - **1.86** * **0.0**/**9**^{½} = **0.115**	Compute lower confidence limit for the mean of the last 9 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.115** + **1.86** * **0.0**/**9**^{½} = **0.115**	Compute upper confidence limit for the mean of the last 9 measurements.
5	N' = **N** * (**N**-1) / 2 = **9** * (**9**-1) / 2 = **36**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**36** ± **2.576** * **0.0**^{½}) / 2 = [**18.0**, **18.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Antimony (ug/L) at MW-712B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **4.5** / **9** = **0.5**	Compute the mean of the last 9 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**2.25** - **20.25**/**9**) / (**9**-1))^{½} = **0.0**	Compute sd of the last 9 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.5** - **1.86** * **0.0**/**9**^{½} = **0.5**	Compute lower confidence limit for the mean of the last 9 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.5** + **1.86** * **0.0**/**9**^{½} = **0.5**	Compute upper confidence limit for the mean of the last 9 measurements.
5	N' = **N** * (**N**-1) / 2 = **9** * (**9**-1) / 2 = **36**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**36** ± **2.576** * **0.0**^{½}) / 2 = [**18.0**, **18.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Arsenic (ug/L) at MW-712B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **6.54** / **9** = **0.727**	Compute the mean of the last 9 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**20.098** - **42.772**/**9**) / (**9**-1))^{½} = **1.385**	Compute sd of the last 9 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.727** - **1.86** * **1.385**/**9**^{½} = **0.0**	Compute lower confidence limit for the mean of the last 9 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.727** + **1.86** * **1.385**/**9**^{½} = **1.585**	Compute upper confidence limit for the mean of the last 9 measurements.
5	N' = **N** * (**N**-1) / 2 = **9** * (**9**-1) / 2 = **36**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **26.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**36** ± **2.576** * **26.667**^{½}) / 2 = [**11.349**, **24.651**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Barium (ug/L) at MW-712B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **701.8** / **9** = **77.978**	Compute the mean of the last 9 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**63116.2** - **492523.24**/**9**) / (**9**-1))^{½} = **32.387**	Compute sd of the last 9 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **77.978** - **1.86** * **32.387**/**9**^{½} = **57.903**	Compute lower confidence limit for the mean of the last 9 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **77.978** + **1.86** * **32.387**/**9**^{½} = **98.053**	Compute upper confidence limit for the mean of the last 9 measurements.
5	N' = **N** * (**N**-1) / 2 = **9** * (**9**-1) / 2 = **36**	Number of sample pairs during trend detection period.
6	S = **-19.214**	Sen's estimator of trend.
7	var(S) = **92.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**36** ± **2.576** * **92.0**^{½}) / 2 = [**5.646**, **30.354**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-77.15**, **15.588**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Benzene (ug/L) at MW-712B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.99** / **9** = **0.11**	Compute the mean of the last 9 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.109** - **0.98**/**9**) / (**9**-1))^{½} = **0.0**	Compute sd of the last 9 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.11** - **1.86** * **0.0**/**9**^{½} = **0.11**	Compute lower confidence limit for the mean of the last 9 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.11** + **1.86** * **0.0**/**9**^{½} = **0.11**	Compute upper confidence limit for the mean of the last 9 measurements.
5	N' = **N** * (**N**-1) / 2 = **9** * (**9**-1) / 2 = **36**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**36** ± **2.576** * **0.0**^{½}) / 2 = [**18.0**, **18.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Beryllium (ug/L) at MW-712B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.485** / **9** = **0.165**	Compute the mean of the last 9 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.245** - **2.205**/**9**) / (**9**-1))^{½} = **0.0**	Compute sd of the last 9 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.165** - **1.86** * **0.0**/**9**^{½} = **0.165**	Compute lower confidence limit for the mean of the last 9 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.165** + **1.86** * **0.0**/**9**^{½} = **0.165**	Compute upper confidence limit for the mean of the last 9 measurements.
5	N' = **N** * (**N**-1) / 2 = **9** * (**9**-1) / 2 = **36**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**36** ± **2.576** * **0.0**^{½}) / 2 = [**18.0**, **18.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cadmium (ug/L) at MW-712B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.902** / **10** = **0.19**	Compute the mean of the last 10 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.598** - **3.618**/**10**) / (**10**-1))^{½} = **0.162**	Compute sd of the last 10 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.19** - **1.833** * **0.162**/**10**^{½} = **0.096**	Compute lower confidence limit for the mean of the last 10 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.19** + **1.833** * **0.162**/**10**^{½} = **0.284**	Compute upper confidence limit for the mean of the last 10 measurements.
5	N' = **N** * (**N**-1) / 2 = **10** * (**10**-1) / 2 = **45**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **116.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**45** ± **2.576** * **116.333**^{½}) / 2 = [**8.608**, **36.392**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.312**, **0.188**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Chromium (ug/L) at MW-712B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **4.95** / **9** = **0.55**	Compute the mean of the last 9 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**2.723** - **24.503**/**9**) / (**9**-1))^{½} = **1.31**x**10**$^{-8}$	Compute sd of the last 9 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.55** - **1.86** * **1.31**x**10**$^{-8}$/**9**^{½} = **0.55**	Compute lower confidence limit for the mean of the last 9 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.55** + **1.86** * **1.31**x**10**$^{-8}$/**9**^{½} = **0.55**	Compute upper confidence limit for the mean of the last 9 measurements.
5	N' = **N** * (**N**-1) / 2 = **9** * (**9**-1) / 2 = **36**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**36** ± **2.576** * **0.0**^{½}) / 2 = [**18.0**, **18.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cis-1,2-dichloroethylene (ug/L) at MW-712B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.945** / **9** = **0.105**	Compute the mean of the last 9 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.099** - **0.893**/**9**) / (**9**-1))^{½} = **0.0**	Compute sd of the last 9 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.105** - **1.86** * **0.0**/**9**^{½} = **0.105**	Compute lower confidence limit for the mean of the last 9 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.105** + **1.86** * **0.0**/**9**^{½} = **0.105**	Compute upper confidence limit for the mean of the last 9 measurements.
5	N' = **N** * (**N**-1) / 2 = **9** * (**9**-1) / 2 = **36**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**36** ± **2.576** * **0.0**^{½}) / 2 = [**18.0**, **18.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cobalt (ug/L) at MW-712B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **64.935** / **11** = **5.903**	Compute the mean of the last 11 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**479.704** - **4216.554**/**11**) / (**11**-1))^{½} = **3.105**	Compute sd of the last 11 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **5.903** - **1.812** * **3.105**/**11**^{½} = **4.207**	Compute lower confidence limit for the mean of the last 11 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **5.903** + **1.812** * **3.105**/**11**^{½} = **7.6**	Compute upper confidence limit for the mean of the last 11 measurements.
5	N' = **N** * (**N**-1) / 2 = **11** * (**11**-1) / 2 = **55**	Number of sample pairs during trend detection period.
6	S = **-0.553**	Sen's estimator of trend.
7	var(S) = **165.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**55** ± **2.576** * **165.0**^{½}) / 2 = [**10.955**, **44.045**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-2.801**, **3.932**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Copper (ug/L) at MW-712B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **22.0** / **9** = **2.444**	Compute the mean of the last 9 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**225.52** - **484.0**/**9**) / (**9**-1))^{½} = **4.633**	Compute sd of the last 9 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **2.444** - **1.86** * **4.633**/**9**^{½} = **0.0**	Compute lower confidence limit for the mean of the last 9 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **2.444** + **1.86** * **4.633**/**9**^{½} = **5.316**	Compute upper confidence limit for the mean of the last 9 measurements.
5	N' = **N** * (**N**-1) / 2 = **9** * (**9**-1) / 2 = **36**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **26.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**36** ± **2.576** * **26.667**^{½}) / 2 = [**11.349**, **24.651**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Lead (ug/L) at MW-712B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **3.105** / **9** = **0.345**	Compute the mean of the last 9 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**3.333** - **9.641**/**9**) / (**9**-1))^{½} = **0.532**	Compute sd of the last 9 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.345** - **1.86** * **0.532**/**9**^{½} = **0.015**	Compute lower confidence limit for the mean of the last 9 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.345** + **1.86** * **0.532**/**9**^{½} = **0.675**	Compute upper confidence limit for the mean of the last 9 measurements.
5	N' = **N** * (**N**-1) / 2 = **9** * (**9**-1) / 2 = **36**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **47.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**36** ± **2.576** * **47.667**^{½}) / 2 = [**9.108**, **26.892**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.255**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Nickel (ug/L) at MW-712B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **77.42** / **9** = **8.602**	Compute the mean of the last 9 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**751.521** - **5993.856**/**9**) / (**9**-1))^{½} = **3.27**	Compute sd of the last 9 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **8.602** - **1.86** * **3.27**/**9**^{½} = **6.575**	Compute lower confidence limit for the mean of the last 9 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **8.602** + **1.86** * **3.27**/**9**^{½} = **10.629**	Compute upper confidence limit for the mean of the last 9 measurements.
5	N' = **N** * (**N**-1) / 2 = **9** * (**9**-1) / 2 = **36**	Number of sample pairs during trend detection period.
6	S = **-0.384**	Sen's estimator of trend.
7	var(S) = **91.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**36** ± **2.576** * **91.0**^{½}) / 2 = [**5.713**, **30.287**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-4.212**, **3.823**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Selenium (ug/L) at MW-712B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **138.84** / **9** = **15.427**	Compute the mean of the last 9 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**18226.843** - **19276.546**/**9**) / (**9**-1))^{½} = **44.84**	Compute sd of the last 9 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **15.427** - **1.86** * **44.84**/**9**^{½} = **0.0**	Compute lower confidence limit for the mean of the last 9 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **15.427** + **1.86** * **44.84**/**9**^{½} = **43.22**	Compute upper confidence limit for the mean of the last 9 measurements.
5	N' = **N** * (**N**-1) / 2 = **9** * (**9**-1) / 2 = **36**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **26.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**36** ± **2.576** * **26.667**^{½}) / 2 = [**11.349**, **24.651**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Silver (ug/L) at MW-712B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.205** / **9** = **0.245**	Compute the mean of the last 9 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.54** - **4.862**/**9**) / (**9**-1))^{½} = **0.0**	Compute sd of the last 9 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.245** - **1.86** * **0.0**/**9**^{½} = **0.245**	Compute lower confidence limit for the mean of the last 9 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.245** + **1.86** * **0.0**/**9**^{½} = **0.245**	Compute upper confidence limit for the mean of the last 9 measurements.
5	N' = **N** * (**N**-1) / 2 = **9** * (**9**-1) / 2 = **36**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**36** ± **2.576** * **0.0**^{½}) / 2 = [**18.0**, **18.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Thallium (ug/L) at MW-712B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **3.96** / **10** = **0.396**	Compute the mean of the last 10 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**7.936** - **15.682**/**10**) / (**10**-1))^{½} = **0.841**	Compute sd of the last 10 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.396** - **1.833** * **0.841**/**10**^{½} = **0.0**	Compute lower confidence limit for the mean of the last 10 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.396** + **1.833** * **0.841**/**10**^{½} = **0.883**	Compute upper confidence limit for the mean of the last 10 measurements.
5	N' = **N** * (**N**-1) / 2 = **10** * (**10**-1) / 2 = **45**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **33.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**45** ± **2.576** * **33.0**^{½}) / 2 = [**15.101**, **29.899**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Vanadium (ug/L) at MW-712B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **4.95** / **9** = **0.55**	Compute the mean of the last 9 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**2.723** - **24.503**/**9**) / (**9**-1))^{½} = **1.31**x**10**$^{-8}$	Compute sd of the last 9 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.55** - **1.86** * **1.31**x**10**$^{-8}$/**9**^{½} = **0.55**	Compute lower confidence limit for the mean of the last 9 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.55** + **1.86** * **1.31**x**10**$^{-8}$/**9**^{½} = **0.55**	Compute upper confidence limit for the mean of the last 9 measurements.
5	N' = **N** * (**N**-1) / 2 = **9** * (**9**-1) / 2 = **36**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**36** ± **2.576** * **0.0**^{½}) / 2 = [**18.0**, **18.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Vinyl chloride (ug/L) at MW-712B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.81** / **9** = **0.09**	Compute the mean of the last 9 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.073** - **0.656**/**9**) / (**9**-1))^{½} = **1.07x10^{-9}**	Compute sd of the last 9 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.09** - **1.86** * **1.07x10^{-9}**/**9**^{½} = **0.09**	Compute lower confidence limit for the mean of the last 9 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.09** + **1.86** * **1.07x10^{-9}**/**9**^{½} = **0.09**	Compute upper confidence limit for the mean of the last 9 measurements.
5	N' = **N** * (**N**-1) / 2 = **9** * (**9**-1) / 2 = **36**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**36** ± **2.576** * **0.0**^{½}) / 2 = [**18.0**, **18.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Zinc (ug/L) at MW-712B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **45.0** / **9** = **5.0**	Compute the mean of the last 9 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**225.0** - **2025.0**/**9**) / (**9**-1))^{½} = **0.0**	Compute sd of the last 9 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **5.0** - **1.86** * **0.0**/**9**^{½} = **5.0**	Compute lower confidence limit for the mean of the last 9 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **5.0** + **1.86** * **0.0**/**9**^{½} = **5.0**	Compute upper confidence limit for the mean of the last 9 measurements.
5	N' = **N** * (**N**-1) / 2 = **9** * (**9**-1) / 2 = **36**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**36** ± **2.576** * **0.0**^{½}) / 2 = [**18.0**, **18.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
1,4-dichlorobenzene (ug/L) at OW-101B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.805** / **7** = **0.115**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.093** - **0.648**/**7**) / (**7**-1))^{½} = **0.0**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.115** - **1.942** * **0.0**/**7**^{½} = **0.115**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.115** + **1.942** * **0.0**/**7**^{½} = **0.115**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Antimony (ug/L) at OW-101B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **3.5** / **7** = **0.5**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1.75** - **12.25**/**7**) / (**7**-1))^{½} = **0.0**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.5** - **1.942** * **0.0**/**7**^{½} = **0.5**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.5** + **1.942** * **0.0**/**7**^{½} = **0.5**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Arsenic (ug/L) at OW-101B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.855** / **7** = **0.265**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.492** - **3.441**/**7**) / (**7**-1))^{½} = **0.0**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.265** - **1.942** * **0.0**/**7**^{½} = **0.265**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.265** + **1.942** * **0.0**/**7**^{½} = **0.265**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Barium (ug/L) at OW-101B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1246.0** / **7** = **178.0**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**222576.0** - **1.55**x**10^6**/**7**) / (**7**-1))^{½} = **11.46**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **178.0** - **1.942** * **11.46**/**7**^{½} = **169.587**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **178.0** + **1.942** * **11.46**/**7**^{½} = **186.413**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **11.224**	Sen's estimator of trend.
7	var(S) = **43.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **43.333**^{½}) / 2 = [**2.021**, **18.979**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-55.849**, **30.79**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Benzene (ug/L) at OW-101B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.77** / **7** = **0.11**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.085** - **0.593**/**7**) / (**7**-1))^{½} = **0.0**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.11** - **1.942** * **0.0**/**7**^{½} = **0.11**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.11** + **1.942** * **0.0**/**7**^{½} = **0.11**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Beryllium (ug/L) at OW-101B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.155** / **7** = **0.165**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.191** - **1.334**/**7**) / (**7**-1))^{½} = **1.49**x**10**$^{-9}$	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.165** - **1.942** * **1.49**x**10**$^{-9}$/**7**^{½} = **0.165**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.165** + **1.942** * **1.49**x**10**$^{-9}$/**7**^{½} = **0.165**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cadmium (ug/L) at OW-101B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.35** / **7** = **0.05**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.018** - **0.123**/**7**) / (**7**-1))^{½} = **8.05**x**10**$^{-10}$	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.05** - **1.942** * **8.05**x**10**$^{-10}$/**7**^{½} = **0.05**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.05** + **1.942** * **8.05**x**10**$^{-10}$/**7**^{½} = **0.05**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Chromium (ug/L) at OW-101B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **10.24** / **7** = **1.463**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**49.979** - **104.858**/**7**) / (**7**-1))^{½} = **2.415**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **1.463** - **1.942** * **2.415**/**7**^{½} = **0.0**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **1.463** + **1.942** * **2.415**/**7**^{½} = **3.236**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **16.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **16.0**^{½}) / 2 = [**5.348**, **15.652**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-2.476**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cis-1,2-dichloroethylene (ug/L) at OW-101B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.735** / **7** = **0.105**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.077** - **0.54**/**7**) / (**7**-1))^{½} = **0.0**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.105** - **1.942** * **0.0**/**7**^{½} = **0.105**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.105** + **1.942** * **0.0**/**7**^{½} = **0.105**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cobalt (ug/L) at OW-101B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.595** / **7** = **0.085**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.051** - **0.354**/**7**) / (**7**-1))^{½} = **1.49**x**10**$^{-9}$	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.085** - **1.942** * **1.49**x**10**$^{-9}$/**7**^{½} = **0.085**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.085** + **1.942** * **1.49**x**10**$^{-9}$/**7**^{½} = **0.085**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Copper (ug/L) at OW-101B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **6.3** / **7** = **0.9**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**5.67** - **39.69**/**7**) / (**7**-1))^{½} = **0.0**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.9** - **1.942** * **0.0**/**7**^{½} = **0.9**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.9** + **1.942** * **0.0**/**7**^{½} = **0.9**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Lead (ug/L) at OW-101B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.84** / **7** = **0.12**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.101** - **0.706**/**7**) / (**7**-1))^{½} = **0.0**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.12** - **1.942** * **0.0**/**7**^{½} = **0.12**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.12** + **1.942** * **0.0**/**7**^{½} = **0.12**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Nickel (ug/L) at OW-101B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **6.65** / **7** = **0.95**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**6.318** - **44.223**/**7**) / (**7**-1))^{½} = **0.0**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.95** - **1.942** * **0.0**/**7**^{½} = **0.95**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.95** + **1.942** * **0.0**/**7**^{½} = **0.95**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Selenium (ug/L) at OW-101B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **4.9** / **7** = **0.7**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**3.43** - **24.01**/**7**) / (**7**-1))^{½} = **0.0**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.7** - **1.942** * **0.0**/**7**^{½} = **0.7**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.7** + **1.942** * **0.0**/**7**^{½} = **0.7**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Silver (ug/L) at OW-101B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.75** / **7** = **0.25**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.438** - **3.063**/**7**) / (**7**-1))^{½} = **0.0**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.25** - **1.942** * **0.0**/**7**^{½} = **0.25**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.25** + **1.942** * **0.0**/**7**^{½} = **0.25**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Thallium (ug/L) at OW-101B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **3.76** / **7** = **0.537**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**8.982** - **14.138**/**7**) / (**7**-1))^{½} = **1.077**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.537** - **1.942** * **1.077**/**7**^{½} = **0.0**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.537** + **1.942** * **1.077**/**7**^{½} = **1.328**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **16.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **16.0**^{½}) / 2 = [**5.348**, **15.652**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Vanadium (ug/L) at OW-101B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **3.85** / **7** = **0.55**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**2.118** - **14.823**/**7**) / (**7**-1))^{½} = **9.58**x**10**$^{-9}$	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.55** - **1.942** * **9.58**x**10**$^{-9}$/**7**^{½} = **0.55**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.55** + **1.942** * **9.58**x**10**$^{-9}$/**7**^{½} = **0.55**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Vinyl chloride (ug/L) at OW-101B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.63** / **7** = **0.09**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.057** - **0.397**/**7**) / (**7**-1))^{½} = **9.75**x**10**$^{-10}$	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.09** - **1.942** * **9.75**x**10**$^{-10}$/**7**^{½} = **0.09**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.09** + **1.942** * **9.75**x**10**$^{-10}$/**7**^{½} = **0.09**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Zinc (ug/L) at OW-101B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **33.95** / **7** = **4.85**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**164.658** - **1152.603**/**7**) / (**7**-1))^{½} = **0.0**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **4.85** - **1.942** * **0.0**/**7**^{½} = **4.85**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **4.85** + **1.942** * **0.0**/**7**^{½} = **4.85**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
1,4-dichlorobenzene (ug/L) at OW-105B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.495** / **13** = **0.115**	Compute the mean of the last 13 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.172** - **2.235**/**13**) / (**13**-1))^{½} = **1.46**x**10**$^{-9}$	Compute sd of the last 13 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.115** - **1.782** * **1.46**x**10**$^{-9}$/**13**^{½} = **0.115**	Compute lower confidence limit for the mean of the last 13 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.115** + **1.782** * **1.46**x**10**$^{-9}$/**13**^{½} = **0.115**	Compute upper confidence limit for the mean of the last 13 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **0.0**^{½}) / 2 = [**39.0**, **39.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Antimony (ug/L) at OW-105B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **6.409** / **13** = **0.493**	Compute the mean of the last 13 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**3.167** - **41.075**/**13**) / (**13**-1))^{½} = **0.025**	Compute sd of the last 13 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.493** - **1.782** * **0.025**/**13**^{½} = **0.481**	Compute lower confidence limit for the mean of the last 13 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.493** + **1.782** * **0.025**/**13**^{½} = **0.505**	Compute upper confidence limit for the mean of the last 13 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **56.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **56.0**^{½}) / 2 = [**29.361**, **48.639**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Arsenic (ug/L) at OW-105B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **4.875** / **13** = **0.375**	Compute the mean of the last 13 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1.828** - **23.766**/**13**) / (**13**-1))^{½} = **0.0**	Compute sd of the last 13 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.375** - **1.782** * **0.0**/**13**^{½} = **0.375**	Compute lower confidence limit for the mean of the last 13 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.375** + **1.782** * **0.0**/**13**^{½} = **0.375**	Compute upper confidence limit for the mean of the last 13 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **0.0**^{½}) / 2 = [**39.0**, **39.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Barium (ug/L) at OW-105B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1126.9** / **13** = **86.685**	Compute the mean of the last 13 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**97933.55** - **1.27**x**10^6**/**13**) / (**13**-1))^{½} = **4.552**	Compute sd of the last 13 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **86.685** - **1.782** * **4.552**/**13**^{½} = **84.435**	Compute lower confidence limit for the mean of the last 13 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **86.685** + **1.782** * **4.552**/**13**^{½} = **88.934**	Compute upper confidence limit for the mean of the last 13 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **0.05**	Sen's estimator of trend.
7	var(S) = **268.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **268.667**^{½}) / 2 = [**17.888**, **60.112**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-3.218**, **2.204**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Benzene (ug/L) at OW-105B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.43** / **13** = **0.11**	Compute the mean of the last 13 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.157** - **2.045**/**13**) / (**13**-1))^{½} = **0.0**	Compute sd of the last 13 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.11** - **1.782** * **0.0**/**13**^{½} = **0.11**	Compute lower confidence limit for the mean of the last 13 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.11** + **1.782** * **0.0**/**13**^{½} = **0.11**	Compute upper confidence limit for the mean of the last 13 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **0.0**^{½}) / 2 = [**39.0**, **39.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Beryllium (ug/L) at OW-105B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.755** / **13** = **0.135**	Compute the mean of the last 13 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.237** - **3.08**/**13**) / (**13**-1))^{½} = **0.0**	Compute sd of the last 13 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.135** - **1.782** * **0.0**/**13**^{½} = **0.135**	Compute lower confidence limit for the mean of the last 13 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.135** + **1.782** * **0.0**/**13**^{½} = **0.135**	Compute upper confidence limit for the mean of the last 13 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **0.0**^{½}) / 2 = [**39.0**, **39.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cadmium (ug/L) at OW-105B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.465** / **14** = **0.033**	Compute the mean of the last 14 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.022** - **0.216**/**14**) / (**14**-1))^{½} = **0.022**	Compute sd of the last 14 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.033** - **1.77** * **0.022**/**14**^{½} = **0.023**	Compute lower confidence limit for the mean of the last 14 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.033** + **1.77** * **0.022**/**14**^{½} = **0.044**	Compute upper confidence limit for the mean of the last 14 measurements.
5	N' = **N** * (**N**-1) / 2 = **14** * (**14**-1) / 2 = **91**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **121.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**91** ± **2.576** * **121.0**^{½}) / 2 = [**31.332**, **59.668**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Chromium (ug/L) at OW-105B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **62.07** / **13** = **4.775**	Compute the mean of the last 13 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**616.642** - **3852.685**/**13**) / (**13**-1))^{½} = **5.166**	Compute sd of the last 13 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **4.775** - **1.782** * **5.166**/**13**^{½} = **2.222**	Compute lower confidence limit for the mean of the last 13 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **4.775** + **1.782** * **5.166**/**13**^{½} = **7.328**	Compute upper confidence limit for the mean of the last 13 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **-2.054**	Sen's estimator of trend.
7	var(S) = **224.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **224.333**^{½}) / 2 = [**19.709**, **58.291**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-3.592**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cis-1,2-dichloroethylene (ug/L) at OW-105B

Step	Equation	Description
1	$\bar{X}$ = **sum[X]** / **N** = **1.365** / **13** = **0.105**	Compute the mean of the last 13 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.143** - **1.863**/**13**) / (**13**-1))^{½} = **0.0**	Compute sd of the last 13 measurements.
3	LCL = $\bar{\mathbf{X}}$ - **tS**/**N**^{½} = **0.105** - **1.782** * **0.0**/**13**^{½} = **0.105**	Compute lower confidence limit for the mean of the last 13 measurements.
4	UCL = $\bar{\mathbf{X}}$ + **tS**/**N**^{½} = **0.105** + **1.782** * **0.0**/**13**^{½} = **0.105**	Compute upper confidence limit for the mean of the last 13 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **0.0**^{½}) / 2 = [**39.0**, **39.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cobalt (ug/L) at OW-105B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.346** / **13** = **0.104**	Compute the mean of the last 13 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.193** - **1.812**/**13**) / (**13**-1))^{½} = **0.067**	Compute sd of the last 13 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.104** - **1.782** * **0.067**/**13**^{½} = **0.071**	Compute lower confidence limit for the mean of the last 13 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.104** + **1.782** * **0.067**/**13**^{½} = **0.137**	Compute upper confidence limit for the mean of the last 13 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **56.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **56.0**^{½}) / 2 = [**29.361**, **48.639**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Copper (ug/L) at OW-105B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **11.7** / **13** = **0.9**	Compute the mean of the last 13 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**10.53** - **136.89**/**13**) / (**13**-1))^{½} = **0.0**	Compute sd of the last 13 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.9** - **1.782** * **0.0**/**13**^{½} = **0.9**	Compute lower confidence limit for the mean of the last 13 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.9** + **1.782** * **0.0**/**13**^{½} = **0.9**	Compute upper confidence limit for the mean of the last 13 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **0.0**^{½}) / 2 = [**39.0**, **39.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Lead (ug/L) at OW-105B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.56** / **13** = **0.12**	Compute the mean of the last 13 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.187** - **2.434**/**13**) / (**13**-1))^{½} = **0.0**	Compute sd of the last 13 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.12** - **1.782** * **0.0**/**13**^{½} = **0.12**	Compute lower confidence limit for the mean of the last 13 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.12** + **1.782** * **0.0**/**13**^{½} = **0.12**	Compute upper confidence limit for the mean of the last 13 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **0.0**^{½}) / 2 = [**39.0**, **39.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Nickel (ug/L) at OW-105B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **55.62** / **13** = **4.278**	Compute the mean of the last 13 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**471.608** - **3093.584**/**13**) / (**13**-1))^{½} = **4.412**	Compute sd of the last 13 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **4.278** - **1.782** * **4.412**/**13**^{½} = **2.098**	Compute lower confidence limit for the mean of the last 13 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **4.278** + **1.782** * **4.412**/**13**^{½} = **6.459**	Compute upper confidence limit for the mean of the last 13 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **224.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **224.333**^{½}) / 2 = [**19.709**, **58.291**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-1.943**, **0.467**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Selenium (ug/L) at OW-105B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **6.5** / **13** = **0.5**	Compute the mean of the last 13 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**3.25** - **42.25**/**13**) / (**13**-1))^{½} = **0.0**	Compute sd of the last 13 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.5** - **1.782** * **0.0**/**13**^{½} = **0.5**	Compute lower confidence limit for the mean of the last 13 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.5** + **1.782** * **0.0**/**13**^{½} = **0.5**	Compute upper confidence limit for the mean of the last 13 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **0.0**^{½}) / 2 = [**39.0**, **39.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Silver (ug/L) at OW-105B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.73** / **13** = **0.21**	Compute the mean of the last 13 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.573** - **7.453**/**13**) / (**13**-1))^{½} = **0.0**	Compute sd of the last 13 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.21** - **1.782** * **0.0**/**13**^{½} = **0.21**	Compute lower confidence limit for the mean of the last 13 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.21** + **1.782** * **0.0**/**13**^{½} = **0.21**	Compute upper confidence limit for the mean of the last 13 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **0.0**^{½}) / 2 = [**39.0**, **39.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Thallium (ug/L) at OW-105B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.602** / **13** = **0.123**	Compute the mean of the last 13 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.205** - **2.566**/**13**) / (**13**-1))^{½} = **0.024**	Compute sd of the last 13 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.123** - **1.782** * **0.024**/**13**^{½} = **0.111**	Compute lower confidence limit for the mean of the last 13 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.123** + **1.782** * **0.024**/**13**^{½} = **0.135**	Compute upper confidence limit for the mean of the last 13 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **56.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **56.0**^{½}) / 2 = [**29.361**, **48.639**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Vanadium (ug/L) at OW-105B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **7.15** / **13** = **0.55**	Compute the mean of the last 13 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**3.933** - **51.123**/**13**) / (**13**-1))^{½} = **1.58**x**10**$^{-8}$	Compute sd of the last 13 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.55** - **1.782** * **1.58**x**10**$^{-8}$/**13**^{½} = **0.55**	Compute lower confidence limit for the mean of the last 13 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.55** + **1.782** * **1.58**x**10**$^{-8}$/**13**^{½} = **0.55**	Compute upper confidence limit for the mean of the last 13 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **0.0**^{½}) / 2 = [**39.0**, **39.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Vinyl chloride (ug/L) at OW-105B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.17** / **13** = **0.09**	Compute the mean of the last 13 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.105** - **1.369**/**13**) / (**13**-1))^{½} = **0.0**	Compute sd of the last 13 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.09** - **1.782** * **0.0**/**13**^{½} = **0.09**	Compute lower confidence limit for the mean of the last 13 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.09** + **1.782** * **0.0**/**13**^{½} = **0.09**	Compute upper confidence limit for the mean of the last 13 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **0.0**^{½}) / 2 = [**39.0**, **39.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Zinc (ug/L) at OW-105B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **65.0** / **13** = **5.0**	Compute the mean of the last 13 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**325.0** - **4225.0**/**13**) / (**13**-1))^{½} = **0.0**	Compute sd of the last 13 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **5.0** - **1.782** * **0.0**/**13**^{½} = **5.0**	Compute lower confidence limit for the mean of the last 13 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **5.0** + **1.782** * **0.0**/**13**^{½} = **5.0**	Compute upper confidence limit for the mean of the last 13 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **0.0**^{½}) / 2 = [**39.0**, **39.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
1,4-dichlorobenzene (ug/L) at OW-113B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.84** / **16** = **0.115**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.212** - **3.386**/**16**) / (**16**-1))^{½} = **2.24**x**10**$^{-9}$	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.115** - **1.753** * **2.24**x**10**$^{-9}$/**16**^{½} = **0.115**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.115** + **1.753** * **2.24**x**10**$^{-9}$/**16**^{½} = **0.115**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **0.0**^{½}) / 2 = [**115.5**, **115.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Antimony (ug/L) at OW-113B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **4.24** / **16** = **0.265**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1.124** - **17.978**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.265** - **1.753** * **0.0**/**16**^{½} = **0.265**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.265** + **1.753** * **0.0**/**16**^{½} = **0.265**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **161.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **161.0**^{½}) / 2 = [**99.157**, **131.843**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Arsenic (ug/L) at OW-113B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **7.815** / **16** = **0.488**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**6.905** - **61.074**/**16**) / (**16**-1))^{½} = **0.454**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.488** - **1.753** * **0.454**/**16**^{½} = **0.29**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.488** + **1.753** * **0.454**/**16**^{½} = **0.687**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **440.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **440.667**^{½}) / 2 = [**88.462**, **142.538**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Barium (ug/L) at OW-113B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **214.0** / **16** = **13.375**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**2905.02** - **45796.0**/**16**) / (**16**-1))^{½} = **1.689**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **13.375** - **1.753** * **1.689**/**16**^{½} = **12.635**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **13.375** + **1.753** * **1.689**/**16**^{½} = **14.115**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **-0.018**	Sen's estimator of trend.
7	var(S) = **1257.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **1257.667**^{½}) / 2 = [**69.823**, **161.177**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.631**, **0.417**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Benzene (ug/L) at OW-113B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.76** / **16** = **0.11**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.194** - **3.098**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.11** - **1.753** * **0.0**/**16**^{½} = **0.11**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.11** + **1.753** * **0.0**/**16**^{½} = **0.11**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **0.0**^{½}) / 2 = [**115.5**, **115.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Beryllium (ug/L) at OW-113B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.16** / **16** = **0.135**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.292** - **4.666**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.135** - **1.753** * **0.0**/**16**^{½} = **0.135**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.135** + **1.753** * **0.0**/**16**^{½} = **0.135**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **0.0**^{½}) / 2 = [**115.5**, **115.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cadmium (ug/L) at OW-113B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.654** / **16** = **0.041**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.036** - **0.428**/**16**) / (**16**-1))^{½} = **0.025**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.041** - **1.753** * **0.025**/**16**^{½} = **0.03**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.041** + **1.753** * **0.025**/**16**^{½} = **0.052**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **560.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **560.667**^{½}) / 2 = [**85.002**, **145.998**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Chromium (ug/L) at OW-113B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **18.54** / **16** = **1.159**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**97.102** - **343.732**/**16**) / (**16**-1))^{½} = **2.245**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **1.159** - **1.753** * **2.245**/**16**^{½} = **0.175**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **1.159** + **1.753** * **2.245**/**16**^{½} = **2.143**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **668.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **668.333**^{½}) / 2 = [**82.202**, **148.798**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cis-1,2-dichloroethylene (ug/L) at OW-113B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.68** / **16** = **0.105**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.176** - **2.822**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.105** - **1.753** * **0.0**/**16**^{½} = **0.105**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.105** + **1.753** * **0.0**/**16**^{½} = **0.105**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **0.0**^{½}) / 2 = [**115.5**, **115.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cobalt (ug/L) at OW-113B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **174.571** / **16** = **10.911**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**2739.818** - **30475.034**/**16**) / (**16**-1))^{½} = **7.462**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **10.911** - **1.753** * **7.462**/**16**^{½} = **7.641**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **10.911** + **1.753** * **7.462**/**16**^{½} = **14.18**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **25** * (**25**-1) / 2 = **300**	Number of sample pairs during trend detection period.
6	S = **1.197**	Sen's estimator of trend.
7	var(S) = **1833.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**300** ± **2.576** * **1833.333**^{½}) / 2 = [**94.851**, **205.149**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.051**, **2.478**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Copper (ug/L) at OW-113B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **14.4** / **16** = **0.9**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**12.96** - **207.36**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.9** - **1.753** * **0.0**/**16**^{½} = **0.9**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.9** + **1.753** * **0.0**/**16**^{½} = **0.9**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **161.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **161.0**^{½}) / 2 = [**99.157**, **131.843**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Lead (ug/L) at OW-113B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.92** / **16** = **0.12**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.23** - **3.686**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.12** - **1.753** * **0.0**/**16**^{½} = **0.12**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.12** + **1.753** * **0.0**/**16**^{½} = **0.12**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **161.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **161.0**^{½}) / 2 = [**99.157**, **131.843**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Nickel (ug/L) at OW-113B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **284.24** / **16** = **17.765**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**5310.446** - **80792.378**/**16**) / (**16**-1))^{½} = **4.171**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **17.765** - **1.753** * **4.171**/**16**^{½} = **15.937**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **17.765** + **1.753** * **4.171**/**16**^{½} = **19.593**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **1.092**	Sen's estimator of trend.
7	var(S) = **1432.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **1432.667**^{½}) / 2 = [**77.748**, **175.252**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.34**, **1.906**]	Two-sided confidence interval for slope.
10	LCL(S) > 0	**Significant increasing trend.**

Worksheet 6 - Assessment Monitoring
Selenium (ug/L) at OW-113B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **7.68** / **16** = **0.48**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**3.686** - **58.982**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.48** - **1.753** * **0.0**/**16**^{½} = **0.48**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.48** + **1.753** * **0.0**/**16**^{½} = **0.48**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **0.0**^{½}) / 2 = [**115.5**, **115.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Silver (ug/L) at OW-113B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.96** / **16** = **0.185**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.548** - **8.762**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.185** - **1.753** * **0.0**/**16**^{½} = **0.185**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.185** + **1.753** * **0.0**/**16**^{½} = **0.185**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **0.0**^{½}) / 2 = [**115.5**, **115.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Thallium (ug/L) at OW-113B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.08** / **16** = **0.13**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.27** - **4.326**/**16**) / (**16**-1))^{½} = **4.01**x**10**$^{-9}$	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.13** - **1.753** * **4.01**x**10**$^{-9}$/**16**^{½} = **0.13**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.13** + **1.753** * **4.01**x**10**$^{-9}$/**16**^{½} = **0.13**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **161.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **161.0**^{½}) / 2 = [**99.157**, **131.843**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Vanadium (ug/L) at OW-113B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **6.72** / **16** = **0.42**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**2.822** - **45.158**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.42** - **1.753** * **0.0**/**16**^{½} = **0.42**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.42** + **1.753** * **0.0**/**16**^{½} = **0.42**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **161.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **161.0**^{½}) / 2 = [**99.157**, **131.843**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Vinyl chloride (ug/L) at OW-113B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.44** / **16** = **0.09**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.13** - **2.074**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.09** - **1.753** * **0.0**/**16**^{½} = **0.09**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.09** + **1.753** * **0.0**/**16**^{½} = **0.09**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **0.0**^{½}) / 2 = [**115.5**, **115.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Zinc (ug/L) at OW-113B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **80.0** / **16** = **5.0**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**400.0** - **6400.0**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **5.0** - **1.753** * **0.0**/**16**^{½} = **5.0**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **5.0** + **1.753** * **0.0**/**16**^{½} = **5.0**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **161.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **161.0**^{½}) / 2 = [**99.157**, **131.843**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
1,4-dichlorobenzene (ug/L) at OW-205B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.84** / **16** = **0.115**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.212** - **3.386**/**16**) / (**16**-1))^{½} = **2.24**x**10**$^{-9}$	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.115** - **1.753** * **2.24**x**10**$^{-9}$/**16**^{½} = **0.115**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.115** + **1.753** * **2.24**x**10**$^{-9}$/**16**^{½} = **0.115**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **19** * (**19**-1) / 2 = **171**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**171** ± **2.576** * **0.0**^{½}) / 2 = [**85.5**, **85.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Antimony (ug/L) at OW-205B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **4.931** / **16** = **0.308**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1.967** - **24.315**/**16**) / (**16**-1))^{½} = **0.173**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.308** - **1.753** * **0.173**/**16**^{½} = **0.232**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.308** + **1.753** * **0.173**/**16**^{½} = **0.384**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **20** * (**20**-1) / 2 = **190**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **133.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**190** ± **2.576** * **133.0**^{½}) / 2 = [**80.146**, **109.854**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Arsenic (ug/L) at OW-205B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **169.86** / **16** = **10.616**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**2106.417** - **28852.42**/**16**) / (**16**-1))^{½} = **4.495**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **10.616** - **1.753** * **4.495**/**16**^{½} = **8.646**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **10.616** + **1.753** * **4.495**/**16**^{½} = **12.586**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **20** * (**20**-1) / 2 = **190**	Number of sample pairs during trend detection period.
6	S = **-0.005**	Sen's estimator of trend.
7	var(S) = **950.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**190** ± **2.576** * **950.0**^{½}) / 2 = [**55.301**, **134.699**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-1.263**, **1.315**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Barium (ug/L) at OW-205B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **3557.0** / **16** = **222.313**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**896889.0** - **1.27**x**10^7**/**16**) / (**16**-1))^{½} = **84.112**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **222.313** - **1.753** * **84.112**/**16**^{½} = **185.455**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **222.313** + **1.753** * **84.112**/**16**^{½} = **259.17**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **20** * (**20**-1) / 2 = **190**	Number of sample pairs during trend detection period.
6	S = **16.412**	Sen's estimator of trend.
7	var(S) = **948.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**190** ± **2.576** * **948.0**^{½}) / 2 = [**55.343**, **134.657**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-2.723**, **37.146**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Benzene (ug/L) at OW-205B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **3.154** / **16** = **0.197**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1.229** - **9.948**/**16**) / (**16**-1))^{½} = **0.201**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.197** - **1.753** * **0.201**/**16**^{½} = **0.109**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.197** + **1.753** * **0.201**/**16**^{½} = **0.285**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **19** * (**19**-1) / 2 = **171**	Number of sample pairs during trend detection period.
6	S = **-0.015**	Sen's estimator of trend.
7	var(S) = **692.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**171** ± **2.576** * **692.0**^{½}) / 2 = [**51.618**, **119.382**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.049**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Beryllium (ug/L) at OW-205B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.16** / **16** = **0.135**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.292** - **4.666**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.135** - **1.753** * **0.0**/**16**^{½} = **0.135**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.135** + **1.753** * **0.0**/**16**^{½} = **0.135**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **20** * (**20**-1) / 2 = **190**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**190** ± **2.576** * **0.0**^{½}) / 2 = [**95.0**, **95.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Beta-bhc (ug/L) at OW-205B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.016** / **6** = **0.003**	Compute the mean of the last 6 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**4.26**x**10**$^{-5}$ - **2.56**x**10**$^{-4}$/**6**) / (**6**-1))^{½} = **0.0**	Compute sd of the last 6 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.003** - **2.014** * **0.0**/**6**^{½} = **0.003**	Compute lower confidence limit for the mean of the last 6 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.003** + **2.014** * **0.0**/**6**^{½} = **0.003**	Compute upper confidence limit for the mean of the last 6 measurements.
5	N' = **N** * (**N**-1) / 2 = **6** * (**6**-1) / 2 = **15**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**15** ± **2.576** * **0.0**^{½}) / 2 = [**7.5**, **7.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cadmium (ug/L) at OW-205B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.628** / **16** = **0.039**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.043** - **0.394**/**16**) / (**16**-1))^{½} = **0.035**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.039** - **1.753** * **0.035**/**16**^{½} = **0.024**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.039** + **1.753** * **0.035**/**16**^{½} = **0.054**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **20** * (**20**-1) / 2 = **190**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **456.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**190** ± **2.576** * **456.667**^{½}) / 2 = [**67.476**, **122.524**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Chromium (ug/L) at OW-205B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **12.27** / **16** = **0.767**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**14.738** - **150.553**/**16**) / (**16**-1))^{½} = **0.596**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.767** - **1.753** * **0.596**/**16**^{½} = **0.506**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.767** + **1.753** * **0.596**/**16**^{½} = **1.028**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **20** * (**20**-1) / 2 = **190**	Number of sample pairs during trend detection period.
6	S = **-0.032**	Sen's estimator of trend.
7	var(S) = **681.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**190** ± **2.576** * **681.333**^{½}) / 2 = [**61.38**, **128.62**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.233**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cis-1,2-dichloroethylene (ug/L) at OW-205B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **5.224** / **16** = **0.327**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**3.652** - **27.29**/**16**) / (**16**-1))^{½} = **0.36**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.327** - **1.753** * **0.36**/**16**^{½} = **0.169**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.327** + **1.753** * **0.36**/**16**^{½} = **0.484**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **19** * (**19**-1) / 2 = **171**	Number of sample pairs during trend detection period.
6	S = **-0.027**	Sen's estimator of trend.
7	var(S) = **725.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**171** ± **2.576** * **725.0**^{½}) / 2 = [**50.82**, **120.18**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.094**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cobalt (ug/L) at OW-205B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **65.86** / **16** = **4.116**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**284.604** - **4337.54**/**16**) / (**16**-1))^{½} = **0.949**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **4.116** - **1.753** * **0.949**/**16**^{½} = **3.7**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **4.116** + **1.753** * **0.949**/**16**^{½} = **4.532**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **20** * (**20**-1) / 2 = **190**	Number of sample pairs during trend detection period.
6	S = **0.218**	Sen's estimator of trend.
7	var(S) = **950.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**190** ± **2.576** * **950.0**^{½}) / 2 = [**55.301**, **134.699**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.034**, **0.541**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Copper (ug/L) at OW-205B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **59.3** / **16** = **3.706**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**2109.79** - **3516.49**/**16**) / (**16**-1))^{½} = **11.225**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **3.706** - **1.753** * **11.225**/**16**^{½} = **0.0**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **3.706** + **1.753** * **11.225**/**16**^{½} = **8.625**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **20** * (**20**-1) / 2 = **190**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **133.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**190** ± **2.576** * **133.0**^{½}) / 2 = [**80.146**, **109.854**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Lead (ug/L) at OW-205B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **18.075** / **16** = **1.13**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**262.674** - **326.706**/**16**) / (**16**-1))^{½} = **4.019**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **1.13** - **1.753** * **4.019**/**16**^{½} = **0.0**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **1.13** + **1.753** * **4.019**/**16**^{½} = **2.891**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **20** * (**20**-1) / 2 = **190**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **253.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**190** ± **2.576** * **253.0**^{½}) / 2 = [**74.513**, **115.487**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Mercury (ug/L) at OW-205B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.275** / **5** = **0.055**	Compute the mean of the last 5 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.015** - **0.076**/**5**) / (**5**-1))^{½} = **0.0**	Compute sd of the last 5 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.055** - **2.132** * **0.0**/**5**^{½} = **0.055**	Compute lower confidence limit for the mean of the last 5 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.055** + **2.132** * **0.0**/**5**^{½} = **0.055**	Compute upper confidence limit for the mean of the last 5 measurements.
5	N' = **N** * (**N**-1) / 2 = **5** * (**5**-1) / 2 = **10**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**10** ± **2.576** * **0.0**^{½}) / 2 = [**5.0**, **5.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Nickel (ug/L) at OW-205B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **185.92** / **16** = **11.62**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**2338.892** - **34566.246**/**16**) / (**16**-1))^{½} = **3.45**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **11.62** - **1.753** * **3.45**/**16**^{½} = **10.108**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **11.62** + **1.753** * **3.45**/**16**^{½} = **13.132**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **20** * (**20**-1) / 2 = **190**	Number of sample pairs during trend detection period.
6	S = **1.216**	Sen's estimator of trend.
7	var(S) = **948.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**190** ± **2.576** * **948.0**^{½}) / 2 = [**55.343**, **134.657**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.407**, **1.77**]	Two-sided confidence interval for slope.
10	LCL(S) > 0	**Significant increasing trend.**

Worksheet 6 - Assessment Monitoring
Selenium (ug/L) at OW-205B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **7.68** / **16** = **0.48**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**3.686** - **58.982**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.48** - **1.753** * **0.0**/**16**^{½} = **0.48**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.48** + **1.753** * **0.0**/**16**^{½} = **0.48**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **20** * (**20**-1) / 2 = **190**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**190** ± **2.576** * **0.0**^{½}) / 2 = [**95.0**, **95.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Silver (ug/L) at OW-205B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.928** / **16** = **0.183**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.536** - **8.573**/**16**) / (**16**-1))^{½} = **0.006**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.183** - **1.753** * **0.006**/**16**^{½} = **0.181**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.183** + **1.753** * **0.006**/**16**^{½} = **0.185**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **20** * (**20**-1) / 2 = **190**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **253.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**190** ± **2.576** * **253.0**^{½}) / 2 = [**74.513**, **115.487**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Thallium (ug/L) at OW-205B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.08** / **16** = **0.13**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.27** - **4.326**/**16**) / (**16**-1))^{½} = **4.01**x**10**$^{-9}$	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.13** - **1.753** * **4.01**x**10**$^{-9}$/**16**^{½} = **0.13**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.13** + **1.753** * **4.01**x**10**$^{-9}$/**16**^{½} = **0.13**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **20** * (**20**-1) / 2 = **190**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**190** ± **2.576** * **0.0**^{½}) / 2 = [**95.0**, **95.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Vanadium (ug/L) at OW-205B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **6.72** / **16** = **0.42**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**2.822** - **45.158**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.42** - **1.753** * **0.0**/**16**^{½} = **0.42**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.42** + **1.753** * **0.0**/**16**^{½} = **0.42**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **20** * (**20**-1) / 2 = **190**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**190** ± **2.576** * **0.0**^{½}) / 2 = [**95.0**, **95.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Vinyl chloride (ug/L) at OW-205B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.44** / **16** = **0.09**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.13** - **2.074**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.09** - **1.753** * **0.0**/**16**^{½} = **0.09**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.09** + **1.753** * **0.0**/**16**^{½} = **0.09**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **19** * (**19**-1) / 2 = **171**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**171** ± **2.576** * **0.0**^{½}) / 2 = [**85.5**, **85.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Zinc (ug/L) at OW-205B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **80.0** / **16** = **5.0**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**400.0** - **6400.0**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **5.0** - **1.753** * **0.0**/**16**^{½} = **5.0**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **5.0** + **1.753** * **0.0**/**16**^{½} = **5.0**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **20** * (**20**-1) / 2 = **190**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **133.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**190** ± **2.576** * **133.0**^{½}) / 2 = [**80.146**, **109.854**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
1,4-dichlorobenzene (ug/L) at OW-209B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.84** / **16** = **0.115**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.212** - **3.386**/**16**) / (**16**-1))^{½} = **2.24**x**10**$^{-9}$	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.115** - **1.753** * **2.24**x**10**$^{-9}$/**16**^{½} = **0.115**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.115** + **1.753** * **2.24**x**10**$^{-9}$/**16**^{½} = **0.115**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **0.0**^{½}) / 2 = [**115.5**, **115.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Antimony (ug/L) at OW-209B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **4.08** / **16** = **0.255**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1.04** - **16.646**/**16**) / (**16**-1))^{½} = **5.22**x**10**$^{-9}$	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.255** - **1.753** * **5.22**x**10**$^{-9}$/**16**^{½} = **0.255**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.255** + **1.753** * **5.22**x**10**$^{-9}$/**16**^{½} = **0.255**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **0.0**^{½}) / 2 = [**115.5**, **115.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Arsenic (ug/L) at OW-209B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **6.0** / **16** = **0.375**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**2.25** - **36.0**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.375** - **1.753** * **0.0**/**16**^{½} = **0.375**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.375** + **1.753** * **0.0**/**16**^{½} = **0.375**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **0.0**^{½}) / 2 = [**115.5**, **115.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Barium (ug/L) at OW-209B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **631.3** / **16** = **39.456**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**25737.25** - **398539.69**/**16**) / (**16**-1))^{½} = **7.432**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **39.456** - **1.753** * **7.432**/**16**^{½} = **36.2**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **39.456** + **1.753** * **7.432**/**16**^{½} = **42.713**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **1.365**	Sen's estimator of trend.
7	var(S) = **1255.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **1255.667**^{½}) / 2 = [**69.859**, **161.141**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.164**, **2.726**]	Two-sided confidence interval for slope.
10	LCL(S) > 0	**Significant increasing trend.**

Worksheet 6 - Assessment Monitoring
Benzene (ug/L) at OW-209B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.76** / **16** = **0.11**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.194** - **3.098**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.11** - **1.753** * **0.0**/**16**^{½} = **0.11**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.11** + **1.753** * **0.0**/**16**^{½} = **0.11**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **0.0**^{½}) / 2 = [**115.5**, **115.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Beryllium (ug/L) at OW-209B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.16** / **16** = **0.135**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.292** - **4.666**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.135** - **1.753** * **0.0**/**16**^{½} = **0.135**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.135** + **1.753** * **0.0**/**16**^{½} = **0.135**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **0.0**^{½}) / 2 = [**115.5**, **115.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cadmium (ug/L) at OW-209B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.641** / **16** = **0.04**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.035** - **0.411**/**16**) / (**16**-1))^{½} = **0.024**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.04** - **1.753** * **0.024**/**16**^{½} = **0.029**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.04** + **1.753** * **0.024**/**16**^{½} = **0.051**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **-0.004**	Sen's estimator of trend.
7	var(S) = **924.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **924.0**^{½}) / 2 = [**76.348**, **154.652**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.012**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Chromium (ug/L) at OW-209B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **9.458** / **16** = **0.591**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**5.782** - **89.454**/**16**) / (**16**-1))^{½} = **0.113**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.591** - **1.753** * **0.113**/**16**^{½} = **0.542**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.591** + **1.753** * **0.113**/**16**^{½} = **0.641**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **764.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **764.333**^{½}) / 2 = [**79.891**, **151.109**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.061**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cis-1,2-dichloroethylene (ug/L) at OW-209B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.68** / **16** = **0.105**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.176** - **2.822**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.105** - **1.753** * **0.0**/**16**^{½} = **0.105**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.105** + **1.753** * **0.0**/**16**^{½} = **0.105**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **0.0**^{½}) / 2 = [**115.5**, **115.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cobalt (ug/L) at OW-209B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.882** / **16** = **0.18**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**2.016** - **8.306**/**16**) / (**16**-1))^{½} = **0.316**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.18** - **1.753** * **0.316**/**16**^{½} = **0.042**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.18** + **1.753** * **0.316**/**16**^{½} = **0.319**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **-9.20**x**10**$^{-4}$	Sen's estimator of trend.
7	var(S) = **989.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **989.0**^{½}) / 2 = [**74.994**, **156.006**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.019**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Copper (ug/L) at OW-209B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **36.5** / **16** = **2.281**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**155.383** - **1332.25**/**16**) / (**16**-1))^{½} = **2.193**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **2.281** - **1.753** * **2.193**/**16**^{½} = **1.32**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **2.281** + **1.753** * **2.193**/**16**^{½} = **3.242**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **24** * (**24**-1) / 2 = **276**	Number of sample pairs during trend detection period.
6	S = **-0.417**	Sen's estimator of trend.
7	var(S) = **1412.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**276** ± **2.576** * **1412.667**^{½}) / 2 = [**89.59**, **186.41**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.823**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Lead (ug/L) at OW-209B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.92** / **16** = **0.12**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.23** - **3.686**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.12** - **1.753** * **0.0**/**16**^{½} = **0.12**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.12** + **1.753** * **0.0**/**16**^{½} = **0.12**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **161.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **161.0**^{½}) / 2 = [**99.157**, **131.843**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Nickel (ug/L) at OW-209B

Step	Equation	Description
1	$\bar{X}$ = **sum[X]** / **N** = **114.67** / **16** = **7.167**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**987.679** - **13149.209**/**16**) / (**16**-1))^{½} = **3.325**	Compute sd of the last 16 measurements.
3	LCL = $\bar{\mathbf{X}}$ - **tS**/**N**^{½} = **7.167** - **1.753** * **3.325**/**16**^{½} = **5.71**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\bar{\mathbf{X}}$ + **tS**/**N**^{½} = **7.167** + **1.753** * **3.325**/**16**^{½} = **8.624**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **-0.409**	Sen's estimator of trend.
7	var(S) = **1432.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **1432.667**^{½}) / 2 = [**77.748**, **175.252**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-1.251**, **0.337**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Selenium (ug/L) at OW-209B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **7.68** / **16** = **0.48**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**3.686** - **58.982**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.48** - **1.753** * **0.0**/**16**^{½} = **0.48**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.48** + **1.753** * **0.0**/**16**^{½} = **0.48**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **0.0**^{½}) / 2 = [**115.5**, **115.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Silver (ug/L) at OW-209B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.968** / **16** = **0.186**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.551** - **8.809**/**16**) / (**16**-1))^{½} = **0.002**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.186** - **1.753** * **0.002**/**16**^{½} = **0.185**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.186** + **1.753** * **0.002**/**16**^{½} = **0.186**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **161.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **161.0**^{½}) / 2 = [**99.157**, **131.843**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Thallium (ug/L) at OW-209B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.08** / **16** = **0.13**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.27** - **4.326**/**16**) / (**16**-1))^{½} = **4.01**x**10**$^{-9}$	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.13** - **1.753** * **4.01**x**10**$^{-9}$/**16**^{½} = **0.13**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.13** + **1.753** * **4.01**x**10**$^{-9}$/**16**^{½} = **0.13**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **440.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **440.667**^{½}) / 2 = [**88.462**, **142.538**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Vanadium (ug/L) at OW-209B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **6.72** / **16** = **0.42**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**2.822** - **45.158**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.42** - **1.753** * **0.0**/**16**^{½} = **0.42**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.42** + **1.753** * **0.0**/**16**^{½} = **0.42**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **161.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **161.0**^{½}) / 2 = [**99.157**, **131.843**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Vinyl chloride (ug/L) at OW-209B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.44** / **16** = **0.09**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.13** - **2.074**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.09** - **1.753** * **0.0**/**16**^{½} = **0.09**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.09** + **1.753** * **0.0**/**16**^{½} = **0.09**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **0.0**^{½}) / 2 = [**115.5**, **115.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Zinc (ug/L) at OW-209B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **80.0** / **16** = **5.0**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**400.0** - **6400.0**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **5.0** - **1.753** * **0.0**/**16**^{½} = **5.0**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **5.0** + **1.753** * **0.0**/**16**^{½} = **5.0**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **161.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **161.0**^{½}) / 2 = [**99.157**, **131.843**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
1,4-dichlorobenzene (ug/L) at OW-212B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.265** / **11** = **0.115**	Compute the mean of the last 11 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.145** - **1.6**/**11**) / (**11**-1))^{½} = **0.0**	Compute sd of the last 11 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.115** - **1.812** * **0.0**/**11**^{½} = **0.115**	Compute lower confidence limit for the mean of the last 11 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.115** + **1.812** * **0.0**/**11**^{½} = **0.115**	Compute upper confidence limit for the mean of the last 11 measurements.
5	N' = **N** * (**N**-1) / 2 = **11** * (**11**-1) / 2 = **55**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**55** ± **2.576** * **0.0**^{½}) / 2 = [**27.5**, **27.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Antimony (ug/L) at OW-212B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **5.5** / **11** = **0.5**	Compute the mean of the last 11 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**2.75** - **30.25**/**11**) / (**11**-1))^{½} = **0.0**	Compute sd of the last 11 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.5** - **1.812** * **0.0**/**11**^{½} = **0.5**	Compute lower confidence limit for the mean of the last 11 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.5** + **1.812** * **0.0**/**11**^{½} = **0.5**	Compute upper confidence limit for the mean of the last 11 measurements.
5	N' = **N** * (**N**-1) / 2 = **11** * (**11**-1) / 2 = **55**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**55** ± **2.576** * **0.0**^{½}) / 2 = [**27.5**, **27.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Arsenic (ug/L) at OW-212B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **19.315** / **11** = **1.756**	Compute the mean of the last 11 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**84.989** - **373.069**/**11**) / (**11**-1))^{½} = **2.26**	Compute sd of the last 11 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **1.756** - **1.812** * **2.26**/**11**^{½} = **0.521**	Compute lower confidence limit for the mean of the last 11 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **1.756** + **1.812** * **2.26**/**11**^{½} = **2.991**	Compute upper confidence limit for the mean of the last 11 measurements.
5	N' = **N** * (**N**-1) / 2 = **11** * (**11**-1) / 2 = **55**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **120.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**55** ± **2.576** * **120.667**^{½}) / 2 = [**13.352**, **41.648**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-1.489**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Barium (ug/L) at OW-212B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **315.8** / **11** = **28.709**	Compute the mean of the last 11 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**9265.0** - **99729.64**/**11**) / (**11**-1))^{½} = **4.457**	Compute sd of the last 11 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **28.709** - **1.812** * **4.457**/**11**^{½} = **26.273**	Compute lower confidence limit for the mean of the last 11 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **28.709** + **1.812** * **4.457**/**11**^{½} = **31.145**	Compute upper confidence limit for the mean of the last 11 measurements.
5	N' = **N** * (**N**-1) / 2 = **11** * (**11**-1) / 2 = **55**	Number of sample pairs during trend detection period.
6	S = **-0.348**	Sen's estimator of trend.
7	var(S) = **165.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**55** ± **2.576** * **165.0**^{½}) / 2 = [**10.955**, **44.045**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-2.598**, **4.213**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Benzene (ug/L) at OW-212B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.21** / **11** = **0.11**	Compute the mean of the last 11 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.133** - **1.464**/**11**) / (**11**-1))^{½} = **0.0**	Compute sd of the last 11 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.11** - **1.812** * **0.0**/**11**^{½} = **0.11**	Compute lower confidence limit for the mean of the last 11 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.11** + **1.812** * **0.0**/**11**^{½} = **0.11**	Compute upper confidence limit for the mean of the last 11 measurements.
5	N' = **N** * (**N**-1) / 2 = **11** * (**11**-1) / 2 = **55**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**55** ± **2.576** * **0.0**^{½}) / 2 = [**27.5**, **27.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Beryllium (ug/L) at OW-212B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.485** / **11** = **0.135**	Compute the mean of the last 11 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.2** - **2.205**/**11**) / (**11**-1))^{½} = **0.0**	Compute sd of the last 11 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.135** - **1.812** * **0.0**/**11**^{½} = **0.135**	Compute lower confidence limit for the mean of the last 11 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.135** + **1.812** * **0.0**/**11**^{½} = **0.135**	Compute upper confidence limit for the mean of the last 11 measurements.
5	N' = **N** * (**N**-1) / 2 = **11** * (**11**-1) / 2 = **55**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**55** ± **2.576** * **0.0**^{½}) / 2 = [**27.5**, **27.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cadmium (ug/L) at OW-212B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.362** / **12** = **0.197**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.803** - **5.579**/**12**) / (**12**-1))^{½} = **0.175**	Compute sd of the last 12 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.197** - **1.795** * **0.175**/**12**^{½} = **0.106**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.197** + **1.795** * **0.175**/**12**^{½} = **0.288**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **0.088**	Sen's estimator of trend.
7	var(S) = **204.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **204.0**^{½}) / 2 = [**14.604**, **51.396**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.037**, **0.172**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Chromium (ug/L) at OW-212B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **6.05** / **11** = **0.55**	Compute the mean of the last 11 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**3.328** - **36.603**/**11**) / (**11**-1))^{½} = **1.48**x**10**$^{-8}$	Compute sd of the last 11 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.55** - **1.812** * **1.48**x**10**$^{-8}$/**11**^{½} = **0.55**	Compute lower confidence limit for the mean of the last 11 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.55** + **1.812** * **1.48**x**10**$^{-8}$/**11**^{½} = **0.55**	Compute upper confidence limit for the mean of the last 11 measurements.
5	N' = **N** * (**N**-1) / 2 = **11** * (**11**-1) / 2 = **55**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**55** ± **2.576** * **0.0**^{½}) / 2 = [**27.5**, **27.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cis-1,2-dichloroethylene (ug/L) at OW-212B

Step	Equation	Description
1	$\bar{X}$ = **sum[X]** / **N** = **1.155** / **11** = **0.105**	Compute the mean of the last 11 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.121** - **1.334**/**11**) / (**11**-1))^{½} = **0.0**	Compute sd of the last 11 measurements.
3	LCL = $\bar{\mathbf{X}}$ - **tS**/**N**^{½} = **0.105** - **1.812** * **0.0**/**11**^{½} = **0.105**	Compute lower confidence limit for the mean of the last 11 measurements.
4	UCL = $\bar{\mathbf{X}}$ + **tS**/**N**^{½} = **0.105** + **1.812** * **0.0**/**11**^{½} = **0.105**	Compute upper confidence limit for the mean of the last 11 measurements.
5	N' = **N** * (**N**-1) / 2 = **11** * (**11**-1) / 2 = **55**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**55** ± **2.576** * **0.0**^{½}) / 2 = [**27.5**, **27.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cobalt (ug/L) at OW-212B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **177.995** / **13** = **13.692**	Compute the mean of the last 13 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**4565.604** - **31682.22**/**13**) / (**13**-1))^{½} = **13.318**	Compute sd of the last 13 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **13.692** - **1.782** * **13.318**/**13**^{½} = **7.111**	Compute lower confidence limit for the mean of the last 13 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **13.692** + **1.782** * **13.318**/**13**^{½} = **20.273**	Compute upper confidence limit for the mean of the last 13 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **2.675**	Sen's estimator of trend.
7	var(S) = **268.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **268.667**^{½}) / 2 = [**17.888**, **60.112**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-4.549**, **9.168**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Copper (ug/L) at OW-212B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **48.82** / **11** = **4.438**	Compute the mean of the last 11 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**441.282** - **2383.392**/**11**) / (**11**-1))^{½} = **4.739**	Compute sd of the last 11 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **4.438** - **1.812** * **4.739**/**11**^{½} = **1.848**	Compute lower confidence limit for the mean of the last 11 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **4.438** + **1.812** * **4.739**/**11**^{½} = **7.028**	Compute upper confidence limit for the mean of the last 11 measurements.
5	N' = **N** * (**N**-1) / 2 = **11** * (**11**-1) / 2 = **55**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **135.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**55** ± **2.576** * **135.667**^{½}) / 2 = [**12.498**, **42.502**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-3.081**, **2.764**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Lead (ug/L) at OW-212B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.813** / **11** = **0.165**	Compute the mean of the last 11 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.692** - **3.287**/**11**) / (**11**-1))^{½} = **0.198**	Compute sd of the last 11 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.165** - **1.812** * **0.198**/**11**^{½} = **0.056**	Compute lower confidence limit for the mean of the last 11 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.165** + **1.812** * **0.198**/**11**^{½} = **0.273**	Compute upper confidence limit for the mean of the last 11 measurements.
5	N' = **N** * (**N**-1) / 2 = **11** * (**11**-1) / 2 = **55**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **40.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**55** ± **2.576** * **40.0**^{½}) / 2 = [**19.354**, **35.646**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Nickel (ug/L) at OW-212B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **224.36** / **11** = **20.396**	Compute the mean of the last 11 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**6578.343** - **50337.41**/**11**) / (**11**-1))^{½} = **14.15**	Compute sd of the last 11 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **20.396** - **1.812** * **14.15**/**11**^{½} = **12.664**	Compute lower confidence limit for the mean of the last 11 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **20.396** + **1.812** * **14.15**/**11**^{½} = **28.129**	Compute upper confidence limit for the mean of the last 11 measurements.
5	N' = **N** * (**N**-1) / 2 = **11** * (**11**-1) / 2 = **55**	Number of sample pairs during trend detection period.
6	S = **6.696**	Sen's estimator of trend.
7	var(S) = **165.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**55** ± **2.576** * **165.0**^{½}) / 2 = [**10.955**, **44.045**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-3.721**, **11.502**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Selenium (ug/L) at OW-212B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **5.5** / **11** = **0.5**	Compute the mean of the last 11 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**2.75** - **30.25**/**11**) / (**11**-1))^{½} = **0.0**	Compute sd of the last 11 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.5** - **1.812** * **0.0**/**11**^{½} = **0.5**	Compute lower confidence limit for the mean of the last 11 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.5** + **1.812** * **0.0**/**11**^{½} = **0.5**	Compute upper confidence limit for the mean of the last 11 measurements.
5	N' = **N** * (**N**-1) / 2 = **11** * (**11**-1) / 2 = **55**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**55** ± **2.576** * **0.0**^{½}) / 2 = [**27.5**, **27.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Silver (ug/L) at OW-212B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.31** / **11** = **0.21**	Compute the mean of the last 11 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.485** - **5.336**/**11**) / (**11**-1))^{½} = **0.0**	Compute sd of the last 11 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.21** - **1.812** * **0.0**/**11**^{½} = **0.21**	Compute lower confidence limit for the mean of the last 11 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.21** + **1.812** * **0.0**/**11**^{½} = **0.21**	Compute upper confidence limit for the mean of the last 11 measurements.
5	N' = **N** * (**N**-1) / 2 = **11** * (**11**-1) / 2 = **55**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**55** ± **2.576** * **0.0**^{½}) / 2 = [**27.5**, **27.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Thallium (ug/L) at OW-212B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.54** / **11** = **0.231**	Compute the mean of the last 11 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1.707** - **6.452**/**11**) / (**11**-1))^{½} = **0.335**	Compute sd of the last 11 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.231** - **1.812** * **0.335**/**11**^{½} = **0.048**	Compute lower confidence limit for the mean of the last 11 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.231** + **1.812** * **0.335**/**11**^{½} = **0.414**	Compute upper confidence limit for the mean of the last 11 measurements.
5	N' = **N** * (**N**-1) / 2 = **11** * (**11**-1) / 2 = **55**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **40.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**55** ± **2.576** * **40.0**^{½}) / 2 = [**19.354**, **35.646**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Vanadium (ug/L) at OW-212B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **6.05** / **11** = **0.55**	Compute the mean of the last 11 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**3.328** - **36.603**/**11**) / (**11**-1))^{½} = **1.48**x**10**$^{-8}$	Compute sd of the last 11 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.55** - **1.812** * **1.48**x**10**$^{-8}$/**11**^{½} = **0.55**	Compute lower confidence limit for the mean of the last 11 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.55** + **1.812** * **1.48**x**10**$^{-8}$/**11**^{½} = **0.55**	Compute upper confidence limit for the mean of the last 11 measurements.
5	N' = **N** * (**N**-1) / 2 = **11** * (**11**-1) / 2 = **55**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**55** ± **2.576** * **0.0**^{½}) / 2 = [**27.5**, **27.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Vinyl chloride (ug/L) at OW-212B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.99** / **11** = **0.09**	Compute the mean of the last 11 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.089** - **0.98**/**11**) / (**11**-1))^{½} = **1.12**x**10**$^{-9}$	Compute sd of the last 11 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.09** - **1.812** * **1.12**x**10**$^{-9}$/**11**^{½} = **0.09**	Compute lower confidence limit for the mean of the last 11 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.09** + **1.812** * **1.12**x**10**$^{-9}$/**11**^{½} = **0.09**	Compute upper confidence limit for the mean of the last 11 measurements.
5	N' = **N** * (**N**-1) / 2 = **11** * (**11**-1) / 2 = **55**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**55** ± **2.576** * **0.0**^{½}) / 2 = [**27.5**, **27.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Zinc (ug/L) at OW-212B

Step	Equation	Description
1	$\bar{X}$ = **sum[X]** / **N** = **55.0** / **11** = **5.0**	Compute the mean of the last 11 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**275.0** - **3025.0**/**11**) / (**11**-1))^{½} = **0.0**	Compute sd of the last 11 measurements.
3	LCL = $\bar{\mathbf{X}}$ - **tS**/**N**^{½} = **5.0** - **1.812** * **0.0**/**11**^{½} = **5.0**	Compute lower confidence limit for the mean of the last 11 measurements.
4	UCL = $\bar{\mathbf{X}}$ + **tS**/**N**^{½} = **5.0** + **1.812** * **0.0**/**11**^{½} = **5.0**	Compute upper confidence limit for the mean of the last 11 measurements.
5	N' = **N** * (**N**-1) / 2 = **11** * (**11**-1) / 2 = **55**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**55** ± **2.576** * **0.0**^{½}) / 2 = [**27.5**, **27.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
1,4-dichlorobenzene (ug/L) at OW-220B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **40.12** / **12** = **3.343**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**464.241** - **1609.614**/**12**) / (**12**-1))^{½} = **5.478**	Compute sd of the last 12 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **3.343** - **1.795** * **5.478**/**12**^{½} = **0.505**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **3.343** + **1.795** * **5.478**/**12**^{½} = **6.182**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **-0.305**	Sen's estimator of trend.
7	var(S) = **211.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **211.667**^{½}) / 2 = [**14.261**, **51.739**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-2.165**, **0.196**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Antimony (ug/L) at OW-220B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **6.0** / **12** = **0.5**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**3.0** - **36.0**/**12**) / (**12**-1))^{½} = **0.0**	Compute sd of the last 12 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.5** - **1.795** * **0.0**/**12**^{½} = **0.5**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.5** + **1.795** * **0.0**/**12**^{½} = **0.5**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **0.0**^{½}) / 2 = [**33.0**, **33.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Arsenic (ug/L) at OW-220B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **163.54** / **12** = **13.628**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**2538.808** - **26745.332**/**12**) / (**12**-1))^{½} = **5.309**	Compute sd of the last 12 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **13.628** - **1.795** * **5.309**/**12**^{½} = **10.877**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **13.628** + **1.795** * **5.309**/**12**^{½} = **16.379**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **0.942**	Sen's estimator of trend.
7	var(S) = **209.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **209.0**^{½}) / 2 = [**14.38**, **51.62**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.089**, **3.715**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Barium (ug/L) at OW-220B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **9923.0** / **12** = **826.917**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**8.41**x**10^6** - **9.85**x**10^7**/**12**) / (**12**-1))^{½} = **136.538**	Compute sd of the last 12 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **826.917** - **1.795** * **136.538**/**12**^{½} = **756.162**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **826.917** + **1.795** * **136.538**/**12**^{½} = **897.671**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **42.492**	Sen's estimator of trend.
7	var(S) = **211.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **211.667**^{½}) / 2 = [**14.261**, **51.739**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-67.492**, **120.3**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Benzene (ug/L) at OW-220B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **60.56** / **12** = **5.047**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1131.187** - **3667.514**/**12**) / (**12**-1))^{½} = **8.663**	Compute sd of the last 12 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **5.047** - **1.795** * **8.663**/**12**^{½} = **0.557**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **5.047** + **1.795** * **8.663**/**12**^{½} = **9.536**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **-0.379**	Sen's estimator of trend.
7	var(S) = **211.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **211.667**^{½}) / 2 = [**14.261**, **51.739**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-1.145**, **-0.061**]	Two-sided confidence interval for slope.
10	UCL(S) < 0	**Significant decreasing trend.**

Worksheet 6 - Assessment Monitoring
Beryllium (ug/L) at OW-220B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.62** / **12** = **0.135**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.219** - **2.624**/**12**) / (**12**-1))^{½} = **0.0**	Compute sd of the last 12 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.135** - **1.795** * **0.0**/**12**^{½} = **0.135**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.135** + **1.795** * **0.0**/**12**^{½} = **0.135**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **0.0**^{½}) / 2 = [**33.0**, **33.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cadmium (ug/L) at OW-220B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.879** / **12** = **0.073**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.241** - **0.773**/**12**) / (**12**-1))^{½} = **0.127**	Compute sd of the last 12 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.073** - **1.795** * **0.127**/**12**^{½} = **0.008**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.073** + **1.795** * **0.127**/**12**^{½} = **0.139**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **87.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **87.667**^{½}) / 2 = [**20.94**, **45.06**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.002**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Chromium (ug/L) at OW-220B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **69.47** / **12** = **5.789**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**421.167** - **4826.081**/**12**) / (**12**-1))^{½} = **1.314**	Compute sd of the last 12 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **5.789** - **1.795** * **1.314**/**12**^{½} = **5.108**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **5.789** + **1.795** * **1.314**/**12**^{½} = **6.47**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **0.161**	Sen's estimator of trend.
7	var(S) = **212.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **212.667**^{½}) / 2 = [**14.217**, **51.783**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.716**, **0.545**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cis-1,2-dichloroethylene (ug/L) at OW-220B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **14.955** / **12** = **1.246**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**190.561** - **223.652**/**12**) / (**12**-1))^{½} = **3.953**	Compute sd of the last 12 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **1.246** - **1.795** * **3.953**/**12**^{½} = **0.0**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **1.246** + **1.795** * **3.953**/**12**^{½} = **3.295**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **47.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **47.667**^{½}) / 2 = [**24.108**, **41.892**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cobalt (ug/L) at OW-220B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **287.9** / **12** = **23.992**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**7198.83** - **82886.41**/**12**) / (**12**-1))^{½} = **5.149**	Compute sd of the last 12 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **23.992** - **1.795** * **5.149**/**12**^{½} = **21.323**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **23.992** + **1.795** * **5.149**/**12**^{½} = **26.66**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **-2.829**	Sen's estimator of trend.
7	var(S) = **211.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **211.667**^{½}) / 2 = [**14.261**, **51.739**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-5.502**, **-1.064**]	Two-sided confidence interval for slope.
10	UCL(S) < 0	**Significant decreasing trend.**

Worksheet 6 - Assessment Monitoring
Copper (ug/L) at OW-220B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **15.19** / **12** = **1.266**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**36.894** - **230.736**/**12**) / (**12**-1))^{½} = **1.267**	Compute sd of the last 12 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **1.266** - **1.795** * **1.267**/**12**^{½} = **0.609**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **1.266** + **1.795** * **1.267**/**12**^{½} = **1.923**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **47.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **47.667**^{½}) / 2 = [**24.108**, **41.892**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Lead (ug/L) at OW-220B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.017** / **12** = **0.168**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.644** - **4.068**/**12**) / (**12**-1))^{½} = **0.167**	Compute sd of the last 12 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.168** - **1.795** * **0.167**/**12**^{½} = **0.082**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.168** + **1.795** * **0.167**/**12**^{½} = **0.254**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **47.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **47.667**^{½}) / 2 = [**24.108**, **41.892**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Nickel (ug/L) at OW-220B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1436.7** / **12** = **119.725**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**174741.09** - **2.06**x**10^6**/**12**) / (**12**-1))^{½} = **15.76**	Compute sd of the last 12 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **119.725** - **1.795** * **15.76**/**12**^{½} = **111.558**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **119.725** + **1.795** * **15.76**/**12**^{½} = **127.892**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **3.199**	Sen's estimator of trend.
7	var(S) = **210.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **210.667**^{½}) / 2 = [**14.306**, **51.694**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-7.139**, **15.157**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Selenium (ug/L) at OW-220B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **6.0** / **12** = **0.5**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**3.0** - **36.0**/**12**) / (**12**-1))^{½} = **0.0**	Compute sd of the last 12 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.5** - **1.795** * **0.0**/**12**^{½} = **0.5**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.5** + **1.795** * **0.0**/**12**^{½} = **0.5**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **0.0**^{½}) / 2 = [**33.0**, **33.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Silver (ug/L) at OW-220B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.52** / **12** = **0.21**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.529** - **6.35**/**12**) / (**12**-1))^{½} = **0.0**	Compute sd of the last 12 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.21** - **1.795** * **0.0**/**12**^{½} = **0.21**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.21** + **1.795** * **0.0**/**12**^{½} = **0.21**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **0.0**^{½}) / 2 = [**33.0**, **33.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Thallium (ug/L) at OW-220B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.97** / **12** = **0.248**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**2.558** - **8.821**/**12**) / (**12**-1))^{½} = **0.407**	Compute sd of the last 12 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.248** - **1.795** * **0.407**/**12**^{½} = **0.037**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.248** + **1.795** * **0.407**/**12**^{½} = **0.458**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **47.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **47.667**^{½}) / 2 = [**24.108**, **41.892**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Vanadium (ug/L) at OW-220B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **6.6** / **12** = **0.55**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**3.63** - **43.56**/**12**) / (**12**-1))^{½} = **1.54**x**10**$^{-8}$	Compute sd of the last 12 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.55** - **1.795** * **1.54**x**10**$^{-8}$/**12**^{½} = **0.55**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.55** + **1.795** * **1.54**x**10**$^{-8}$/**12**^{½} = **0.55**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **0.0**^{½}) / 2 = [**33.0**, **33.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Vinyl chloride (ug/L) at OW-220B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.08** / **12** = **0.09**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.097** - **1.166**/**12**) / (**12**-1))^{½} = **0.0**	Compute sd of the last 12 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.09** - **1.795** * **0.0**/**12**^{½} = **0.09**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.09** + **1.795** * **0.0**/**12**^{½} = **0.09**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **0.0**^{½}) / 2 = [**33.0**, **33.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Zinc (ug/L) at OW-220B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **60.0** / **12** = **5.0**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**300.0** - **3600.0**/**12**) / (**12**-1))^{½} = **0.0**	Compute sd of the last 12 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **5.0** - **1.795** * **0.0**/**12**^{½} = **5.0**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **5.0** + **1.795** * **0.0**/**12**^{½} = **5.0**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **0.0**^{½}) / 2 = [**33.0**, **33.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
1,4-dichlorobenzene (ug/L) at OW-221B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.38** / **12** = **0.115**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.159** - **1.904**/**12**) / (**12**-1))^{½} = **9.01**x**10**$^{-10}$	Compute sd of the last 12 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.115** - **1.795** * **9.01**x**10**$^{-10}$/**12**^{½} = **0.115**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.115** + **1.795** * **9.01**x**10**$^{-10}$/**12**^{½} = **0.115**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **0.0**^{½}) / 2 = [**33.0**, **33.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Antimony (ug/L) at OW-221B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **4.14** / **12** = **0.345**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1.428** - **17.14**/**12**) / (**12**-1))^{½} = **5.16**x**10**$^{-9}$	Compute sd of the last 12 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.345** - **1.795** * **5.16**x**10**$^{-9}$/**12**^{½} = **0.345**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.345** + **1.795** * **5.16**x**10**$^{-9}$/**12**^{½} = **0.345**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **0.0**^{½}) / 2 = [**33.0**, **33.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Arsenic (ug/L) at OW-221B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **62.78** / **12** = **5.232**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**597.273** - **3941.328**/**12**) / (**12**-1))^{½} = **4.944**	Compute sd of the last 12 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **5.232** - **1.795** * **4.944**/**12**^{½} = **2.67**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **5.232** + **1.795** * **4.944**/**12**^{½} = **7.793**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **3.069**	Sen's estimator of trend.
7	var(S) = **204.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **204.0**^{½}) / 2 = [**14.604**, **51.396**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**1.527**, **3.75**]	Two-sided confidence interval for slope.
10	LCL(S) > 0	**Significant increasing trend.**

Worksheet 6 - Assessment Monitoring
Barium (ug/L) at OW-221B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **5567.0** / **12** = **463.917**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**3.35**x**10^6** - **3.10**x**10^7**/**12**) / (**12**-1))^{½} = **263.274**	Compute sd of the last 12 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **463.917** - **1.795** * **263.274**/**12**^{½} = **327.487**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **463.917** + **1.795** * **263.274**/**12**^{½} = **600.346**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **87.534**	Sen's estimator of trend.
7	var(S) = **212.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **212.667**^{½}) / 2 = [**14.217**, **51.783**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-3.187**, **253.732**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Benzene (ug/L) at OW-221B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **10.774** / **12** = **0.898**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**11.951** - **116.079**/**12**) / (**12**-1))^{½} = **0.455**	Compute sd of the last 12 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.898** - **1.795** * **0.455**/**12**^{½} = **0.662**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.898** + **1.795** * **0.455**/**12**^{½} = **1.134**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **-0.166**	Sen's estimator of trend.
7	var(S) = **212.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **212.667**^{½}) / 2 = [**14.217**, **51.783**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.458**, **0.115**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Beryllium (ug/L) at OW-221B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.62** / **12** = **0.135**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.219** - **2.624**/**12**) / (**12**-1))^{½} = **0.0**	Compute sd of the last 12 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.135** - **1.795** * **0.0**/**12**^{½} = **0.135**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.135** + **1.795** * **0.0**/**12**^{½} = **0.135**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **0.0**^{½}) / 2 = [**33.0**, **33.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cadmium (ug/L) at OW-221B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.306** / **12** = **0.026**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.008** - **0.094**/**12**) / (**12**-1))^{½} = **0.0**	Compute sd of the last 12 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.026** - **1.795** * **0.0**/**12**^{½} = **0.026**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.026** + **1.795** * **0.0**/**12**^{½} = **0.026**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **0.0**^{½}) / 2 = [**33.0**, **33.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Chromium (ug/L) at OW-221B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **6.6** / **12** = **0.55**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**3.63** - **43.56**/**12**) / (**12**-1))^{½} = **1.54**x**10**$^{-8}$	Compute sd of the last 12 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.55** - **1.795** * **1.54**x**10**$^{-8}$/**12**^{½} = **0.55**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.55** + **1.795** * **1.54**x**10**$^{-8}$/**12**^{½} = **0.55**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **0.0**^{½}) / 2 = [**33.0**, **33.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cis-1,2-dichloroethylene (ug/L) at OW-221B

Step	Equation	Description
1	$\bar{X}$ = **sum[X]** / **N** = **11.4** / **12** = **0.95**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**16.283** - **129.96**/**12**) / (**12**-1))^{½} = **0.704**	Compute sd of the last 12 measurements.
3	LCL = $\bar{\mathbf{X}}$ - **tS**/**N**^{½} = **0.95** - **1.795** * **0.704**/**12**^{½} = **0.585**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\bar{\mathbf{X}}$ + **tS**/**N**^{½} = **0.95** + **1.795** * **0.704**/**12**^{½} = **1.315**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **204.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **204.0**^{½}) / 2 = [**14.604**, **51.396**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.667**, **0.283**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cobalt (ug/L) at OW-221B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **63.84** / **12** = **5.32**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**373.226** - **4075.546**/**12**) / (**12**-1))^{½} = **1.748**	Compute sd of the last 12 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **5.32** - **1.795** * **1.748**/**12**^{½} = **4.414**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **5.32** + **1.795** * **1.748**/**12**^{½} = **6.226**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **-0.246**	Sen's estimator of trend.
7	var(S) = **212.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **212.667**^{½}) / 2 = [**14.217**, **51.783**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-1.481**, **1.274**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Copper (ug/L) at OW-221B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **10.8** / **12** = **0.9**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**9.72** - **116.64**/**12**) / (**12**-1))^{½} = **0.0**	Compute sd of the last 12 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.9** - **1.795** * **0.0**/**12**^{½} = **0.9**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.9** + **1.795** * **0.0**/**12**^{½} = **0.9**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **0.0**^{½}) / 2 = [**33.0**, **33.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Lead (ug/L) at OW-221B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **3.44** / **12** = **0.287**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**4.653** - **11.834**/**12**) / (**12**-1))^{½} = **0.577**	Compute sd of the last 12 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.287** - **1.795** * **0.577**/**12**^{½} = **0.0**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.287** + **1.795** * **0.577**/**12**^{½} = **0.586**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **47.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **47.667**^{½}) / 2 = [**24.108**, **41.892**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Nickel (ug/L) at OW-221B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **53.25** / **12** = **4.438**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**356.759** - **2835.563**/**12**) / (**12**-1))^{½} = **3.309**	Compute sd of the last 12 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **4.438** - **1.795** * **3.309**/**12**^{½} = **2.723**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **4.438** + **1.795** * **3.309**/**12**^{½} = **6.152**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **-1.322**	Sen's estimator of trend.
7	var(S) = **196.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **196.0**^{½}) / 2 = [**14.968**, **51.032**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-4.842**, **0.004**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Selenium (ug/L) at OW-221B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **6.0** / **12** = **0.5**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**3.0** - **36.0**/**12**) / (**12**-1))^{½} = **0.0**	Compute sd of the last 12 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.5** - **1.795** * **0.0**/**12**^{½} = **0.5**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.5** + **1.795** * **0.0**/**12**^{½} = **0.5**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **0.0**^{½}) / 2 = [**33.0**, **33.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Silver (ug/L) at OW-221B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **6.235** / **12** = **0.52**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**13.192** - **38.875**/**12**) / (**12**-1))^{½} = **0.951**	Compute sd of the last 12 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.52** - **1.795** * **0.951**/**12**^{½} = **0.027**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.52** + **1.795** * **0.951**/**12**^{½} = **1.012**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **47.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **47.667**^{½}) / 2 = [**24.108**, **41.892**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Thallium (ug/L) at OW-221B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.67** / **12** = **0.223**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1.724** - **7.129**/**12**) / (**12**-1))^{½} = **0.32**	Compute sd of the last 12 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.223** - **1.795** * **0.32**/**12**^{½} = **0.056**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.223** + **1.795** * **0.32**/**12**^{½} = **0.389**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **47.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **47.667**^{½}) / 2 = [**24.108**, **41.892**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Vanadium (ug/L) at OW-221B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **6.6** / **12** = **0.55**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**3.63** - **43.56**/**12**) / (**12**-1))^{½} = **1.54**x**10**$^{-8}$	Compute sd of the last 12 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.55** - **1.795** * **1.54**x**10**$^{-8}$/**12**^{½} = **0.55**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.55** + **1.795** * **1.54**x**10**$^{-8}$/**12**^{½} = **0.55**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **0.0**^{½}) / 2 = [**33.0**, **33.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Vinyl chloride (ug/L) at OW-221B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.08** / **12** = **0.09**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.097** - **1.166**/**12**) / (**12**-1))^{½} = **0.0**	Compute sd of the last 12 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.09** - **1.795** * **0.0**/**12**^{½} = **0.09**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.09** + **1.795** * **0.0**/**12**^{½} = **0.09**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **0.0**^{½}) / 2 = [**33.0**, **33.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Zinc (ug/L) at OW-221B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **60.0** / **12** = **5.0**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**300.0** - **3600.0**/**12**) / (**12**-1))^{½} = **0.0**	Compute sd of the last 12 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **5.0** - **1.795** * **0.0**/**12**^{½} = **5.0**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **5.0** + **1.795** * **0.0**/**12**^{½} = **5.0**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **0.0**^{½}) / 2 = [**33.0**, **33.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
1,4-dichlorobenzene (ug/L) at OW-222B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.38** / **12** = **0.115**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.159** - **1.904**/**12**) / (**12**-1))^{½} = **9.01**x**10**$^{-10}$	Compute sd of the last 12 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.115** - **1.795** * **9.01**x**10**$^{-10}$/**12**^{½} = **0.115**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.115** + **1.795** * **9.01**x**10**$^{-10}$/**12**^{½} = **0.115**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **0.0**^{½}) / 2 = [**33.0**, **33.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Antimony (ug/L) at OW-222B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **4.14** / **12** = **0.345**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1.428** - **17.14**/**12**) / (**12**-1))^{½} = **5.16**x**10**$^{-9}$	Compute sd of the last 12 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.345** - **1.795** * **5.16**x**10**$^{-9}$/**12**^{½} = **0.345**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.345** + **1.795** * **5.16**x**10**$^{-9}$/**12**^{½} = **0.345**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **0.0**^{½}) / 2 = [**33.0**, **33.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Arsenic (ug/L) at OW-222B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **6.525** / **12** = **0.544**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**7.307** - **42.576**/**12**) / (**12**-1))^{½} = **0.585**	Compute sd of the last 12 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.544** - **1.795** * **0.585**/**12**^{½} = **0.241**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.544** + **1.795** * **0.585**/**12**^{½} = **0.847**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **47.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **47.667**^{½}) / 2 = [**24.108**, **41.892**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Barium (ug/L) at OW-222B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1912.0** / **12** = **159.333**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**309600.0** - **3.66**x**10^6**/**12**) / (**12**-1))^{½} = **21.223**	Compute sd of the last 12 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **159.333** - **1.795** * **21.223**/**12**^{½} = **148.335**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **159.333** + **1.795** * **21.223**/**12**^{½} = **170.331**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **-3.566**	Sen's estimator of trend.
7	var(S) = **211.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **211.667**^{½}) / 2 = [**14.261**, **51.739**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-18.049**, **10.711**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Benzene (ug/L) at OW-222B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.32** / **12** = **0.11**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.145** - **1.742**/**12**) / (**12**-1))^{½} = **0.0**	Compute sd of the last 12 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.11** - **1.795** * **0.0**/**12**^{½} = **0.11**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.11** + **1.795** * **0.0**/**12**^{½} = **0.11**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **0.0**^{½}) / 2 = [**33.0**, **33.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Beryllium (ug/L) at OW-222B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.62** / **12** = **0.135**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.219** - **2.624**/**12**) / (**12**-1))^{½} = **0.0**	Compute sd of the last 12 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.135** - **1.795** * **0.0**/**12**^{½} = **0.135**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.135** + **1.795** * **0.0**/**12**^{½} = **0.135**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **0.0**^{½}) / 2 = [**33.0**, **33.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cadmium (ug/L) at OW-222B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.997** / **12** = **0.083**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.185** - **0.994**/**12**) / (**12**-1))^{½} = **0.096**	Compute sd of the last 12 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.083** - **1.795** * **0.096**/**12**^{½} = **0.033**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.083** + **1.795** * **0.096**/**12**^{½} = **0.133**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **147.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **147.333**^{½}) / 2 = [**17.366**, **48.634**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.08**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Chromium (ug/L) at OW-222B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **6.6** / **12** = **0.55**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**3.63** - **43.56**/**12**) / (**12**-1))^{½} = **1.54**x**10**$^{-8}$	Compute sd of the last 12 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.55** - **1.795** * **1.54**x**10**$^{-8}$/**12**^{½} = **0.55**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.55** + **1.795** * **1.54**x**10**$^{-8}$/**12**^{½} = **0.55**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **0.0**^{½}) / 2 = [**33.0**, **33.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cis-1,2-dichloroethylene (ug/L) at OW-222B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.26** / **12** = **0.105**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.132** - **1.588**/**12**) / (**12**-1))^{½} = **0.0**	Compute sd of the last 12 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.105** - **1.795** * **0.0**/**12**^{½} = **0.105**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.105** + **1.795** * **0.0**/**12**^{½} = **0.105**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **0.0**^{½}) / 2 = [**33.0**, **33.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cobalt (ug/L) at OW-222B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **101.31** / **12** = **8.443**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**869.922** - **10263.716**/**12**) / (**12**-1))^{½} = **1.153**	Compute sd of the last 12 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **8.443** - **1.795** * **1.153**/**12**^{½} = **7.845**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **8.443** + **1.795** * **1.153**/**12**^{½} = **9.04**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **-0.373**	Sen's estimator of trend.
7	var(S) = **212.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **212.667**^{½}) / 2 = [**14.217**, **51.783**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.981**, **-0.122**]	Two-sided confidence interval for slope.
10	UCL(S) < 0	**Significant decreasing trend.**

Worksheet 6 - Assessment Monitoring
Copper (ug/L) at OW-222B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **46.87** / **12** = **3.906**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**866.964** - **2196.797**/**12**) / (**12**-1))^{½} = **7.885**	Compute sd of the last 12 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **3.906** - **1.795** * **7.885**/**12**^{½} = **0.0**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **3.906** + **1.795** * **7.885**/**12**^{½} = **7.992**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **120.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **120.667**^{½}) / 2 = [**18.852**, **47.148**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Lead (ug/L) at OW-222B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **3.01** / **12** = **0.251**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**3.015** - **9.06**/**12**) / (**12**-1))^{½} = **0.453**	Compute sd of the last 12 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.251** - **1.795** * **0.453**/**12**^{½} = **0.016**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.251** + **1.795** * **0.453**/**12**^{½} = **0.486**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **47.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **47.667**^{½}) / 2 = [**24.108**, **41.892**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Nickel (ug/L) at OW-222B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **257.65** / **12** = **21.471**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**7169.563** - **66383.523**/**12**) / (**12**-1))^{½} = **12.201**	Compute sd of the last 12 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **21.471** - **1.795** * **12.201**/**12**^{½} = **15.148**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **21.471** + **1.795** * **12.201**/**12**^{½} = **27.794**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **-7.543**	Sen's estimator of trend.
7	var(S) = **212.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **212.667**^{½}) / 2 = [**14.217**, **51.783**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-13.292**, **-3.305**]	Two-sided confidence interval for slope.
10	UCL(S) < 0	**Significant decreasing trend.**

Worksheet 6 - Assessment Monitoring
Selenium (ug/L) at OW-222B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **6.0** / **12** = **0.5**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**3.0** - **36.0**/**12**) / (**12**-1))^{½} = **0.0**	Compute sd of the last 12 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.5** - **1.795** * **0.0**/**12**^{½} = **0.5**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.5** + **1.795** * **0.0**/**12**^{½} = **0.5**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **0.0**^{½}) / 2 = [**33.0**, **33.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Silver (ug/L) at OW-222B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.52** / **12** = **0.21**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.529** - **6.35**/**12**) / (**12**-1))^{½} = **0.0**	Compute sd of the last 12 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.21** - **1.795** * **0.0**/**12**^{½} = **0.21**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.21** + **1.795** * **0.0**/**12**^{½} = **0.21**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **0.0**^{½}) / 2 = [**33.0**, **33.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Thallium (ug/L) at OW-222B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.56** / **12** = **0.13**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.203** - **2.434**/**12**) / (**12**-1))^{½} = **3.16**x**10**$^{-9}$	Compute sd of the last 12 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.13** - **1.795** * **3.16**x**10**$^{-9}$/**12**^{½} = **0.13**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.13** + **1.795** * **3.16**x**10**$^{-9}$/**12**^{½} = **0.13**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **0.0**^{½}) / 2 = [**33.0**, **33.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Vanadium (ug/L) at OW-222B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **6.6** / **12** = **0.55**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**3.63** - **43.56**/**12**) / (**12**-1))^{½} = **1.54**x**10**$^{-8}$	Compute sd of the last 12 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.55** - **1.795** * **1.54**x**10**$^{-8}$/**12**^{½} = **0.55**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.55** + **1.795** * **1.54**x**10**$^{-8}$/**12**^{½} = **0.55**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **0.0**^{½}) / 2 = [**33.0**, **33.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Vinyl chloride (ug/L) at OW-222B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.08** / **12** = **0.09**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.097** - **1.166**/**12**) / (**12**-1))^{½} = **0.0**	Compute sd of the last 12 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.09** - **1.795** * **0.0**/**12**^{½} = **0.09**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.09** + **1.795** * **0.0**/**12**^{½} = **0.09**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **0.0**^{½}) / 2 = [**33.0**, **33.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Zinc (ug/L) at OW-222B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **60.0** / **12** = **5.0**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**300.0** - **3600.0**/**12**) / (**12**-1))^{½} = **0.0**	Compute sd of the last 12 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **5.0** - **1.795** * **0.0**/**12**^{½} = **5.0**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **5.0** + **1.795** * **0.0**/**12**^{½} = **5.0**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **0.0**^{½}) / 2 = [**33.0**, **33.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
1,4-dichlorobenzene (ug/L) at OW-223B

Step	Equation	Description
1	$\overline{X}$ = **sum[X] / N** = **1.38 / 12** = **0.115**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2] - sum[X]^2/N**) / (**N**-1))^{½} = ((**0.159 - 1.904/12**) / (**12**-1))^{½} = **9.01x10^{-10}**	Compute sd of the last 12 measurements.
3	LCL = $\overline{\mathbf{X}}$ **- tS/N**^{½} = **0.115 - 1.795 * 9.01x10^{-10}/12**^{½} = **0.115**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\overline{\mathbf{X}}$ **+ tS/N**^{½} = **0.115 + 1.795 * 9.01x10^{-10}/12**^{½} = **0.115**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **0.0**^{½}) / 2 = [**33.0**, **33.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Antimony (ug/L) at OW-223B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **4.14** / **12** = **0.345**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1.428** - **17.14**/**12**) / (**12**-1))^{½} = **5.16**x**10**$^{-9}$	Compute sd of the last 12 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.345** - **1.795** * **5.16**x**10**$^{-9}$/**12**^{½} = **0.345**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.345** + **1.795** * **5.16**x**10**$^{-9}$/**12**^{½} = **0.345**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **0.0**^{½}) / 2 = [**33.0**, **33.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Arsenic (ug/L) at OW-223B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **4.5** / **12** = **0.375**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1.688** - **20.25**/**12**) / (**12**-1))^{½} = **0.0**	Compute sd of the last 12 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.375** - **1.795** * **0.0**/**12**^{½} = **0.375**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.375** + **1.795** * **0.0**/**12**^{½} = **0.375**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **0.0**^{½}) / 2 = [**33.0**, **33.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Barium (ug/L) at OW-223B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1383.2** / **12** = **115.267**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**176871.28** - **1.91**x**10^6**/**12**) / (**12**-1))^{½} = **39.811**	Compute sd of the last 12 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **115.267** - **1.795** * **39.811**/**12**^{½} = **94.636**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **115.267** + **1.795** * **39.811**/**12**^{½} = **135.897**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **-24.764**	Sen's estimator of trend.
7	var(S) = **212.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **212.667**^{½}) / 2 = [**14.217**, **51.783**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-39.413**, **-9.255**]	Two-sided confidence interval for slope.
10	UCL(S) < 0	**Significant decreasing trend.**

Worksheet 6 - Assessment Monitoring
Benzene (ug/L) at OW-223B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.32** / **12** = **0.11**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.145** - **1.742**/**12**) / (**12**-1))^{½} = **0.0**	Compute sd of the last 12 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.11** - **1.795** * **0.0**/**12**^{½} = **0.11**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.11** + **1.795** * **0.0**/**12**^{½} = **0.11**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **0.0**^{½}) / 2 = [**33.0**, **33.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Beryllium (ug/L) at OW-223B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.62** / **12** = **0.135**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.219** - **2.624**/**12**) / (**12**-1))^{½} = **0.0**	Compute sd of the last 12 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.135** - **1.795** * **0.0**/**12**^{½} = **0.135**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.135** + **1.795** * **0.0**/**12**^{½} = **0.135**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **0.0**^{½}) / 2 = [**33.0**, **33.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cadmium (ug/L) at OW-223B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.306** / **12** = **0.026**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.008** - **0.094**/**12**) / (**12**-1))^{½} = **0.0**	Compute sd of the last 12 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.026** - **1.795** * **0.0**/**12**^{½} = **0.026**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.026** + **1.795** * **0.0**/**12**^{½} = **0.026**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **0.0**^{½}) / 2 = [**33.0**, **33.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Chromium (ug/L) at OW-223B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **19.21** / **12** = **1.601**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**102.159** - **369.024**/**12**) / (**12**-1))^{½} = **2.548**	Compute sd of the last 12 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **1.601** - **1.795** * **2.548**/**12**^{½} = **0.281**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **1.601** + **1.795** * **2.548**/**12**^{½} = **2.921**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **87.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **87.667**^{½}) / 2 = [**20.94**, **45.06**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cis-1,2-dichloroethylene (ug/L) at OW-223B

Step	Equation	Description
1	$\bar{X}$ = **sum[X]** / **N** = **1.26** / **12** = **0.105**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.132** - **1.588**/**12**) / (**12**-1))^{½} = **0.0**	Compute sd of the last 12 measurements.
3	LCL = $\bar{\mathbf{X}}$ - **tS**/**N**^{½} = **0.105** - **1.795** * **0.0**/**12**^{½} = **0.105**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\bar{\mathbf{X}}$ + **tS**/**N**^{½} = **0.105** + **1.795** * **0.0**/**12**^{½} = **0.105**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **0.0**^{½}) / 2 = [**33.0**, **33.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cobalt (ug/L) at OW-223B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.02** / **12** = **0.085**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.087** - **1.04**/**12**) / (**12**-1))^{½} = **1.76**x**10**$^{-9}$	Compute sd of the last 12 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.085** - **1.795** * **1.76**x**10**$^{-9}$/**12**^{½} = **0.085**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.085** + **1.795** * **1.76**x**10**$^{-9}$/**12**^{½} = **0.085**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **0.0**^{½}) / 2 = [**33.0**, **33.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Copper (ug/L) at OW-223B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **45.98** / **12** = **3.832**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**254.296** - **2114.16**/**12**) / (**12**-1))^{½} = **2.665**	Compute sd of the last 12 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **3.832** - **1.795** * **2.665**/**12**^{½} = **2.451**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **3.832** + **1.795** * **2.665**/**12**^{½} = **5.213**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **-0.843**	Sen's estimator of trend.
7	var(S) = **196.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **196.0**^{½}) / 2 = [**14.968**, **51.032**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-2.793**, **0.028**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Lead (ug/L) at OW-223B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.44** / **12** = **0.12**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.173** - **2.074**/**12**) / (**12**-1))^{½} = **0.0**	Compute sd of the last 12 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.12** - **1.795** * **0.0**/**12**^{½} = **0.12**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.12** + **1.795** * **0.0**/**12**^{½} = **0.12**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **0.0**^{½}) / 2 = [**33.0**, **33.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Nickel (ug/L) at OW-223B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **49.11** / **12** = **4.093**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**324.358** - **2411.792**/**12**) / (**12**-1))^{½} = **3.349**	Compute sd of the last 12 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **4.093** - **1.795** * **3.349**/**12**^{½} = **2.357**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **4.093** + **1.795** * **3.349**/**12**^{½} = **5.828**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **-1.55**	Sen's estimator of trend.
7	var(S) = **184.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **184.333**^{½}) / 2 = [**15.513**, **50.487**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-3.077**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Selenium (ug/L) at OW-223B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **6.0** / **12** = **0.5**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**3.0** - **36.0**/**12**) / (**12**-1))^{½} = **0.0**	Compute sd of the last 12 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.5** - **1.795** * **0.0**/**12**^{½} = **0.5**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.5** + **1.795** * **0.0**/**12**^{½} = **0.5**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **0.0**^{½}) / 2 = [**33.0**, **33.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Silver (ug/L) at OW-223B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.52** / **12** = **0.21**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.529** - **6.35**/**12**) / (**12**-1))^{½} = **0.0**	Compute sd of the last 12 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.21** - **1.795** * **0.0**/**12**^{½} = **0.21**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.21** + **1.795** * **0.0**/**12**^{½} = **0.21**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **0.0**^{½}) / 2 = [**33.0**, **33.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Thallium (ug/L) at OW-223B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.85** / **12** = **0.238**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**2.202** - **8.123**/**12**) / (**12**-1))^{½} = **0.372**	Compute sd of the last 12 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.238** - **1.795** * **0.372**/**12**^{½} = **0.045**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.238** + **1.795** * **0.372**/**12**^{½} = **0.43**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **47.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **47.667**^{½}) / 2 = [**24.108**, **41.892**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Vanadium (ug/L) at OW-223B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **6.6** / **12** = **0.55**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**3.63** - **43.56**/**12**) / (**12**-1))^{½} = **1.54**x**10**$^{-8}$	Compute sd of the last 12 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.55** - **1.795** * **1.54**x**10**$^{-8}$/**12**^{½} = **0.55**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.55** + **1.795** * **1.54**x**10**$^{-8}$/**12**^{½} = **0.55**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **0.0**^{½}) / 2 = [**33.0**, **33.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Vinyl chloride (ug/L) at OW-223B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.08** / **12** = **0.09**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.097** - **1.166**/**12**) / (**12**-1))^{½} = **0.0**	Compute sd of the last 12 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.09** - **1.795** * **0.0**/**12**^{½} = **0.09**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.09** + **1.795** * **0.0**/**12**^{½} = **0.09**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **0.0**^{½}) / 2 = [**33.0**, **33.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Zinc (ug/L) at OW-223B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **262.0** / **12** = **21.833**	Compute the mean of the last 12 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**43124.0** - **68644.0**/**12**) / (**12**-1))^{½} = **58.312**	Compute sd of the last 12 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **21.833** - **1.795** * **58.312**/**12**^{½} = **0.0**	Compute lower confidence limit for the mean of the last 12 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **21.833** + **1.795** * **58.312**/**12**^{½} = **52.051**	Compute upper confidence limit for the mean of the last 12 measurements.
5	N' = **N** * (**N**-1) / 2 = **12** * (**12**-1) / 2 = **66**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **47.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**66** ± **2.576** * **47.667**^{½}) / 2 = [**24.108**, **41.892**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
1,4-dichlorobenzene (ug/L) at OW-224B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **17.21** / **7** = **2.459**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**48.555** - **296.184**/**7**) / (**7**-1))^{½} = **1.02**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **2.459** - **1.942** * **1.02**/**7**^{½} = **1.71**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **2.459** + **1.942** * **1.02**/**7**^{½} = **3.207**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.219**	Sen's estimator of trend.
7	var(S) = **43.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **43.333**^{½}) / 2 = [**2.021**, **18.979**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-4.643**, **5.225**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Antimony (ug/L) at OW-224B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **3.5** / **7** = **0.5**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1.75** - **12.25**/**7**) / (**7**-1))^{½} = **0.0**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.5** - **1.942** * **0.0**/**7**^{½} = **0.5**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.5** + **1.942** * **0.0**/**7**^{½} = **0.5**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Arsenic (ug/L) at OW-224B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **37.71** / **7** = **5.387**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**220.233** - **1422.044**/**7**) / (**7**-1))^{½} = **1.687**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **5.387** - **1.942** * **1.687**/**7**^{½} = **4.148**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **5.387** + **1.942** * **1.687**/**7**^{½} = **6.626**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **2.716**	Sen's estimator of trend.
7	var(S) = **44.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **44.333**^{½}) / 2 = [**1.924**, **19.076**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-1.388**, **5.562**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Barium (ug/L) at OW-224B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **14970.0** / **7** = **2138.571**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**3.29**x**10^7** - **2.24**x**10^8**/**7**) / (**7**-1))^{½} = **374.318**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **2138.571** - **1.942** * **374.318**/**7**^{½} = **1863.782**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **2138.571** + **1.942** * **374.318**/**7**^{½} = **2413.361**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **655.871**	Sen's estimator of trend.
7	var(S) = **44.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **44.333**^{½}) / 2 = [**1.924**, **19.076**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-439.671**, **891.347**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Benzene (ug/L) at OW-224B

Step	Equation	Description
1	$\bar{X}$ = **sum[X]** / **N** = **20.26** / **7** = **2.894**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**71.494** - **410.468**/**7**) / (**7**-1))^{½} = **1.464**	Compute sd of the last 7 measurements.
3	LCL = $\bar{\mathbf{X}}$ - **tS**/**N**^{½} = **2.894** - **1.942** * **1.464**/**7**^{½} = **1.82**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\bar{\mathbf{X}}$ + **tS**/**N**^{½} = **2.894** + **1.942** * **1.464**/**7**^{½} = **3.969**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.625**	Sen's estimator of trend.
7	var(S) = **43.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **43.333**^{½}) / 2 = [**2.021**, **18.979**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-5.815**, **6.847**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Beryllium (ug/L) at OW-224B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.155** / **7** = **0.165**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.191** - **1.334**/**7**) / (**7**-1))^{½} = **1.49**x**10**$^{-9}$	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.165** - **1.942** * **1.49**x**10**$^{-9}$/**7**^{½} = **0.165**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.165** + **1.942** * **1.49**x**10**$^{-9}$/**7**^{½} = **0.165**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cadmium (ug/L) at OW-224B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **4.524** / **7** = **0.646**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**4.7** - **20.467**/**7**) / (**7**-1))^{½} = **0.544**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.646** - **1.942** * **0.544**/**7**^{½} = **0.247**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.646** + **1.942** * **0.544**/**7**^{½} = **1.046**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **-0.742**	Sen's estimator of trend.
7	var(S) = **44.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **44.333**^{½}) / 2 = [**1.924**, **19.076**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-2.104**, **0.029**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Chromium (ug/L) at OW-224B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **52.27** / **7** = **7.467**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**448.201** - **2732.153**/**7**) / (**7**-1))^{½} = **3.106**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **7.467** - **1.942** * **3.106**/**7**^{½} = **5.187**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **7.467** + **1.942** * **3.106**/**7**^{½} = **9.747**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **-0.514**	Sen's estimator of trend.
7	var(S) = **44.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **44.333**^{½}) / 2 = [**1.924**, **19.076**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-25.995**, **4.016**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cis-1,2-dichloroethylene (ug/L) at OW-224B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **3.095** / **7** = **0.442**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**3.366** - **9.579**/**7**) / (**7**-1))^{½} = **0.577**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.442** - **1.942** * **0.577**/**7**^{½} = **0.019**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.442** + **1.942** * **0.577**/**7**^{½} = **0.866**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **-0.698**	Sen's estimator of trend.
7	var(S) = **27.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **27.667**^{½}) / 2 = [**3.725**, **17.275**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-1.997**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cobalt (ug/L) at OW-224B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **249.3** / **7** = **35.614**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**10478.35** - **62150.49**/**7**) / (**7**-1))^{½} = **16.328**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **35.614** - **1.942** * **16.328**/**7**^{½} = **23.627**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **35.614** + **1.942** * **16.328**/**7**^{½} = **47.601**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **-20.946**	Sen's estimator of trend.
7	var(S) = **44.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **44.333**^{½}) / 2 = [**1.924**, **19.076**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-80.013**, **13.435**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Copper (ug/L) at OW-224B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **29.13** / **7** = **4.161**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**355.095** - **848.557**/**7**) / (**7**-1))^{½} = **6.243**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **4.161** - **1.942** * **6.243**/**7**^{½} = **0.0**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **4.161** + **1.942** * **6.243**/**7**^{½} = **8.745**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **27.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **27.667**^{½}) / 2 = [**3.725**, **17.275**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-19.995**, **1.634**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Lead (ug/L) at OW-224B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **9.157** / **7** = **1.308**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**12.682** - **83.851**/**7**) / (**7**-1))^{½} = **0.342**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **1.308** - **1.942** * **0.342**/**7**^{½} = **1.057**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **1.308** + **1.942** * **0.342**/**7**^{½} = **1.56**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.498**	Sen's estimator of trend.
7	var(S) = **44.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **44.333**^{½}) / 2 = [**1.924**, **19.076**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.941**, **1.38**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Nickel (ug/L) at OW-224B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1213.0** / **7** = **173.286**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**242523.0** - **1.47**x**10^6**/**7**) / (**7**-1))^{½} = **73.402**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **173.286** - **1.942** * **73.402**/**7**^{½} = **119.401**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **173.286** + **1.942** * **73.402**/**7**^{½} = **227.171**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **-94.381**	Sen's estimator of trend.
7	var(S) = **44.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **44.333**^{½}) / 2 = [**1.924**, **19.076**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-316.627**, **42.348**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Selenium (ug/L) at OW-224B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **4.9** / **7** = **0.7**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**3.43** - **24.01**/**7**) / (**7**-1))^{½} = **0.0**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.7** - **1.942** * **0.0**/**7**^{½} = **0.7**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.7** + **1.942** * **0.0**/**7**^{½} = **0.7**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Silver (ug/L) at OW-224B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.75** / **7** = **0.25**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.438** - **3.063**/**7**) / (**7**-1))^{½} = **0.0**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.25** - **1.942** * **0.0**/**7**^{½} = **0.25**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.25** + **1.942** * **0.0**/**7**^{½} = **0.25**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Thallium (ug/L) at OW-224B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **3.44** / **7** = **0.491**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**3.978** - **11.834**/**7**) / (**7**-1))^{½} = **0.617**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.491** - **1.942** * **0.617**/**7**^{½} = **0.038**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.491** + **1.942** * **0.617**/**7**^{½} = **0.945**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **27.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **27.667**^{½}) / 2 = [**3.725**, **17.275**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.516**, **1.237**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Vanadium (ug/L) at OW-224B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **3.85** / **7** = **0.55**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**2.118** - **14.823**/**7**) / (**7**-1))^{½} = **9.58**x**10**$^{-9}$	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.55** - **1.942** * **9.58**x**10**$^{-9}$/**7**^{½} = **0.55**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.55** + **1.942** * **9.58**x**10**$^{-9}$/**7**^{½} = **0.55**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Vinyl chloride (ug/L) at OW-224B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.63** / **7** = **0.09**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.057** - **0.397**/**7**) / (**7**-1))^{½} = **9.75**x**10**$^{-10}$	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.09** - **1.942** * **9.75**x**10**$^{-10}$/**7**^{½} = **0.09**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.09** + **1.942** * **9.75**x**10**$^{-10}$/**7**^{½} = **0.09**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Zinc (ug/L) at OW-224B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **33.95** / **7** = **4.85**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**164.658** - **1152.603**/**7**) / (**7**-1))^{½} = **0.0**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **4.85** - **1.942** * **0.0**/**7**^{½} = **4.85**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **4.85** + **1.942** * **0.0**/**7**^{½} = **4.85**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
1,4-dichlorobenzene (ug/L) at OW-225B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.895** / **7** = **0.414**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**2.774** - **8.381**/**7**) / (**7**-1))^{½} = **0.513**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.414** - **1.942** * **0.513**/**7**^{½} = **0.037**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.414** + **1.942** * **0.513**/**7**^{½} = **0.79**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **27.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **27.667**^{½}) / 2 = [**3.725**, **17.275**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-1.594**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Antimony (ug/L) at OW-225B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **3.5** / **7** = **0.5**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1.75** - **12.25**/**7**) / (**7**-1))^{½} = **0.0**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.5** - **1.942** * **0.0**/**7**^{½} = **0.5**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.5** + **1.942** * **0.0**/**7**^{½} = **0.5**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Arsenic (ug/L) at OW-225B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **26.74** / **8** = **3.343**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**134.725** - **715.028**/**8**) / (**8**-1))^{½} = **2.545**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **3.343** - **1.895** * **2.545**/**8**^{½} = **1.638**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **3.343** + **1.895** * **2.545**/**8**^{½} = **5.047**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **8** * (**8**-1) / 2 = **28**	Number of sample pairs during trend detection period.
6	S = **3.733**	Sen's estimator of trend.
7	var(S) = **64.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**28** ± **2.576** * **64.333**^{½}) / 2 = [**3.669**, **24.331**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.63**, **5.203**]	Two-sided confidence interval for slope.
10	LCL(S) > 0	**Significant increasing trend.**

Worksheet 6 - Assessment Monitoring
Barium (ug/L) at OW-225B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **10130.0** / **7** = **1447.143**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1.49**x**10^7** - **1.03**x**10^8**/**7**) / (**7**-1))^{½} = **216.927**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **1447.143** - **1.942** * **216.927**/**7**^{½} = **1287.895**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **1447.143** + **1.942** * **216.927**/**7**^{½} = **1606.39**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **12.87**	Sen's estimator of trend.
7	var(S) = **44.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **44.333**^{½}) / 2 = [**1.924**, **19.076**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-1111.516**, **874.72**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Benzene (ug/L) at OW-225B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **7.392** / **7** = **1.056**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**7.986** - **54.642**/**7**) / (**7**-1))^{½} = **0.173**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **1.056** - **1.942** * **0.173**/**7**^{½} = **0.929**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **1.056** + **1.942** * **0.173**/**7**^{½} = **1.183**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.189**	Sen's estimator of trend.
7	var(S) = **44.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **44.333**^{½}) / 2 = [**1.924**, **19.076**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.379**, **0.758**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Beryllium (ug/L) at OW-225B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.155** / **7** = **0.165**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.191** - **1.334**/**7**) / (**7**-1))^{½} = **1.49x10^{-9}**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.165** - **1.942** * **1.49x10^{-9}**/**7**^{½} = **0.165**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.165** + **1.942** * **1.49x10^{-9}**/**7**^{½} = **0.165**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cadmium (ug/L) at OW-225B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **4.446** / **7** = **0.635**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**3.133** - **19.767**/**7**) / (**7**-1))^{½} = **0.227**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.635** - **1.942** * **0.227**/**7**^{½} = **0.468**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.635** + **1.942** * **0.227**/**7**^{½} = **0.802**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **-0.226**	Sen's estimator of trend.
7	var(S) = **44.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **44.333**^{½}) / 2 = [**1.924**, **19.076**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-1.608**, **0.189**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Chromium (ug/L) at OW-225B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **13.7** / **7** = **1.957**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**109.975** - **187.69**/**7**) / (**7**-1))^{½} = **3.723**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **1.957** - **1.942** * **3.723**/**7**^{½} = **0.0**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **1.957** + **1.942** * **3.723**/**7**^{½} = **4.69**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **16.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **16.0**^{½}) / 2 = [**5.348**, **15.652**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **3.69**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cis-1,2-dichloroethylene (ug/L) at OW-225B

Step	Equation	Description
1	$\bar{X}$ = **sum[X]** / **N** = **2.855** / **7** = **0.408**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**2.77** - **8.151**/**7**) / (**7**-1))^{½} = **0.517**	Compute sd of the last 7 measurements.
3	LCL = $\bar{\mathbf{X}}$ - **tS**/**N**^{½} = **0.408** - **1.942** * **0.517**/**7**^{½} = **0.028**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\bar{\mathbf{X}}$ + **tS**/**N**^{½} = **0.408** + **1.942** * **0.517**/**7**^{½} = **0.788**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **27.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **27.667**^{½}) / 2 = [**3.725**, **17.275**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-1.073**, **1.508**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cobalt (ug/L) at OW-225B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **207.6** / **7** = **29.657**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**6282.68** - **43097.76**/**7**) / (**7**-1))^{½} = **4.58**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **29.657** - **1.942** * **4.58**/**7**^{½} = **26.295**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **29.657** + **1.942** * **4.58**/**7**^{½} = **33.019**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **1.781**	Sen's estimator of trend.
7	var(S) = **44.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **44.333**^{½}) / 2 = [**1.924**, **19.076**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-26.721**, **20.601**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Copper (ug/L) at OW-225B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **27.16** / **7** = **3.88**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**153.797** - **737.666**/**7**) / (**7**-1))^{½} = **2.841**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **3.88** - **1.942** * **2.841**/**7**^{½} = **1.795**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **3.88** + **1.942** * **2.841**/**7**^{½} = **5.965**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **-3.654**	Sen's estimator of trend.
7	var(S) = **40.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **40.667**^{½}) / 2 = [**2.286**, **18.714**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-11.748**, **0.24**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Lead (ug/L) at OW-225B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **4.867** / **7** = **0.695**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**4.9** - **23.688**/**7**) / (**7**-1))^{½} = **0.503**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.695** - **1.942** * **0.503**/**7**^{½} = **0.326**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.695** + **1.942** * **0.503**/**7**^{½} = **1.064**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.737**	Sen's estimator of trend.
7	var(S) = **43.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **43.333**^{½}) / 2 = [**2.021**, **18.979**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.614**, **1.294**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Nickel (ug/L) at OW-225B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **827.0** / **7** = **118.143**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**99893.0** - **683929.0**/**7**) / (**7**-1))^{½} = **19.1**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **118.143** - **1.942** * **19.1**/**7**^{½} = **104.121**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **118.143** + **1.942** * **19.1**/**7**^{½} = **132.164**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **16.103**	Sen's estimator of trend.
7	var(S) = **43.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **43.333**^{½}) / 2 = [**2.021**, **18.979**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-69.63**, **95.552**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Selenium (ug/L) at OW-225B

Step	Equation	Description
1	$\bar{X}$ = **sum[X]** / **N** = **4.9** / **7** = **0.7**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**3.43** - **24.01**/**7**) / (**7**-1))^{½} = **0.0**	Compute sd of the last 7 measurements.
3	LCL = $\bar{\mathbf{X}}$ - **tS**/**N**^{½} = **0.7** - **1.942** * **0.0**/**7**^{½} = **0.7**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\bar{\mathbf{X}}$ + **tS**/**N**^{½} = **0.7** + **1.942** * **0.0**/**7**^{½} = **0.7**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Silver (ug/L) at OW-225B

Step	Equation	Description
1	$\bar{X}$ = **sum[X]** / **N** = **1.75** / **7** = **0.25**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.438** - **3.063**/**7**) / (**7**-1))^{½} = **0.0**	Compute sd of the last 7 measurements.
3	LCL = $\bar{\mathbf{X}}$ - **tS**/**N**^{½} = **0.25** - **1.942** * **0.0**/**7**^{½} = **0.25**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\bar{\mathbf{X}}$ + **tS**/**N**^{½} = **0.25** + **1.942** * **0.0**/**7**^{½} = **0.25**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Thallium (ug/L) at OW-225B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.91** / **7** = **0.13**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.118** - **0.828**/**7**) / (**7**-1))^{½} = **0.0**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.13** - **1.942** * **0.0**/**7**^{½} = **0.13**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.13** + **1.942** * **0.0**/**7**^{½} = **0.13**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Vanadium (ug/L) at OW-225B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **3.85** / **7** = **0.55**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**2.118** - **14.823**/**7**) / (**7**-1))^{½} = **9.58**x**10**$^{-9}$	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.55** - **1.942** * **9.58**x**10**$^{-9}$/**7**^{½} = **0.55**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.55** + **1.942** * **9.58**x**10**$^{-9}$/**7**^{½} = **0.55**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Vinyl chloride (ug/L) at OW-225B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.63** / **7** = **0.09**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.057** - **0.397**/**7**) / (**7**-1))^{½} = **9.75**x**10**$^{-10}$	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.09** - **1.942** * **9.75**x**10**$^{-10}$/**7**^{½} = **0.09**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.09** + **1.942** * **9.75**x**10**$^{-10}$/**7**^{½} = **0.09**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Zinc (ug/L) at OW-225B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **33.95** / **7** = **4.85**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**164.658** - **1152.603**/**7**) / (**7**-1))^{½} = **0.0**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **4.85** - **1.942** * **0.0**/**7**^{½} = **4.85**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **4.85** + **1.942** * **0.0**/**7**^{½} = **4.85**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
1,4-dichlorobenzene (ug/L) at OW-226B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.805** / **7** = **0.115**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.093** - **0.648**/**7**) / (**7**-1))^{½} = **0.0**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.115** - **1.942** * **0.0**/**7**^{½} = **0.115**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.115** + **1.942** * **0.0**/**7**^{½} = **0.115**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Antimony (ug/L) at OW-226B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **3.5** / **7** = **0.5**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1.75** - **12.25**/**7**) / (**7**-1))^{½} = **0.0**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.5** - **1.942** * **0.0**/**7**^{½} = **0.5**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.5** + **1.942** * **0.0**/**7**^{½} = **0.5**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Arsenic (ug/L) at OW-226B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **53.435** / **8** = **6.679**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**406.438** - **2855.299**/**8**) / (**8**-1))^{½} = **2.66**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **6.679** - **1.895** * **2.66**/**8**^{½} = **4.898**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **6.679** + **1.895** * **2.66**/**8**^{½} = **8.461**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **8** * (**8**-1) / 2 = **28**	Number of sample pairs during trend detection period.
6	S = **2.08**	Sen's estimator of trend.
7	var(S) = **65.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**28** ± **2.576** * **65.333**^{½}) / 2 = [**3.589**, **24.411**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-4.442**, **7.828**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Barium (ug/L) at OW-226B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **11350.0** / **7** = **1621.429**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1.86**x**10^7** - **1.29**x**10^8**/**7**) / (**7**-1))^{½} = **171.409**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **1621.429** - **1.942** * **171.409**/**7**^{½} = **1495.596**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **1621.429** + **1.942** * **171.409**/**7**^{½} = **1747.261**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **37.659**	Sen's estimator of trend.
7	var(S) = **44.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **44.333**^{½}) / 2 = [**1.924**, **19.076**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-672.946**, **767.841**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Benzene (ug/L) at OW-226B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **16.9** / **7** = **2.414**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**41.189** - **285.61**/**7**) / (**7**-1))^{½} = **0.254**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **2.414** - **1.942** * **0.254**/**7**^{½} = **2.228**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **2.414** + **1.942** * **0.254**/**7**^{½} = **2.601**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.051**	Sen's estimator of trend.
7	var(S) = **44.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **44.333**^{½}) / 2 = [**1.924**, **19.076**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-1.66**, **1.012**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Beryllium (ug/L) at OW-226B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.155** / **7** = **0.165**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.191** - **1.334**/**7**) / (**7**-1))^{½} = **1.49**x**10**$^{-9}$	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.165** - **1.942** * **1.49**x**10**$^{-9}$/**7**^{½} = **0.165**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.165** + **1.942** * **1.49**x**10**$^{-9}$/**7**^{½} = **0.165**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cadmium (ug/L) at OW-226B

Step	Equation	Description
1	$\bar{X}$ = **sum[X]** / **N** = **1.476** / **7** = **0.211**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.455** - **2.179**/**7**) / (**7**-1))^{½} = **0.155**	Compute sd of the last 7 measurements.
3	LCL = $\bar{\mathbf{X}}$ - **tS**/**N**^{½} = **0.211** - **1.942** * **0.155**/**7**^{½} = **0.097**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\bar{\mathbf{X}}$ + **tS**/**N**^{½} = **0.211** + **1.942** * **0.155**/**7**^{½} = **0.324**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **-0.013**	Sen's estimator of trend.
7	var(S) = **43.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **43.333**^{½}) / 2 = [**2.021**, **18.979**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.727**, **0.605**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Chromium (ug/L) at OW-226B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **48.97** / **7** = **6.996**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**462.422** - **2398.061**/**7**) / (**7**-1))^{½} = **4.469**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **6.996** - **1.942** * **4.469**/**7**^{½} = **3.715**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **6.996** + **1.942** * **4.469**/**7**^{½} = **10.277**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.398**	Sen's estimator of trend.
7	var(S) = **43.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **43.333**^{½}) / 2 = [**2.021**, **18.979**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-24.787**, **12.557**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cis-1,2-dichloroethylene (ug/L) at OW-226B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.735** / **7** = **0.105**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.077** - **0.54**/**7**) / (**7**-1))^{½} = **0.0**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.105** - **1.942** * **0.0**/**7**^{½} = **0.105**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.105** + **1.942** * **0.0**/**7**^{½} = **0.105**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cobalt (ug/L) at OW-226B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **177.3** / **7** = **25.329**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**4661.63** - **31435.29**/**7**) / (**7**-1))^{½} = **5.337**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **25.329** - **1.942** * **5.337**/**7**^{½} = **21.411**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **25.329** + **1.942** * **5.337**/**7**^{½} = **29.246**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **-7.3**	Sen's estimator of trend.
7	var(S) = **44.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **44.333**^{½}) / 2 = [**1.924**, **19.076**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-38.729**, **5.868**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Copper (ug/L) at OW-226B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **10.75** / **7** = **1.536**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**33.483** - **115.563**/**7**) / (**7**-1))^{½} = **1.682**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **1.536** - **1.942** * **1.682**/**7**^{½} = **0.301**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **1.536** + **1.942** * **1.682**/**7**^{½} = **2.77**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **16.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **16.0**^{½}) / 2 = [**5.348**, **15.652**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **1.699**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Lead (ug/L) at OW-226B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **11.228** / **7** = **1.604**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**21.561** - **126.068**/**7**) / (**7**-1))^{½} = **0.769**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **1.604** - **1.942** * **0.769**/**7**^{½} = **1.039**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **1.604** + **1.942** * **0.769**/**7**^{½} = **2.169**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **-0.082**	Sen's estimator of trend.
7	var(S) = **44.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **44.333**^{½}) / 2 = [**1.924**, **19.076**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-5.649**, **2.311**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Nickel (ug/L) at OW-226B

Step	Equation	Description
1	$\bar{X}$ = **sum[X]** / **N** = **561.3** / **7** = **80.186**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**45541.05** - **315057.69**/**7**) / (**7**-1))^{½} = **9.423**	Compute sd of the last 7 measurements.
3	LCL = $\bar{\mathbf{X}}$ - **tS**/**N**^{½} = **80.186** - **1.942** * **9.423**/**7**^{½} = **73.268**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\bar{\mathbf{X}}$ + **tS**/**N**^{½} = **80.186** + **1.942** * **9.423**/**7**^{½} = **87.104**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.927**	Sen's estimator of trend.
7	var(S) = **44.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **44.333**^{½}) / 2 = [**1.924**, **19.076**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-36.444**, **29.377**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Selenium (ug/L) at OW-226B

Step	Equation	Description
1	$\bar{X}$ = **sum[X]** / **N** = **4.9** / **7** = **0.7**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**3.43** - **24.01**/**7**) / (**7**-1))^{½} = **0.0**	Compute sd of the last 7 measurements.
3	LCL = $\bar{\mathbf{X}}$ - **tS**/**N**^{½} = **0.7** - **1.942** * **0.0**/**7**^{½} = **0.7**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\bar{\mathbf{X}}$ + **tS**/**N**^{½} = **0.7** + **1.942** * **0.0**/**7**^{½} = **0.7**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Silver (ug/L) at OW-226B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.75** / **7** = **0.25**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.438** - **3.063**/**7**) / (**7**-1))^{½} = **0.0**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.25** - **1.942** * **0.0**/**7**^{½} = **0.25**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.25** + **1.942** * **0.0**/**7**^{½} = **0.25**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Thallium (ug/L) at OW-226B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.995** / **7** = **0.285**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.569** - **3.98**/**7**) / (**7**-1))^{½} = **4.72**x**10**$^{-9}$	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.285** - **1.942** * **4.72**x**10**$^{-9}$/**7**^{½} = **0.285**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.285** + **1.942** * **4.72**x**10**$^{-9}$/**7**^{½} = **0.285**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Vanadium (ug/L) at OW-226B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **3.85** / **7** = **0.55**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**2.118** - **14.823**/**7**) / (**7**-1))^{½} = **9.58**x**10**$^{-9}$	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.55** - **1.942** * **9.58**x**10**$^{-9}$/**7**^{½} = **0.55**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.55** + **1.942** * **9.58**x**10**$^{-9}$/**7**^{½} = **0.55**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Vinyl chloride (ug/L) at OW-226B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.63** / **7** = **0.09**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.057** - **0.397**/**7**) / (**7**-1))^{½} = **9.75**x**10**$^{-10}$	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.09** - **1.942** * **9.75**x**10**$^{-10}$/**7**^{½} = **0.09**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.09** + **1.942** * **9.75**x**10**$^{-10}$/**7**^{½} = **0.09**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Zinc (ug/L) at OW-226B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **33.95** / **7** = **4.85**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**164.658** - **1152.603**/**7**) / (**7**-1))^{½} = **0.0**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **4.85** - **1.942** * **0.0**/**7**^{½} = **4.85**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **4.85** + **1.942** * **0.0**/**7**^{½} = **4.85**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
1,4-dichlorobenzene (ug/L) at OW-227B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.805** / **7** = **0.115**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.093** - **0.648**/**7**) / (**7**-1))^{½} = **0.0**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.115** - **1.942** * **0.0**/**7**^{½} = **0.115**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.115** + **1.942** * **0.0**/**7**^{½} = **0.115**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Antimony (ug/L) at OW-227B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **3.5** / **7** = **0.5**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1.75** - **12.25**/**7**) / (**7**-1))^{½} = **0.0**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.5** - **1.942** * **0.0**/**7**^{½} = **0.5**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.5** + **1.942** * **0.0**/**7**^{½} = **0.5**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Arsenic (ug/L) at OW-227B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **59.99** / **7** = **8.57**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**709.992** - **3598.8**/**7**) / (**7**-1))^{½} = **5.714**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **8.57** - **1.942** * **5.714**/**7**^{½} = **4.376**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **8.57** + **1.942** * **5.714**/**7**^{½} = **12.764**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **7.524**	Sen's estimator of trend.
7	var(S) = **44.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **44.333**^{½}) / 2 = [**1.924**, **19.076**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-13.181**, **16.562**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Barium (ug/L) at OW-227B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **11780.0** / **7** = **1682.857**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**2.02**x**10^7** - **1.39**x**10^8**/**7**) / (**7**-1))^{½} = **260.302**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **1682.857** - **1.942** * **260.302**/**7**^{½} = **1491.768**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **1682.857** + **1.942** * **260.302**/**7**^{½} = **1873.947**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **287.116**	Sen's estimator of trend.
7	var(S) = **44.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **44.333**^{½}) / 2 = [**1.924**, **19.076**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-647.353**, **779.635**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Benzene (ug/L) at OW-227B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **17.41** / **7** = **2.487**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**45.623** - **303.108**/**7**) / (**7**-1))^{½} = **0.622**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **2.487** - **1.942** * **0.622**/**7**^{½} = **2.031**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **2.487** + **1.942** * **0.622**/**7**^{½} = **2.944**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.624**	Sen's estimator of trend.
7	var(S) = **44.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **44.333**^{½}) / 2 = [**1.924**, **19.076**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.03**, **2.261**]	Two-sided confidence interval for slope.
10	LCL(S) > 0	**Significant increasing trend.**

Worksheet 6 - Assessment Monitoring
Beryllium (ug/L) at OW-227B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.155** / **7** = **0.165**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.191** - **1.334**/**7**) / (**7**-1))^{½} = **1.49**x**10**$^{-9}$	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.165** - **1.942** * **1.49**x**10**$^{-9}$/**7**^{½} = **0.165**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.165** + **1.942** * **1.49**x**10**$^{-9}$/**7**^{½} = **0.165**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cadmium (ug/L) at OW-227B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **3.072** / **7** = **0.439**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1.747** - **9.437**/**7**) / (**7**-1))^{½} = **0.258**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.439** - **1.942** * **0.258**/**7**^{½} = **0.249**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.439** + **1.942** * **0.258**/**7**^{½} = **0.628**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **-0.315**	Sen's estimator of trend.
7	var(S) = **44.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **44.333**^{½}) / 2 = [**1.924**, **19.076**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-1.119**, **0.633**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Chromium (ug/L) at OW-227B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **38.48** / **7** = **5.497**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**242.973** - **1480.71**/**7**) / (**7**-1))^{½} = **2.289**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **5.497** - **1.942** * **2.289**/**7**^{½} = **3.817**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **5.497** + **1.942** * **2.289**/**7**^{½} = **7.178**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.796**	Sen's estimator of trend.
7	var(S) = **44.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **44.333**^{½}) / 2 = [**1.924**, **19.076**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-18.43**, **4.074**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cis-1,2-dichloroethylene (ug/L) at OW-227B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.735** / **7** = **0.105**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.077** - **0.54**/**7**) / (**7**-1))^{½} = **0.0**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.105** - **1.942** * **0.0**/**7**^{½} = **0.105**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.105** + **1.942** * **0.0**/**7**^{½} = **0.105**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cobalt (ug/L) at OW-227B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **181.9** / **7** = **25.986**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**4940.63** - **33087.61**/**7**) / (**7**-1))^{½} = **5.97**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **25.986** - **1.942** * **5.97**/**7**^{½} = **21.603**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **25.986** + **1.942** * **5.97**/**7**^{½} = **30.368**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **-1.788**	Sen's estimator of trend.
7	var(S) = **44.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **44.333**^{½}) / 2 = [**1.924**, **19.076**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-20.58**, **26.142**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Copper (ug/L) at OW-227B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **22.3** / **7** = **3.186**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**177.05** - **497.29**/**7**) / (**7**-1))^{½} = **4.203**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **3.186** - **1.942** * **4.203**/**7**^{½} = **0.1**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **3.186** + **1.942** * **4.203**/**7**^{½} = **6.271**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **-3.41**	Sen's estimator of trend.
7	var(S) = **27.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **27.667**^{½}) / 2 = [**3.725**, **17.275**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-14.882**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Lead (ug/L) at OW-227B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.841** / **7** = **0.263**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.845** - **3.389**/**7**) / (**7**-1))^{½} = **0.245**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.263** - **1.942** * **0.245**/**7**^{½} = **0.083**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.263** + **1.942** * **0.245**/**7**^{½} = **0.443**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **27.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **27.667**^{½}) / 2 = [**3.725**, **17.275**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.484**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Nickel (ug/L) at OW-227B

Step	Equation	Description
1	$\bar{X}$ = **sum[X]** / **N** = **587.5** / **7** = **83.929**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**49781.99** - **345156.25**/**7**) / (**7**-1))^{½} = **8.888**	Compute sd of the last 7 measurements.
3	LCL = $\bar{\mathbf{X}}$ - **tS**/**N**^{½} = **83.929** - **1.942** * **8.888**/**7**^{½} = **77.404**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\bar{\mathbf{X}}$ + **tS**/**N**^{½} = **83.929** + **1.942** * **8.888**/**7**^{½} = **90.453**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **3.691**	Sen's estimator of trend.
7	var(S) = **44.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **44.333**^{½}) / 2 = [**1.924**, **19.076**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-54.505**, **36.976**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Selenium (ug/L) at OW-227B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **4.9** / **7** = **0.7**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**3.43** - **24.01**/**7**) / (**7**-1))^{½} = **0.0**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.7** - **1.942** * **0.0**/**7**^{½} = **0.7**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.7** + **1.942** * **0.0**/**7**^{½} = **0.7**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Silver (ug/L) at OW-227B

Step	Equation	Description
1	$\bar{X}$ = **sum[X]** / **N** = **1.75** / **7** = **0.25**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.438** - **3.063**/**7**) / (**7**-1))^{½} = **0.0**	Compute sd of the last 7 measurements.
3	LCL = $\bar{\mathbf{X}}$ - **tS**/**N**^{½} = **0.25** - **1.942** * **0.0**/**7**^{½} = **0.25**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\bar{\mathbf{X}}$ + **tS**/**N**^{½} = **0.25** + **1.942** * **0.0**/**7**^{½} = **0.25**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Thallium (ug/L) at OW-227B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.91** / **7** = **0.13**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.118** - **0.828**/**7**) / (**7**-1))^{½} = **0.0**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.13** - **1.942** * **0.0**/**7**^{½} = **0.13**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.13** + **1.942** * **0.0**/**7**^{½} = **0.13**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Vanadium (ug/L) at OW-227B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **3.85** / **7** = **0.55**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**2.118** - **14.823**/**7**) / (**7**-1))^{½} = **9.58**x**10**$^{-9}$	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.55** - **1.942** * **9.58**x**10**$^{-9}$/**7**^{½} = **0.55**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.55** + **1.942** * **9.58**x**10**$^{-9}$/**7**^{½} = **0.55**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Vinyl chloride (ug/L) at OW-227B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.63** / **7** = **0.09**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.057** - **0.397**/**7**) / (**7**-1))^{½} = **9.75**x**10**$^{-10}$	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.09** - **1.942** * **9.75**x**10**$^{-10}$/**7**^{½} = **0.09**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.09** + **1.942** * **9.75**x**10**$^{-10}$/**7**^{½} = **0.09**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Zinc (ug/L) at OW-227B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **33.95** / **7** = **4.85**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**164.658** - **1152.603**/**7**) / (**7**-1))^{½} = **0.0**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **4.85** - **1.942** * **0.0**/**7**^{½} = **4.85**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **4.85** + **1.942** * **0.0**/**7**^{½} = **4.85**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
1,4-dichlorobenzene (ug/L) at OW-401B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **7.377** / **16** = **0.461**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**6.719** - **54.42**/**16**) / (**16**-1))^{½} = **0.47**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.461** - **1.753** * **0.47**/**16**^{½} = **0.255**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.461** + **1.753** * **0.47**/**16**^{½} = **0.667**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **1100.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **1100.0**^{½}) / 2 = [**83.782**, **169.218**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Antimony (ug/L) at OW-401B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **4.064** / **16** = **0.254**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1.032** - **16.516**/**16**) / (**16**-1))^{½} = **0.004**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.254** - **1.753** * **0.004**/**16**^{½} = **0.252**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.254** + **1.753** * **0.004**/**16**^{½} = **0.256**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **176.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **176.0**^{½}) / 2 = [**109.413**, **143.587**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Arsenic (ug/L) at OW-401B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **155.34** / **16** = **9.709**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1699.277** - **24130.516**/**16**) / (**16**-1))^{½} = **3.569**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **9.709** - **1.753** * **3.569**/**16**^{½} = **8.145**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **9.709** + **1.753** * **3.569**/**16**^{½} = **11.273**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **24** * (**24**-1) / 2 = **276**	Number of sample pairs during trend detection period.
6	S = **-0.235**	Sen's estimator of trend.
7	var(S) = **1625.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**276** ± **2.576** * **1625.333**^{½}) / 2 = [**86.074**, **189.926**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.797**, **0.55**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Barium (ug/L) at OW-401B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **19208.0** / **16** = **1200.5**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**2.61**x**10^7** - **3.69**x**10^8**/**16**) / (**16**-1))^{½} = **452.361**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **1200.5** - **1.753** * **452.361**/**16**^{½} = **1002.281**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **1200.5** + **1.753** * **452.361**/**16**^{½} = **1398.719**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **141.44**	Sen's estimator of trend.
7	var(S) = **1433.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **1433.667**^{½}) / 2 = [**77.731**, **175.269**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**92.428**, **190.856**]	Two-sided confidence interval for slope.
10	LCL(S) > 0	**Significant increasing trend.**

Worksheet 6 - Assessment Monitoring
Benzene (ug/L) at OW-401B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **65.0** / **16** = **4.063**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**289.353** - **4225.0**/**16**) / (**16**-1))^{½} = **1.298**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **4.063** - **1.753** * **1.298**/**16**^{½} = **3.494**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **4.063** + **1.753** * **1.298**/**16**^{½} = **4.631**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **-0.105**	Sen's estimator of trend.
7	var(S) = **1432.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **1432.667**^{½}) / 2 = [**77.748**, **175.252**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.224**, **0.036**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Beryllium (ug/L) at OW-401B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.16** / **16** = **0.135**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.292** - **4.666**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.135** - **1.753** * **0.0**/**16**^{½} = **0.135**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.135** + **1.753** * **0.0**/**16**^{½} = **0.135**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **0.0**^{½}) / 2 = [**126.5**, **126.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Beta-bhc (ug/L) at OW-401B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.695** / **16** = **0.043**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.043** - **0.483**/**16**) / (**16**-1))^{½} = **0.029**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.043** - **1.753** * **0.029**/**16**^{½} = **0.031**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.043** + **1.753** * **0.029**/**16**^{½} = **0.056**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **20** * (**20**-1) / 2 = **190**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **905.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**190** ± **2.576** * **905.667**^{½}) / 2 = [**56.239**, **133.761**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.004**, **0.008**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cadmium (ug/L) at OW-401B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.44** / **16** = **0.028**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.012** - **0.194**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.028** - **1.753** * **0.0**/**16**^{½} = **0.028**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.028** + **1.753** * **0.0**/**16**^{½} = **0.028**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **0.0**^{½}) / 2 = [**126.5**, **126.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Chromium (ug/L) at OW-401B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **12.73** / **16** = **0.796**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**13.221** - **162.053**/**16**) / (**16**-1))^{½} = **0.454**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.796** - **1.753** * **0.454**/**16**^{½} = **0.597**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.796** + **1.753** * **0.454**/**16**^{½} = **0.995**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **-0.138**	Sen's estimator of trend.
7	var(S) = **1220.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **1220.0**^{½}) / 2 = [**81.512**, **171.488**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.19**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cis-1,2-dichloroethylene (ug/L) at OW-401B

Step	Equation	Description
1	$\bar{X}$ = **sum[X]** / **N** = **2.412** / **16** = **0.151**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.513** - **5.818**/**16**) / (**16**-1))^{½} = **0.1**	Compute sd of the last 16 measurements.
3	LCL = $\bar{\mathbf{X}}$ - **tS**/**N**^{½} = **0.151** - **1.753** * **0.1**/**16**^{½} = **0.107**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\bar{\mathbf{X}}$ + **tS**/**N**^{½} = **0.151** + **1.753** * **0.1**/**16**^{½} = **0.194**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **-0.026**	Sen's estimator of trend.
7	var(S) = **1100.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **1100.0**^{½}) / 2 = [**83.782**, **169.218**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.048**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cobalt (ug/L) at OW-401B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **161.87** / **16** = **10.117**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**2341.812** - **26201.897**/**16**) / (**16**-1))^{½} = **6.852**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **10.117** - **1.753** * **6.852**/**16**^{½} = **7.115**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **10.117** + **1.753** * **6.852**/**16**^{½} = **13.119**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **-3.691**	Sen's estimator of trend.
7	var(S) = **1432.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **1432.667**^{½}) / 2 = [**77.748**, **175.252**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-4.779**, **-3.008**]	Two-sided confidence interval for slope.
10	UCL(S) < 0	**Significant decreasing trend.**

Worksheet 6 - Assessment Monitoring
Copper (ug/L) at OW-401B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **14.4** / **16** = **0.9**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**12.96** - **207.36**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.9** - **1.753** * **0.0**/**16**^{½} = **0.9**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.9** + **1.753** * **0.0**/**16**^{½} = **0.9**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **483.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **483.667**^{½}) / 2 = [**98.174**, **154.826**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Lead (ug/L) at OW-401B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **6.687** / **16** = **0.418**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**4.598** - **44.716**/**16**) / (**16**-1))^{½} = **0.347**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.418** - **1.753** * **0.347**/**16**^{½} = **0.266**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.418** + **1.753** * **0.347**/**16**^{½} = **0.57**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **-0.003**	Sen's estimator of trend.
7	var(S) = **1389.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **1389.333**^{½}) / 2 = [**78.491**, **174.509**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.041**, **0.062**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Mercury (ug/L) at OW-401B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.534** / **9** = **0.059**	Compute the mean of the last 9 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.033** - **0.285**/**9**) / (**9**-1))^{½} = **0.013**	Compute sd of the last 9 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.059** - **1.86** * **0.013**/**9**^{½} = **0.051**	Compute lower confidence limit for the mean of the last 9 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.059** + **1.86** * **0.013**/**9**^{½} = **0.067**	Compute upper confidence limit for the mean of the last 9 measurements.
5	N' = **N** * (**N**-1) / 2 = **9** * (**9**-1) / 2 = **36**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **26.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**36** ± **2.576** * **26.667**^{½}) / 2 = [**11.349**, **24.651**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Nickel (ug/L) at OW-401B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **773.5** / **16** = **48.344**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**38377.05** - **598302.25**/**16**) / (**16**-1))^{½} = **8.096**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **48.344** - **1.753** * **8.096**/**16**^{½} = **44.796**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **48.344** + **1.753** * **8.096**/**16**^{½} = **51.891**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **-1.365**	Sen's estimator of trend.
7	var(S) = **1432.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **1432.667**^{½}) / 2 = [**77.748**, **175.252**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-2.698**, **0.189**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Selenium (ug/L) at OW-401B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **7.68** / **16** = **0.48**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**3.686** - **58.982**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.48** - **1.753** * **0.0**/**16**^{½} = **0.48**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.48** + **1.753** * **0.0**/**16**^{½} = **0.48**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **176.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **176.0**^{½}) / 2 = [**109.413**, **143.587**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Silver (ug/L) at OW-401B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.936** / **16** = **0.184**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.539** - **8.62**/**16**) / (**16**-1))^{½} = **0.006**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.184** - **1.753** * **0.006**/**16**^{½} = **0.181**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.184** + **1.753** * **0.006**/**16**^{½} = **0.186**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **337.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **337.0**^{½}) / 2 = [**102.855**, **150.145**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Thallium (ug/L) at OW-401B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.08** / **16** = **0.13**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.27** - **4.326**/**16**) / (**16**-1))^{½} = **4.01**x**10**$^{-9}$	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.13** - **1.753** * **4.01**x**10**$^{-9}$/**16**^{½} = **0.13**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.13** + **1.753** * **4.01**x**10**$^{-9}$/**16**^{½} = **0.13**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **0.0**^{½}) / 2 = [**126.5**, **126.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Vanadium (ug/L) at OW-401B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **13.83** / **16** = **0.864**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**16.768** - **191.269**/**16**) / (**16**-1))^{½} = **0.566**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.864** - **1.753** * **0.566**/**16**^{½} = **0.616**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.864** + **1.753** * **0.566**/**16**^{½} = **1.113**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **-0.065**	Sen's estimator of trend.
7	var(S) = **1220.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **1220.0**^{½}) / 2 = [**81.512**, **171.488**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.142**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Vinyl chloride (ug/L) at OW-401B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.44** / **16** = **0.09**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.13** - **2.074**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.09** - **1.753** * **0.0**/**16**^{½} = **0.09**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.09** + **1.753** * **0.0**/**16**^{½} = **0.09**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **0.0**^{½}) / 2 = [**126.5**, **126.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Zinc (ug/L) at OW-401B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **80.0** / **16** = **5.0**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**400.0** - **6400.0**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **5.0** - **1.753** * **0.0**/**16**^{½} = **5.0**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **5.0** + **1.753** * **0.0**/**16**^{½} = **5.0**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **337.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **337.0**^{½}) / 2 = [**102.855**, **150.145**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
1,4-dichlorobenzene (ug/L) at OW-402B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.213** / **16** = **0.138**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.375** - **4.897**/**16**) / (**16**-1))^{½} = **0.068**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.138** - **1.753** * **0.068**/**16**^{½} = **0.109**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.138** + **1.753** * **0.068**/**16**^{½} = **0.168**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **337.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **337.0**^{½}) / 2 = [**102.855**, **150.145**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Antimony (ug/L) at OW-402B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **4.08** / **16** = **0.255**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1.04** - **16.646**/**16**) / (**16**-1))^{½} = **5.22**x**10**$^{-9}$	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.255** - **1.753** * **5.22**x**10**$^{-9}$/**16**^{½} = **0.255**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.255** + **1.753** * **5.22**x**10**$^{-9}$/**16**^{½} = **0.255**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **0.0**^{½}) / 2 = [**126.5**, **126.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Arsenic (ug/L) at OW-402B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **6.892** / **16** = **0.431**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**3.189** - **47.5**/**16**) / (**16**-1))^{½} = **0.121**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.431** - **1.753** * **0.121**/**16**^{½} = **0.378**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.431** + **1.753** * **0.121**/**16**^{½} = **0.484**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **616.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **616.667**^{½}) / 2 = [**94.515**, **158.485**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Barium (ug/L) at OW-402B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **11605.0** / **16** = **725.313**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**9.16**x**10^6** - **1.35**x**10^8**/**16**) / (**16**-1))^{½} = **221.997**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **725.313** - **1.753** * **221.997**/**16**^{½} = **628.036**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **725.313** + **1.753** * **221.997**/**16**^{½} = **822.589**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **70.617**	Sen's estimator of trend.
7	var(S) = **1433.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **1433.667**^{½}) / 2 = [**77.731**, **175.269**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**38.228**, **96.116**]	Two-sided confidence interval for slope.
10	LCL(S) > 0	**Significant increasing trend.**

Worksheet 6 - Assessment Monitoring
Benzene (ug/L) at OW-402B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **15.909** / **16** = **0.994**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**18.71** - **253.096**/**16**) / (**16**-1))^{½} = **0.439**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.994** - **1.753** * **0.439**/**16**^{½} = **0.802**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.994** + **1.753** * **0.439**/**16**^{½} = **1.187**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **-0.074**	Sen's estimator of trend.
7	var(S) = **1432.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **1432.667**^{½}) / 2 = [**77.748**, **175.252**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.166**, **0.037**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Beryllium (ug/L) at OW-402B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.16** / **16** = **0.135**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.292** - **4.666**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.135** - **1.753** * **0.0**/**16**^{½} = **0.135**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.135** + **1.753** * **0.0**/**16**^{½} = **0.135**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **0.0**^{½}) / 2 = [**126.5**, **126.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Beta-bhc (ug/L) at OW-402B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.374** / **16** = **0.023**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.02** - **0.14**/**16**) / (**16**-1))^{½} = **0.028**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.023** - **1.753** * **0.028**/**16**^{½} = **0.011**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.023** + **1.753** * **0.028**/**16**^{½} = **0.036**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **19** * (**19**-1) / 2 = **171**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **652.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**171** ± **2.576** * **652.0**^{½}) / 2 = [**52.612**, **118.388**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.006**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cadmium (ug/L) at OW-402B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **12.525** / **16** = **0.783**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**11.414** - **156.876**/**16**) / (**16**-1))^{½} = **0.328**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.783** - **1.753** * **0.328**/**16**^{½} = **0.639**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.783** + **1.753** * **0.328**/**16**^{½} = **0.926**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **-0.037**	Sen's estimator of trend.
7	var(S) = **1431.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **1431.667**^{½}) / 2 = [**77.765**, **175.235**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.094**, **0.03**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Chromium (ug/L) at OW-402B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **137.041** / **16** = **8.565**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**3269.589** - **18780.236**/**16**) / (**16**-1))^{½} = **11.82**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **8.565** - **1.753** * **11.82**/**16**^{½} = **3.386**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **8.565** + **1.753** * **11.82**/**16**^{½} = **13.745**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **1417.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **1417.0**^{½}) / 2 = [**78.016**, **174.984**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.697**, **1.052**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cis-1,2-dichloroethylene (ug/L) at OW-402B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **257.205** / **16** = **16.075**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**5142.201** - **66154.412**/**16**) / (**16**-1))^{½} = **8.196**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **16.075** - **1.753** * **8.196**/**16**^{½} = **12.484**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **16.075** + **1.753** * **8.196**/**16**^{½} = **19.667**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **-1.338**	Sen's estimator of trend.
7	var(S) = **1432.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **1432.667**^{½}) / 2 = [**77.748**, **175.252**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-3.572**, **0.443**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cobalt (ug/L) at OW-402B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **142.41** / **16** = **8.901**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1744.711** - **20280.608**/**16**) / (**16**-1))^{½} = **5.64**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **8.901** - **1.753** * **5.64**/**16**^{½} = **6.429**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **8.901** + **1.753** * **5.64**/**16**^{½} = **11.372**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.164**	Sen's estimator of trend.
7	var(S) = **1433.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **1433.667**^{½}) / 2 = [**77.731**, **175.269**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.534**, **0.875**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Copper (ug/L) at OW-402B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **33.35** / **16** = **2.084**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**144.156** - **1112.223**/**16**) / (**16**-1))^{½} = **2.231**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **2.084** - **1.753** * **2.231**/**16**^{½} = **1.107**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **2.084** + **1.753** * **2.231**/**16**^{½} = **3.062**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **1165.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **1165.0**^{½}) / 2 = [**82.538**, **170.462**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.206**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Lead (ug/L) at OW-402B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.92** / **16** = **0.12**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.23** - **3.686**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.12** - **1.753** * **0.0**/**16**^{½} = **0.12**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.12** + **1.753** * **0.0**/**16**^{½} = **0.12**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **176.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **176.0**^{½}) / 2 = [**109.413**, **143.587**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Mercury (ug/L) at OW-402B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.593** / **9** = **0.066**	Compute the mean of the last 9 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.048** - **0.352**/**9**) / (**9**-1))^{½} = **0.033**	Compute sd of the last 9 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.066** - **1.86** * **0.033**/**9**^{½} = **0.046**	Compute lower confidence limit for the mean of the last 9 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.066** + **1.86** * **0.033**/**9**^{½} = **0.086**	Compute upper confidence limit for the mean of the last 9 measurements.
5	N' = **N** * (**N**-1) / 2 = **9** * (**9**-1) / 2 = **36**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **26.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**36** ± **2.576** * **26.667**^{½}) / 2 = [**11.349**, **24.651**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Nickel (ug/L) at OW-402B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **7281.8** / **16** = **455.113**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**5.14**x**10^6** - **5.30**x**10^7**/**16**) / (**16**-1))^{½} = **348.953**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **455.113** - **1.753** * **348.953**/**16**^{½} = **302.206**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **455.113** + **1.753** * **348.953**/**16**^{½} = **608.019**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **28.952**	Sen's estimator of trend.
7	var(S) = **1433.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **1433.667**^{½}) / 2 = [**77.731**, **175.269**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-17.509**, **76.715**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Selenium (ug/L) at OW-402B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **7.68** / **16** = **0.48**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**3.686** - **58.982**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.48** - **1.753** * **0.0**/**16**^{½} = **0.48**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.48** + **1.753** * **0.0**/**16**^{½} = **0.48**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **176.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **176.0**^{½}) / 2 = [**109.413**, **143.587**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Silver (ug/L) at OW-402B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.96** / **16** = **0.185**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.548** - **8.762**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.185** - **1.753** * **0.0**/**16**^{½} = **0.185**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.185** + **1.753** * **0.0**/**16**^{½} = **0.185**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **337.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **337.0**^{½}) / 2 = [**102.855**, **150.145**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Thallium (ug/L) at OW-402B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.08** / **16** = **0.13**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.27** - **4.326**/**16**) / (**16**-1))^{½} = **4.01**x**10**$^{-9}$	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.13** - **1.753** * **4.01**x**10**$^{-9}$/**16**^{½} = **0.13**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.13** + **1.753** * **4.01**x**10**$^{-9}$/**16**^{½} = **0.13**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **735.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **735.667**^{½}) / 2 = [**91.565**, **161.435**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Vanadium (ug/L) at OW-402B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **6.72** / **16** = **0.42**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**2.822** - **45.158**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.42** - **1.753** * **0.0**/**16**^{½} = **0.42**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.42** + **1.753** * **0.0**/**16**^{½} = **0.42**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **483.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **483.667**^{½}) / 2 = [**98.174**, **154.826**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Vinyl chloride (ug/L) at OW-402B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **42.55** / **16** = **2.659**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**152.962** - **1810.503**/**16**) / (**16**-1))^{½} = **1.629**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **2.659** - **1.753** * **1.629**/**16**^{½} = **1.946**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **2.659** + **1.753** * **1.629**/**16**^{½} = **3.373**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **-0.391**	Sen's estimator of trend.
7	var(S) = **1431.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **1431.667**^{½}) / 2 = [**77.765**, **175.235**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.963**, **-0.045**]	Two-sided confidence interval for slope.
10	UCL(S) < 0	**Significant decreasing trend.**

Worksheet 6 - Assessment Monitoring
Zinc (ug/L) at OW-402B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **80.0** / **16** = **5.0**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**400.0** - **6400.0**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **5.0** - **1.753** * **0.0**/**16**^{½} = **5.0**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **5.0** + **1.753** * **0.0**/**16**^{½} = **5.0**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **0.0**^{½}) / 2 = [**126.5**, **126.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
1,4-dichlorobenzene (ug/L) at OW-410B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **3.026** / **15** = **0.202**	Compute the mean of the last 15 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1.165** - **9.157**/**15**) / (**15**-1))^{½} = **0.199**	Compute sd of the last 15 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.202** - **1.761** * **0.199**/**15**^{½} = **0.111**	Compute lower confidence limit for the mean of the last 15 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.202** + **1.761** * **0.199**/**15**^{½} = **0.292**	Compute upper confidence limit for the mean of the last 15 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **195.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **195.667**^{½}) / 2 = [**34.483**, **70.517**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.022**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Antimony (ug/L) at OW-410B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **4.123** / **15** = **0.275**	Compute the mean of the last 15 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1.144** - **16.999**/**15**) / (**15**-1))^{½} = **0.028**	Compute sd of the last 15 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.275** - **1.761** * **0.028**/**15**^{½} = **0.262**	Compute lower confidence limit for the mean of the last 15 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.275** + **1.761** * **0.028**/**15**^{½} = **0.288**	Compute upper confidence limit for the mean of the last 15 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **139.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **139.667**^{½}) / 2 = [**37.278**, **67.722**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Arsenic (ug/L) at OW-410B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **60.857** / **15** = **4.057**	Compute the mean of the last 15 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**401.784** - **3703.574**/**15**) / (**15**-1))^{½} = **3.326**	Compute sd of the last 15 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **4.057** - **1.761** * **3.326**/**15**^{½} = **2.545**	Compute lower confidence limit for the mean of the last 15 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **4.057** + **1.761** * **3.326**/**15**^{½} = **5.569**	Compute upper confidence limit for the mean of the last 15 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **1.16**	Sen's estimator of trend.
7	var(S) = **408.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **408.333**^{½}) / 2 = [**26.473**, **78.527**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.264**, **1.825**]	Two-sided confidence interval for slope.
10	LCL(S) > 0	**Significant increasing trend.**

Worksheet 6 - Assessment Monitoring
Barium (ug/L) at OW-410B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **25238.9** / **15** = **1682.593**	Compute the mean of the last 15 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**5.36**x**10^7** - **6.37**x**10^8**/**15**) / (**15**-1))^{½} = **893.111**	Compute sd of the last 15 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **1682.593** - **1.761** * **893.111**/**15**^{½} = **1276.52**	Compute lower confidence limit for the mean of the last 15 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **1682.593** + **1.761** * **893.111**/**15**^{½} = **2088.667**	Compute upper confidence limit for the mean of the last 15 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **361.777**	Sen's estimator of trend.
7	var(S) = **408.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **408.333**^{½}) / 2 = [**26.473**, **78.527**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**244.608**, **519.43**]	Two-sided confidence interval for slope.
10	LCL(S) > 0	**Significant increasing trend.**

Worksheet 6 - Assessment Monitoring
Benzene (ug/L) at OW-410B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **23.356** / **15** = **1.557**	Compute the mean of the last 15 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**55.049** - **545.503**/**15**) / (**15**-1))^{½} = **1.155**	Compute sd of the last 15 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **1.557** - **1.761** * **1.155**/**15**^{½} = **1.032**	Compute lower confidence limit for the mean of the last 15 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **1.557** + **1.761** * **1.155**/**15**^{½} = **2.082**	Compute upper confidence limit for the mean of the last 15 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **0.14**	Sen's estimator of trend.
7	var(S) = **407.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **407.333**^{½}) / 2 = [**26.505**, **78.495**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.366**, **0.488**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Beryllium (ug/L) at OW-410B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.025** / **15** = **0.135**	Compute the mean of the last 15 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.273** - **4.101**/**15**) / (**15**-1))^{½} = **0.0**	Compute sd of the last 15 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.135** - **1.761** * **0.0**/**15**^{½} = **0.135**	Compute lower confidence limit for the mean of the last 15 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.135** + **1.761** * **0.0**/**15**^{½} = **0.135**	Compute upper confidence limit for the mean of the last 15 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **0.0**^{½}) / 2 = [**52.5**, **52.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cadmium (ug/L) at OW-410B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.678** / **15** = **0.179**	Compute the mean of the last 15 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1.612** - **7.172**/**15**) / (**15**-1))^{½} = **0.285**	Compute sd of the last 15 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.179** - **1.761** * **0.285**/**15**^{½} = **0.049**	Compute lower confidence limit for the mean of the last 15 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.179** + **1.761** * **0.285**/**15**^{½} = **0.308**	Compute upper confidence limit for the mean of the last 15 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **283.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **283.333**^{½}) / 2 = [**30.82**, **74.18**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.103**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Chromium (ug/L) at OW-410B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **28.38** / **15** = **1.892**	Compute the mean of the last 15 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**140.669** - **805.424**/**15**) / (**15**-1))^{½} = **2.492**	Compute sd of the last 15 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **1.892** - **1.761** * **2.492**/**15**^{½} = **0.759**	Compute lower confidence limit for the mean of the last 15 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **1.892** + **1.761** * **2.492**/**15**^{½} = **3.025**	Compute upper confidence limit for the mean of the last 15 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **-0.373**	Sen's estimator of trend.
7	var(S) = **343.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **343.0**^{½}) / 2 = [**28.646**, **76.354**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.992**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cis-1,2-dichloroethylene (ug/L) at OW-410B

Step	Equation	Description
1	$\bar{X}$ = **sum[X]** / **N** = **1.707** / **15** = **0.114**	Compute the mean of the last 15 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.204** - **2.914**/**15**) / (**15**-1))^{½} = **0.026**	Compute sd of the last 15 measurements.
3	LCL = $\bar{\mathbf{X}}$ - **tS**/**N**^{½} = **0.114** - **1.761** * **0.026**/**15**^{½} = **0.102**	Compute lower confidence limit for the mean of the last 15 measurements.
4	UCL = $\bar{\mathbf{X}}$ + **tS**/**N**^{½} = **0.114** + **1.761** * **0.026**/**15**^{½} = **0.126**	Compute upper confidence limit for the mean of the last 15 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **139.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **139.667**^{½}) / 2 = [**37.278**, **67.722**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cobalt (ug/L) at OW-410B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **98.989** / **15** = **6.599**	Compute the mean of the last 15 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1037.749** - **9798.822**/**15**) / (**15**-1))^{½} = **5.241**	Compute sd of the last 15 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **6.599** - **1.761** * **5.241**/**15**^{½} = **4.217**	Compute lower confidence limit for the mean of the last 15 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **6.599** + **1.761** * **5.241**/**15**^{½} = **8.982**	Compute upper confidence limit for the mean of the last 15 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **1.574**	Sen's estimator of trend.
7	var(S) = **408.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **408.333**^{½}) / 2 = [**26.473**, **78.527**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.469**, **2.502**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Copper (ug/L) at OW-410B

Step	Equation	Description
1	$\bar{X}$ = **sum[X]** / **N** = **23.99** / **15** = **1.599**	Compute the mean of the last 15 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**63.117** - **575.52**/**15**) / (**15**-1))^{½} = **1.33**	Compute sd of the last 15 measurements.
3	LCL = $\bar{\mathbf{X}}$ - **tS**/**N**^{½} = **1.599** - **1.761** * **1.33**/**15**^{½} = **0.995**	Compute lower confidence limit for the mean of the last 15 measurements.
4	UCL = $\bar{\mathbf{X}}$ + **tS**/**N**^{½} = **1.599** + **1.761** * **1.33**/**15**^{½} = **2.204**	Compute upper confidence limit for the mean of the last 15 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **243.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **243.333**^{½}) / 2 = [**32.408**, **72.592**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.63**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Lead (ug/L) at OW-410B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.083** / **15** = **0.139**	Compute the mean of the last 15 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.33** - **4.339**/**15**) / (**15**-1))^{½} = **0.054**	Compute sd of the last 15 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.139** - **1.761** * **0.054**/**15**^{½} = **0.114**	Compute lower confidence limit for the mean of the last 15 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.139** + **1.761** * **0.054**/**15**^{½} = **0.163**	Compute upper confidence limit for the mean of the last 15 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **74.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **74.667**^{½}) / 2 = [**41.37**, **63.63**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Nickel (ug/L) at OW-410B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **643.95** / **15** = **42.93**	Compute the mean of the last 15 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**55807.043** - **414671.603**/**15**) / (**15**-1))^{½} = **44.851**	Compute sd of the last 15 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **42.93** - **1.761** * **44.851**/**15**^{½} = **22.538**	Compute lower confidence limit for the mean of the last 15 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **42.93** + **1.761** * **44.851**/**15**^{½} = **63.322**	Compute upper confidence limit for the mean of the last 15 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **3.883**	Sen's estimator of trend.
7	var(S) = **408.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **408.333**^{½}) / 2 = [**26.473**, **78.527**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-6.921**, **8.165**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Selenium (ug/L) at OW-410B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **7.69** / **15** = **0.513**	Compute the mean of the last 15 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**4.167** - **59.136**/**15**) / (**15**-1))^{½} = **0.127**	Compute sd of the last 15 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.513** - **1.761** * **0.127**/**15**^{½} = **0.455**	Compute lower confidence limit for the mean of the last 15 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.513** + **1.761** * **0.127**/**15**^{½} = **0.57**	Compute upper confidence limit for the mean of the last 15 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **74.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **74.667**^{½}) / 2 = [**41.37**, **63.63**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Silver (ug/L) at OW-410B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.76** / **15** = **0.184**	Compute the mean of the last 15 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.508** - **7.618**/**15**) / (**15**-1))^{½} = **0.004**	Compute sd of the last 15 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.184** - **1.761** * **0.004**/**15**^{½} = **0.182**	Compute lower confidence limit for the mean of the last 15 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.184** + **1.761** * **0.004**/**15**^{½} = **0.186**	Compute upper confidence limit for the mean of the last 15 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **74.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **74.667**^{½}) / 2 = [**41.37**, **63.63**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Thallium (ug/L) at OW-410B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.914** / **15** = **0.128**	Compute the mean of the last 15 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.245** - **3.663**/**15**) / (**15**-1))^{½} = **0.009**	Compute sd of the last 15 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.128** - **1.761** * **0.009**/**15**^{½} = **0.123**	Compute lower confidence limit for the mean of the last 15 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.128** + **1.761** * **0.009**/**15**^{½} = **0.132**	Compute upper confidence limit for the mean of the last 15 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **74.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **74.667**^{½}) / 2 = [**41.37**, **63.63**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Vanadium (ug/L) at OW-410B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **17.55** / **15** = **1.17**	Compute the mean of the last 15 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**31.097** - **308.003**/**15**) / (**15**-1))^{½} = **0.869**	Compute sd of the last 15 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **1.17** - **1.761** * **0.869**/**15**^{½} = **0.775**	Compute lower confidence limit for the mean of the last 15 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **1.17** + **1.761** * **0.869**/**15**^{½} = **1.565**	Compute upper confidence limit for the mean of the last 15 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **-0.22**	Sen's estimator of trend.
7	var(S) = **316.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **316.333**^{½}) / 2 = [**29.592**, **75.408**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.512**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Vinyl chloride (ug/L) at OW-410B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.35** / **15** = **0.09**	Compute the mean of the last 15 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.122** - **1.823**/**15**) / (**15**-1))^{½} = **0.0**	Compute sd of the last 15 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.09** - **1.761** * **0.0**/**15**^{½} = **0.09**	Compute lower confidence limit for the mean of the last 15 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.09** + **1.761** * **0.0**/**15**^{½} = **0.09**	Compute upper confidence limit for the mean of the last 15 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **0.0**^{½}) / 2 = [**52.5**, **52.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Zinc (ug/L) at OW-410B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **77.98** / **15** = **5.199**	Compute the mean of the last 15 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**413.68** - **6080.88**/**15**) / (**15**-1))^{½} = **0.769**	Compute sd of the last 15 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **5.199** - **1.761** * **0.769**/**15**^{½} = **4.849**	Compute lower confidence limit for the mean of the last 15 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **5.199** + **1.761** * **0.769**/**15**^{½} = **5.549**	Compute upper confidence limit for the mean of the last 15 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **74.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **74.667**^{½}) / 2 = [**41.37**, **63.63**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
1,4-dichlorobenzene (ug/L) at OW-411B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.725** / **15** = **0.115**	Compute the mean of the last 15 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.198** - **2.976**/**15**) / (**15**-1))^{½} = **2.05**x**10**$^{-9}$	Compute sd of the last 15 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.115** - **1.761** * **2.05**x**10**$^{-9}$/**15**^{½} = **0.115**	Compute lower confidence limit for the mean of the last 15 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.115** + **1.761** * **2.05**x**10**$^{-9}$/**15**^{½} = **0.115**	Compute upper confidence limit for the mean of the last 15 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **0.0**^{½}) / 2 = [**52.5**, **52.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Antimony (ug/L) at OW-411B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **3.825** / **15** = **0.255**	Compute the mean of the last 15 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.975** - **14.631**/**15**) / (**15**-1))^{½} = **6.44**x**10**$^{-9}$	Compute sd of the last 15 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.255** - **1.761** * **6.44**x**10**$^{-9}$/**15**^{½} = **0.255**	Compute lower confidence limit for the mean of the last 15 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.255** + **1.761** * **6.44**x**10**$^{-9}$/**15**^{½} = **0.255**	Compute upper confidence limit for the mean of the last 15 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **0.0**^{½}) / 2 = [**52.5**, **52.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Arsenic (ug/L) at OW-411B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **44.236** / **15** = **2.949**	Compute the mean of the last 15 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**162.12** - **1956.824**/**15**) / (**15**-1))^{½} = **1.504**	Compute sd of the last 15 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **2.949** - **1.761** * **1.504**/**15**^{½} = **2.265**	Compute lower confidence limit for the mean of the last 15 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **2.949** + **1.761** * **1.504**/**15**^{½} = **3.633**	Compute upper confidence limit for the mean of the last 15 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **0.634**	Sen's estimator of trend.
7	var(S) = **408.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **408.333**^{½}) / 2 = [**26.473**, **78.527**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.221**, **0.977**]	Two-sided confidence interval for slope.
10	LCL(S) > 0	**Significant increasing trend.**

Worksheet 6 - Assessment Monitoring
Barium (ug/L) at OW-411B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **7793.0** / **15** = **519.533**	Compute the mean of the last 15 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**4.24**x**10^6** - **6.07**x**10^7**/**15**) / (**15**-1))^{½} = **117.447**	Compute sd of the last 15 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **519.533** - **1.761** * **117.447**/**15**^{½} = **466.133**	Compute lower confidence limit for the mean of the last 15 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **519.533** + **1.761** * **117.447**/**15**^{½} = **572.933**	Compute upper confidence limit for the mean of the last 15 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **5.028**	Sen's estimator of trend.
7	var(S) = **407.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **407.333**^{½}) / 2 = [**26.505**, **78.495**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-25.664**, **36.737**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Benzene (ug/L) at OW-411B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **19.049** / **15** = **1.27**	Compute the mean of the last 15 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**34.033** - **362.864**/**15**) / (**15**-1))^{½} = **0.838**	Compute sd of the last 15 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **1.27** - **1.761** * **0.838**/**15**^{½} = **0.889**	Compute lower confidence limit for the mean of the last 15 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **1.27** + **1.761** * **0.838**/**15**^{½} = **1.651**	Compute upper confidence limit for the mean of the last 15 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **-0.205**	Sen's estimator of trend.
7	var(S) = **399.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **399.667**^{½}) / 2 = [**26.751**, **78.249**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.468**, **0.138**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Beryllium (ug/L) at OW-411B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.025** / **15** = **0.135**	Compute the mean of the last 15 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.273** - **4.101**/**15**) / (**15**-1))^{½} = **0.0**	Compute sd of the last 15 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.135** - **1.761** * **0.0**/**15**^{½} = **0.135**	Compute lower confidence limit for the mean of the last 15 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.135** + **1.761** * **0.0**/**15**^{½} = **0.135**	Compute upper confidence limit for the mean of the last 15 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **0.0**^{½}) / 2 = [**52.5**, **52.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cadmium (ug/L) at OW-411B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.135** / **15** = **0.076**	Compute the mean of the last 15 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.216** - **1.287**/**15**) / (**15**-1))^{½} = **0.097**	Compute sd of the last 15 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.076** - **1.761** * **0.097**/**15**^{½} = **0.032**	Compute lower confidence limit for the mean of the last 15 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.076** + **1.761** * **0.097**/**15**^{½} = **0.12**	Compute upper confidence limit for the mean of the last 15 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **-0.006**	Sen's estimator of trend.
7	var(S) = **316.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **316.333**^{½}) / 2 = [**29.592**, **75.408**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.025**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Chromium (ug/L) at OW-411B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **31.85** / **15** = **2.123**	Compute the mean of the last 15 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**205.36** - **1014.423**/**15**) / (**15**-1))^{½} = **3.137**	Compute sd of the last 15 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **2.123** - **1.761** * **3.137**/**15**^{½} = **0.697**	Compute lower confidence limit for the mean of the last 15 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **2.123** + **1.761** * **3.137**/**15**^{½} = **3.549**	Compute upper confidence limit for the mean of the last 15 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **-0.266**	Sen's estimator of trend.
7	var(S) = **342.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **342.0**^{½}) / 2 = [**28.681**, **76.319**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.976**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cis-1,2-dichloroethylene (ug/L) at OW-411B

Step	Equation	Description
1	$\bar{X}$ = **sum[X]** / **N** = **4.18** / **15** = **0.279**	Compute the mean of the last 15 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1.767** - **17.472**/**15**) / (**15**-1))^{½} = **0.207**	Compute sd of the last 15 measurements.
3	LCL = $\bar{\mathbf{X}}$ - **tS**/**N**^{½} = **0.279** - **1.761** * **0.207**/**15**^{½} = **0.184**	Compute lower confidence limit for the mean of the last 15 measurements.
4	UCL = $\bar{\mathbf{X}}$ + **tS**/**N**^{½} = **0.279** + **1.761** * **0.207**/**15**^{½} = **0.373**	Compute upper confidence limit for the mean of the last 15 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **-0.063**	Sen's estimator of trend.
7	var(S) = **343.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **343.0**^{½}) / 2 = [**28.646**, **76.354**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.126**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cobalt (ug/L) at OW-411B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **68.935** / **15** = **4.596**	Compute the mean of the last 15 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**412.847** - **4752.034**/**15**) / (**15**-1))^{½} = **2.619**	Compute sd of the last 15 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **4.596** - **1.761** * **2.619**/**15**^{½} = **3.405**	Compute lower confidence limit for the mean of the last 15 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **4.596** + **1.761** * **2.619**/**15**^{½} = **5.787**	Compute upper confidence limit for the mean of the last 15 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **0.355**	Sen's estimator of trend.
7	var(S) = **408.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **408.333**^{½}) / 2 = [**26.473**, **78.527**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.887**, **1.402**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Copper (ug/L) at OW-411B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **19.25** / **15** = **1.283**	Compute the mean of the last 15 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**40.743** - **370.563**/**15**) / (**15**-1))^{½} = **1.07**	Compute sd of the last 15 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **1.283** - **1.761** * **1.07**/**15**^{½} = **0.797**	Compute lower confidence limit for the mean of the last 15 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **1.283** + **1.761** * **1.07**/**15**^{½} = **1.77**	Compute upper confidence limit for the mean of the last 15 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **139.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **139.667**^{½}) / 2 = [**37.278**, **67.722**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Lead (ug/L) at OW-411B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **3.16** / **15** = **0.211**	Compute the mean of the last 15 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**2.032** - **9.986**/**15**) / (**15**-1))^{½} = **0.312**	Compute sd of the last 15 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.211** - **1.761** * **0.312**/**15**^{½} = **0.069**	Compute lower confidence limit for the mean of the last 15 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.211** + **1.761** * **0.312**/**15**^{½} = **0.353**	Compute upper confidence limit for the mean of the last 15 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **74.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **74.667**^{½}) / 2 = [**41.37**, **63.63**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Nickel (ug/L) at OW-411B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **476.055** / **15** = **31.737**	Compute the mean of the last 15 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**25272.921** - **226628.363**/**15**) / (**15**-1))^{½} = **26.945**	Compute sd of the last 15 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **31.737** - **1.761** * **26.945**/**15**^{½} = **19.486**	Compute lower confidence limit for the mean of the last 15 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **31.737** + **1.761** * **26.945**/**15**^{½} = **43.988**	Compute upper confidence limit for the mean of the last 15 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **0.785**	Sen's estimator of trend.
7	var(S) = **407.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **407.333**^{½}) / 2 = [**26.505**, **78.495**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-8.821**, **3.402**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Selenium (ug/L) at OW-411B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **7.2** / **15** = **0.48**	Compute the mean of the last 15 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**3.456** - **51.84**/**15**) / (**15**-1))^{½} = **0.0**	Compute sd of the last 15 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.48** - **1.761** * **0.0**/**15**^{½} = **0.48**	Compute lower confidence limit for the mean of the last 15 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.48** + **1.761** * **0.0**/**15**^{½} = **0.48**	Compute upper confidence limit for the mean of the last 15 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **0.0**^{½}) / 2 = [**52.5**, **52.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Silver (ug/L) at OW-411B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.775** / **15** = **0.185**	Compute the mean of the last 15 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.513** - **7.701**/**15**) / (**15**-1))^{½} = **0.0**	Compute sd of the last 15 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.185** - **1.761** * **0.0**/**15**^{½} = **0.185**	Compute lower confidence limit for the mean of the last 15 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.185** + **1.761** * **0.0**/**15**^{½} = **0.185**	Compute upper confidence limit for the mean of the last 15 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **0.0**^{½}) / 2 = [**52.5**, **52.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Thallium (ug/L) at OW-411B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.95** / **15** = **0.13**	Compute the mean of the last 15 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.254** - **3.803**/**15**) / (**15**-1))^{½} = **3.66**x**10**$^{-9}$	Compute sd of the last 15 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.13** - **1.761** * **3.66**x**10**$^{-9}$/**15**^{½} = **0.13**	Compute lower confidence limit for the mean of the last 15 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.13** + **1.761** * **3.66**x**10**$^{-9}$/**15**^{½} = **0.13**	Compute upper confidence limit for the mean of the last 15 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **0.0**^{½}) / 2 = [**52.5**, **52.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Vanadium (ug/L) at OW-411B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **14.555** / **15** = **0.97**	Compute the mean of the last 15 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**24.029** - **211.848**/**15**) / (**15**-1))^{½} = **0.841**	Compute sd of the last 15 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.97** - **1.761** * **0.841**/**15**^{½} = **0.588**	Compute lower confidence limit for the mean of the last 15 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.97** + **1.761** * **0.841**/**15**^{½} = **1.353**	Compute upper confidence limit for the mean of the last 15 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **-0.145**	Sen's estimator of trend.
7	var(S) = **316.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **316.333**^{½}) / 2 = [**29.592**, **75.408**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.419**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Vinyl chloride (ug/L) at OW-411B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **3.042** / **15** = **0.203**	Compute the mean of the last 15 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1.124** - **9.254**/**15**) / (**15**-1))^{½} = **0.19**	Compute sd of the last 15 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.203** - **1.761** * **0.19**/**15**^{½} = **0.116**	Compute lower confidence limit for the mean of the last 15 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.203** + **1.761** * **0.19**/**15**^{½} = **0.289**	Compute upper confidence limit for the mean of the last 15 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **-0.04**	Sen's estimator of trend.
7	var(S) = **283.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **283.333**^{½}) / 2 = [**30.82**, **74.18**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.114**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Zinc (ug/L) at OW-411B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **83.3** / **15** = **5.553**	Compute the mean of the last 15 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**526.89** - **6938.89**/**15**) / (**15**-1))^{½} = **2.143**	Compute sd of the last 15 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **5.553** - **1.761** * **2.143**/**15**^{½} = **4.579**	Compute lower confidence limit for the mean of the last 15 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **5.553** + **1.761** * **2.143**/**15**^{½} = **6.528**	Compute upper confidence limit for the mean of the last 15 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **74.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **74.667**^{½}) / 2 = [**41.37**, **63.63**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
1,4-dichlorobenzene (ug/L) at OW-412B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.725** / **15** = **0.115**	Compute the mean of the last 15 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.198** - **2.976**/**15**) / (**15**-1))^{½} = **2.05**x**10**$^{-9}$	Compute sd of the last 15 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.115** - **1.761** * **2.05**x**10**$^{-9}$/**15**^{½} = **0.115**	Compute lower confidence limit for the mean of the last 15 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.115** + **1.761** * **2.05**x**10**$^{-9}$/**15**^{½} = **0.115**	Compute upper confidence limit for the mean of the last 15 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **0.0**^{½}) / 2 = [**52.5**, **52.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Antimony (ug/L) at OW-412B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **3.902** / **15** = **0.26**	Compute the mean of the last 15 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1.019** - **15.226**/**15**) / (**15**-1))^{½} = **0.016**	Compute sd of the last 15 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.26** - **1.761** * **0.016**/**15**^{½} = **0.253**	Compute lower confidence limit for the mean of the last 15 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.26** + **1.761** * **0.016**/**15**^{½} = **0.267**	Compute upper confidence limit for the mean of the last 15 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **139.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **139.667**^{½}) / 2 = [**37.278**, **67.722**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Arsenic (ug/L) at OW-412B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **29.414** / **15** = **1.961**	Compute the mean of the last 15 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**100.824** - **865.183**/**15**) / (**15**-1))^{½} = **1.756**	Compute sd of the last 15 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **1.961** - **1.761** * **1.756**/**15**^{½} = **1.163**	Compute lower confidence limit for the mean of the last 15 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **1.961** + **1.761** * **1.756**/**15**^{½} = **2.759**	Compute upper confidence limit for the mean of the last 15 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **0.511**	Sen's estimator of trend.
7	var(S) = **399.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **399.667**^{½}) / 2 = [**26.751**, **78.249**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.024**, **0.956**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Barium (ug/L) at OW-412B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **12606.0** / **15** = **840.4**	Compute the mean of the last 15 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1.26**x**10^7** - **1.59**x**10^8**/**15**) / (**15**-1))^{½} = **376.893**	Compute sd of the last 15 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **840.4** - **1.761** * **376.893**/**15**^{½} = **669.037**	Compute lower confidence limit for the mean of the last 15 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **840.4** + **1.761** * **376.893**/**15**^{½} = **1011.763**	Compute upper confidence limit for the mean of the last 15 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **142.634**	Sen's estimator of trend.
7	var(S) = **407.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **407.333**^{½}) / 2 = [**26.505**, **78.495**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**108.091**, **179.618**]	Two-sided confidence interval for slope.
10	LCL(S) > 0	**Significant increasing trend.**

Worksheet 6 - Assessment Monitoring
Benzene (ug/L) at OW-412B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **8.678** / **15** = **0.579**	Compute the mean of the last 15 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**5.86** - **75.308**/**15**) / (**15**-1))^{½} = **0.245**	Compute sd of the last 15 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.579** - **1.761** * **0.245**/**15**^{½} = **0.467**	Compute lower confidence limit for the mean of the last 15 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.579** + **1.761** * **0.245**/**15**^{½} = **0.69**	Compute upper confidence limit for the mean of the last 15 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **-0.013**	Sen's estimator of trend.
7	var(S) = **407.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **407.333**^{½}) / 2 = [**26.505**, **78.495**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.082**, **0.111**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Beryllium (ug/L) at OW-412B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.025** / **15** = **0.135**	Compute the mean of the last 15 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.273** - **4.101**/**15**) / (**15**-1))^{½} = **0.0**	Compute sd of the last 15 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.135** - **1.761** * **0.0**/**15**^{½} = **0.135**	Compute lower confidence limit for the mean of the last 15 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.135** + **1.761** * **0.0**/**15**^{½} = **0.135**	Compute upper confidence limit for the mean of the last 15 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **0.0**^{½}) / 2 = [**52.5**, **52.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cadmium (ug/L) at OW-412B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.018** / **15** = **0.068**	Compute the mean of the last 15 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.133** - **1.036**/**15**) / (**15**-1))^{½} = **0.068**	Compute sd of the last 15 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.068** - **1.761** * **0.068**/**15**^{½} = **0.037**	Compute lower confidence limit for the mean of the last 15 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.068** + **1.761** * **0.068**/**15**^{½} = **0.099**	Compute upper confidence limit for the mean of the last 15 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **283.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **283.333**^{½}) / 2 = [**30.82**, **74.18**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.031**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Chromium (ug/L) at OW-412B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **56.24** / **15** = **3.749**	Compute the mean of the last 15 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**525.38** - **3162.938**/**15**) / (**15**-1))^{½} = **4.74**	Compute sd of the last 15 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **3.749** - **1.761** * **4.74**/**15**^{½} = **1.594**	Compute lower confidence limit for the mean of the last 15 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **3.749** + **1.761** * **4.74**/**15**^{½} = **5.904**	Compute upper confidence limit for the mean of the last 15 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **-0.299**	Sen's estimator of trend.
7	var(S) = **391.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **391.667**^{½}) / 2 = [**27.01**, **77.99**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-1.323**, **0.849**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cis-1,2-dichloroethylene (ug/L) at OW-412B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **203.17** / **15** = **13.545**	Compute the mean of the last 15 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**2966.231** - **41278.049**/**15**) / (**15**-1))^{½} = **3.913**	Compute sd of the last 15 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **13.545** - **1.761** * **3.913**/**15**^{½} = **11.766**	Compute lower confidence limit for the mean of the last 15 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **13.545** + **1.761** * **3.913**/**15**^{½} = **15.324**	Compute upper confidence limit for the mean of the last 15 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **1.347**	Sen's estimator of trend.
7	var(S) = **408.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **408.333**^{½}) / 2 = [**26.473**, **78.527**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.249**, **4.016**]	Two-sided confidence interval for slope.
10	LCL(S) > 0	**Significant increasing trend.**

Worksheet 6 - Assessment Monitoring
Cobalt (ug/L) at OW-412B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **24.541** / **15** = **1.636**	Compute the mean of the last 15 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**45.262** - **602.236**/**15**) / (**15**-1))^{½} = **0.604**	Compute sd of the last 15 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **1.636** - **1.761** * **0.604**/**15**^{½} = **1.361**	Compute lower confidence limit for the mean of the last 15 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **1.636** + **1.761** * **0.604**/**15**^{½} = **1.911**	Compute upper confidence limit for the mean of the last 15 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **-0.123**	Sen's estimator of trend.
7	var(S) = **406.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **406.333**^{½}) / 2 = [**26.537**, **78.463**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.283**, **0.033**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Copper (ug/L) at OW-412B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **16.18** / **15** = **1.079**	Compute the mean of the last 15 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**24.156** - **261.792**/**15**) / (**15**-1))^{½} = **0.692**	Compute sd of the last 15 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **1.079** - **1.761** * **0.692**/**15**^{½} = **0.764**	Compute lower confidence limit for the mean of the last 15 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **1.079** + **1.761** * **0.692**/**15**^{½} = **1.393**	Compute upper confidence limit for the mean of the last 15 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **74.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **74.667**^{½}) / 2 = [**41.37**, **63.63**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Lead (ug/L) at OW-412B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **7.024** / **15** = **0.468**	Compute the mean of the last 15 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**5.806** - **49.33**/**15**) / (**15**-1))^{½} = **0.424**	Compute sd of the last 15 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.468** - **1.761** * **0.424**/**15**^{½} = **0.275**	Compute lower confidence limit for the mean of the last 15 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.468** + **1.761** * **0.424**/**15**^{½} = **0.661**	Compute upper confidence limit for the mean of the last 15 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **391.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **391.667**^{½}) / 2 = [**27.01**, **77.99**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.106**, **0.158**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Nickel (ug/L) at OW-412B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **211.43** / **15** = **14.095**	Compute the mean of the last 15 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**3970.208** - **44702.645**/**15**) / (**15**-1))^{½} = **8.409**	Compute sd of the last 15 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **14.095** - **1.761** * **8.409**/**15**^{½} = **10.272**	Compute lower confidence limit for the mean of the last 15 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **14.095** + **1.761** * **8.409**/**15**^{½} = **17.919**	Compute upper confidence limit for the mean of the last 15 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **1.065**	Sen's estimator of trend.
7	var(S) = **408.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **408.333**^{½}) / 2 = [**26.473**, **78.527**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-2.524**, **2.469**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Selenium (ug/L) at OW-412B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **19.56** / **15** = **1.304**	Compute the mean of the last 15 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**155.326** - **382.594**/**15**) / (**15**-1))^{½} = **3.045**	Compute sd of the last 15 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **1.304** - **1.761** * **3.045**/**15**^{½} = **0.0**	Compute lower confidence limit for the mean of the last 15 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **1.304** + **1.761** * **3.045**/**15**^{½} = **2.689**	Compute upper confidence limit for the mean of the last 15 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **139.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **139.667**^{½}) / 2 = [**37.278**, **67.722**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Silver (ug/L) at OW-412B

Step	Equation	Description
1	$\bar{X}$ = **sum[X]** / **N** = **2.922** / **15** = **0.195**	Compute the mean of the last 15 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.589** - **8.538**/**15**) / (**15**-1))^{½} = **0.038**	Compute sd of the last 15 measurements.
3	LCL = $\bar{\mathbf{X}}$ - **tS**/**N**^{½} = **0.195** - **1.761** * **0.038**/**15**^{½} = **0.178**	Compute lower confidence limit for the mean of the last 15 measurements.
4	UCL = $\bar{\mathbf{X}}$ + **tS**/**N**^{½} = **0.195** + **1.761** * **0.038**/**15**^{½} = **0.212**	Compute upper confidence limit for the mean of the last 15 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **74.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **74.667**^{½}) / 2 = [**41.37**, **63.63**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Thallium (ug/L) at OW-412B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **3.61** / **15** = **0.241**	Compute the mean of the last 15 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**5.958** - **13.032**/**15**) / (**15**-1))^{½} = **0.603**	Compute sd of the last 15 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.241** - **1.761** * **0.603**/**15**^{½} = **0.0**	Compute lower confidence limit for the mean of the last 15 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.241** + **1.761** * **0.603**/**15**^{½} = **0.515**	Compute upper confidence limit for the mean of the last 15 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **74.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **74.667**^{½}) / 2 = [**41.37**, **63.63**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Vanadium (ug/L) at OW-412B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **24.8** / **15** = **1.653**	Compute the mean of the last 15 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**80.877** - **615.04**/**15**) / (**15**-1))^{½} = **1.688**	Compute sd of the last 15 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **1.653** - **1.761** * **1.688**/**15**^{½} = **0.886**	Compute lower confidence limit for the mean of the last 15 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **1.653** + **1.761** * **1.688**/**15**^{½} = **2.421**	Compute upper confidence limit for the mean of the last 15 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **-0.42**	Sen's estimator of trend.
7	var(S) = **343.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **343.0**^{½}) / 2 = [**28.646**, **76.354**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.876**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Vinyl chloride (ug/L) at OW-412B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **40.115** / **15** = **2.674**	Compute the mean of the last 15 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**148.988** - **1609.213**/**15**) / (**15**-1))^{½} = **1.726**	Compute sd of the last 15 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **2.674** - **1.761** * **1.726**/**15**^{½} = **1.89**	Compute lower confidence limit for the mean of the last 15 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **2.674** + **1.761** * **1.726**/**15**^{½} = **3.459**	Compute upper confidence limit for the mean of the last 15 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **0.107**	Sen's estimator of trend.
7	var(S) = **404.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **404.667**^{½}) / 2 = [**26.59**, **78.41**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.682**, **0.906**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Zinc (ug/L) at OW-412B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **75.0** / **15** = **5.0**	Compute the mean of the last 15 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**375.0** - **5625.0**/**15**) / (**15**-1))^{½} = **0.0**	Compute sd of the last 15 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **5.0** - **1.761** * **0.0**/**15**^{½} = **5.0**	Compute lower confidence limit for the mean of the last 15 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **5.0** + **1.761** * **0.0**/**15**^{½} = **5.0**	Compute upper confidence limit for the mean of the last 15 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **0.0**^{½}) / 2 = [**52.5**, **52.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
1,4-dichlorobenzene (ug/L) at OW-413B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.84** / **16** = **0.115**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.212** - **3.386**/**16**) / (**16**-1))^{½} = **2.24**x**10**$^{-9}$	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.115** - **1.753** * **2.24**x**10**$^{-9}$/**16**^{½} = **0.115**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.115** + **1.753** * **2.24**x**10**$^{-9}$/**16**^{½} = **0.115**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **19** * (**19**-1) / 2 = **171**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**171** ± **2.576** * **0.0**^{½}) / 2 = [**85.5**, **85.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Antimony (ug/L) at OW-413B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **4.788** / **16** = **0.299**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1.453** - **22.925**/**16**) / (**16**-1))^{½} = **0.037**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.299** - **1.753** * **0.037**/**16**^{½} = **0.283**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.299** + **1.753** * **0.037**/**16**^{½} = **0.315**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **19** * (**19**-1) / 2 = **171**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **227.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**171** ± **2.576** * **227.667**^{½}) / 2 = [**66.066**, **104.934**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Arsenic (ug/L) at OW-413B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **99.54** / **16** = **6.221**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**687.253** - **9908.212**/**16**) / (**16**-1))^{½} = **2.129**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **6.221** - **1.753** * **2.129**/**16**^{½} = **5.288**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **6.221** + **1.753** * **2.129**/**16**^{½} = **7.154**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **19** * (**19**-1) / 2 = **171**	Number of sample pairs during trend detection period.
6	S = **0.336**	Sen's estimator of trend.
7	var(S) = **817.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**171** ± **2.576** * **817.0**^{½}) / 2 = [**48.685**, **122.315**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.12**, **0.93**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Barium (ug/L) at OW-413B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **7488.0** / **16** = **468.0**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**3.61**x**10^6** - **5.61**x**10^7**/**16**) / (**16**-1))^{½} = **82.399**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **468.0** - **1.753** * **82.399**/**16**^{½} = **431.894**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **468.0** + **1.753** * **82.399**/**16**^{½} = **504.106**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **19** * (**19**-1) / 2 = **171**	Number of sample pairs during trend detection period.
6	S = **14.505**	Sen's estimator of trend.
7	var(S) = **817.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**171** ± **2.576** * **817.0**^{½}) / 2 = [**48.685**, **122.315**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-17.189**, **37.083**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Benzene (ug/L) at OW-413B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **24.76** / **16** = **1.548**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**40.099** - **613.058**/**16**) / (**16**-1))^{½} = **0.345**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **1.548** - **1.753** * **0.345**/**16**^{½} = **1.396**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **1.548** + **1.753** * **0.345**/**16**^{½} = **1.699**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **19** * (**19**-1) / 2 = **171**	Number of sample pairs during trend detection period.
6	S = **-0.079**	Sen's estimator of trend.
7	var(S) = **816.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**171** ± **2.576** * **816.0**^{½}) / 2 = [**48.707**, **122.293**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.189**, **0.044**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Beryllium (ug/L) at OW-413B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.16** / **16** = **0.135**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.292** - **4.666**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.135** - **1.753** * **0.0**/**16**^{½} = **0.135**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.135** + **1.753** * **0.0**/**16**^{½} = **0.135**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **19** * (**19**-1) / 2 = **171**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**171** ± **2.576** * **0.0**^{½}) / 2 = [**85.5**, **85.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cadmium (ug/L) at OW-413B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.408** / **16** = **0.026**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.01** - **0.166**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.026** - **1.753** * **0.0**/**16**^{½} = **0.026**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.026** + **1.753** * **0.0**/**16**^{½} = **0.026**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **19** * (**19**-1) / 2 = **171**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**171** ± **2.576** * **0.0**^{½}) / 2 = [**85.5**, **85.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Chromium (ug/L) at OW-413B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **59.0** / **16** = **3.688**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**599.83** - **3481.0**/**16**) / (**16**-1))^{½} = **5.048**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **3.688** - **1.753** * **5.048**/**16**^{½} = **1.475**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **3.688** + **1.753** * **5.048**/**16**^{½} = **5.9**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **19** * (**19**-1) / 2 = **171**	Number of sample pairs during trend detection period.
6	S = **-0.337**	Sen's estimator of trend.
7	var(S) = **652.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**171** ± **2.576** * **652.0**^{½}) / 2 = [**52.612**, **118.388**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-1.496**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cis-1,2-dichloroethylene (ug/L) at OW-413B

Step	Equation	Description
1	$\bar{X}$ = **sum[X]** / **N** = **6.571** / **16** = **0.411**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**5.309** - **43.178**/**16**) / (**16**-1))^{½} = **0.417**	Compute sd of the last 16 measurements.
3	LCL = $\bar{\mathbf{X}}$ - **tS**/**N**^{½} = **0.411** - **1.753** * **0.417**/**16**^{½} = **0.228**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\bar{\mathbf{X}}$ + **tS**/**N**^{½} = **0.411** + **1.753** * **0.417**/**16**^{½} = **0.593**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **19** * (**19**-1) / 2 = **171**	Number of sample pairs during trend detection period.
6	S = **-0.097**	Sen's estimator of trend.
7	var(S) = **692.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**171** ± **2.576** * **692.0**^{½}) / 2 = [**51.618**, **119.382**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.219**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cobalt (ug/L) at OW-413B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **60.74** / **16** = **3.796**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**253.546** - **3689.348**/**16**) / (**16**-1))^{½} = **1.237**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **3.796** - **1.753** * **1.237**/**16**^{½} = **3.254**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **3.796** + **1.753** * **1.237**/**16**^{½} = **4.338**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **19** * (**19**-1) / 2 = **171**	Number of sample pairs during trend detection period.
6	S = **0.082**	Sen's estimator of trend.
7	var(S) = **817.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**171** ± **2.576** * **817.0**^{½}) / 2 = [**48.685**, **122.315**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.311**, **0.506**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Copper (ug/L) at OW-413B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **14.4** / **16** = **0.9**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**12.96** - **207.36**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.9** - **1.753** * **0.0**/**16**^{½} = **0.9**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.9** + **1.753** * **0.0**/**16**^{½} = **0.9**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **19** * (**19**-1) / 2 = **171**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**171** ± **2.576** * **0.0**^{½}) / 2 = [**85.5**, **85.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Lead (ug/L) at OW-413B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **3.338** / **16** = **0.209**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1.516** - **11.142**/**16**) / (**16**-1))^{½} = **0.234**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.209** - **1.753** * **0.234**/**16**^{½} = **0.106**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.209** + **1.753** * **0.234**/**16**^{½} = **0.311**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **19** * (**19**-1) / 2 = **171**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **408.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**171** ± **2.576** * **408.667**^{½}) / 2 = [**59.462**, **111.538**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Nickel (ug/L) at OW-413B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **44.39** / **16** = **2.774**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**217.464** - **1970.472**/**16**) / (**16**-1))^{½} = **2.507**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **2.774** - **1.753** * **2.507**/**16**^{½} = **1.676**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **2.774** + **1.753** * **2.507**/**16**^{½} = **3.873**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **19** * (**19**-1) / 2 = **171**	Number of sample pairs during trend detection period.
6	S = **-0.138**	Sen's estimator of trend.
7	var(S) = **725.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**171** ± **2.576** * **725.0**^{½}) / 2 = [**50.82**, **120.18**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-1.405**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Selenium (ug/L) at OW-413B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **7.68** / **16** = **0.48**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**3.686** - **58.982**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.48** - **1.753** * **0.0**/**16**^{½} = **0.48**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.48** + **1.753** * **0.0**/**16**^{½} = **0.48**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **19** * (**19**-1) / 2 = **171**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**171** ± **2.576** * **0.0**^{½}) / 2 = [**85.5**, **85.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Silver (ug/L) at OW-413B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.959** / **16** = **0.185**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.547** - **8.756**/**16**) / (**16**-1))^{½} = **2.50**x**10**$^{-4}$	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.185** - **1.753** * **2.50**x**10**$^{-4}$/**16**^{½} = **0.185**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.185** + **1.753** * **2.50**x**10**$^{-4}$/**16**^{½} = **0.185**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **19** * (**19**-1) / 2 = **171**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **227.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**171** ± **2.576** * **227.667**^{½}) / 2 = [**66.066**, **104.934**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Thallium (ug/L) at OW-413B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.08** / **16** = **0.13**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.27** - **4.326**/**16**) / (**16**-1))^{½} = **4.01**x**10**$^{-9}$	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.13** - **1.753** * **4.01**x**10**$^{-9}$/**16**^{½} = **0.13**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.13** + **1.753** * **4.01**x**10**$^{-9}$/**16**^{½} = **0.13**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **19** * (**19**-1) / 2 = **171**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**171** ± **2.576** * **0.0**^{½}) / 2 = [**85.5**, **85.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Vanadium (ug/L) at OW-413B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **18.67** / **16** = **1.167**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**49.995** - **348.569**/**16**) / (**16**-1))^{½} = **1.371**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **1.167** - **1.753** * **1.371**/**16**^{½} = **0.566**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **1.167** + **1.753** * **1.371**/**16**^{½} = **1.768**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **19** * (**19**-1) / 2 = **171**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **604.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**171** ± **2.576** * **604.333**^{½}) / 2 = [**53.837**, **117.163**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.12**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Vinyl chloride (ug/L) at OW-413B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.906** / **16** = **0.119**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.332** - **3.633**/**16**) / (**16**-1))^{½} = **0.084**	Compute sd of the last 16 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.119** - **1.753** * **0.084**/**16**^{½} = **0.082**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.119** + **1.753** * **0.084**/**16**^{½} = **0.156**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **19** * (**19**-1) / 2 = **171**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **483.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**171** ± **2.576** * **483.333**^{½}) / 2 = [**57.184**, **113.816**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.026**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Zinc (ug/L) at OW-413B

Step	Equation	Description
1	$\bar{X}$ = **sum[X]** / **N** = **80.0** / **16** = **5.0**	Compute the mean of the last 16 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**400.0** - **6400.0**/**16**) / (**16**-1))^{½} = **0.0**	Compute sd of the last 16 measurements.
3	LCL = $\bar{\mathbf{X}}$ - **tS**/**N**^{½} = **5.0** - **1.753** * **0.0**/**16**^{½} = **5.0**	Compute lower confidence limit for the mean of the last 16 measurements.
4	UCL = $\bar{\mathbf{X}}$ + **tS**/**N**^{½} = **5.0** + **1.753** * **0.0**/**16**^{½} = **5.0**	Compute upper confidence limit for the mean of the last 16 measurements.
5	N' = **N** * (**N**-1) / 2 = **19** * (**19**-1) / 2 = **171**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**171** ± **2.576** * **0.0**^{½}) / 2 = [**85.5**, **85.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
1,4-dichlorobenzene (ug/L) at OW-414B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **18.995** / **15** = **1.266**	Compute the mean of the last 15 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**45.938** - **360.81**/**15**) / (**15**-1))^{½} = **1.25**	Compute sd of the last 15 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **1.266** - **1.761** * **1.25**/**15**^{½} = **0.698**	Compute lower confidence limit for the mean of the last 15 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **1.266** + **1.761** * **1.25**/**15**^{½} = **1.835**	Compute upper confidence limit for the mean of the last 15 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **364.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **364.0**^{½}) / 2 = [**27.927**, **77.073**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.369**, **0.447**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Antimony (ug/L) at OW-414B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **3.821** / **15** = **0.255**	Compute the mean of the last 15 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.973** - **14.6**/**15**) / (**15**-1))^{½} = **0.001**	Compute sd of the last 15 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.255** - **1.761** * **0.001**/**15**^{½} = **0.254**	Compute lower confidence limit for the mean of the last 15 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.255** + **1.761** * **0.001**/**15**^{½} = **0.255**	Compute upper confidence limit for the mean of the last 15 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **74.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **74.667**^{½}) / 2 = [**41.37**, **63.63**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Arsenic (ug/L) at OW-414B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **89.84** / **15** = **5.989**	Compute the mean of the last 15 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**597.548** - **8071.226**/**15**) / (**15**-1))^{½} = **2.061**	Compute sd of the last 15 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **5.989** - **1.761** * **2.061**/**15**^{½} = **5.052**	Compute lower confidence limit for the mean of the last 15 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **5.989** + **1.761** * **2.061**/**15**^{½} = **6.926**	Compute upper confidence limit for the mean of the last 15 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **0.545**	Sen's estimator of trend.
7	var(S) = **407.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **407.333**^{½}) / 2 = [**26.505**, **78.495**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.187**, **1.187**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Barium (ug/L) at OW-414B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **8127.0** / **15** = **541.8**	Compute the mean of the last 15 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**4.49**x**10^6** - **6.60**x**10^7**/**15**) / (**15**-1))^{½} = **80.512**	Compute sd of the last 15 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **541.8** - **1.761** * **80.512**/**15**^{½} = **505.193**	Compute lower confidence limit for the mean of the last 15 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **541.8** + **1.761** * **80.512**/**15**^{½} = **578.407**	Compute upper confidence limit for the mean of the last 15 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **13.193**	Sen's estimator of trend.
7	var(S) = **408.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **408.333**^{½}) / 2 = [**26.473**, **78.527**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-17.609**, **54.881**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Benzene (ug/L) at OW-414B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **31.12** / **15** = **2.075**	Compute the mean of the last 15 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**68.792** - **968.454**/**15**) / (**15**-1))^{½} = **0.55**	Compute sd of the last 15 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **2.075** - **1.761** * **0.55**/**15**^{½} = **1.825**	Compute lower confidence limit for the mean of the last 15 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **2.075** + **1.761** * **0.55**/**15**^{½} = **2.325**	Compute upper confidence limit for the mean of the last 15 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **-0.062**	Sen's estimator of trend.
7	var(S) = **407.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **407.333**^{½}) / 2 = [**26.505**, **78.495**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.372**, **0.15**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Beryllium (ug/L) at OW-414B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.025** / **15** = **0.135**	Compute the mean of the last 15 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.273** - **4.101**/**15**) / (**15**-1))^{½} = **0.0**	Compute sd of the last 15 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.135** - **1.761** * **0.0**/**15**^{½} = **0.135**	Compute lower confidence limit for the mean of the last 15 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.135** + **1.761** * **0.0**/**15**^{½} = **0.135**	Compute upper confidence limit for the mean of the last 15 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **0.0**^{½}) / 2 = [**52.5**, **52.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cadmium (ug/L) at OW-414B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.327** / **15** = **0.088**	Compute the mean of the last 15 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.315** - **1.761**/**15**) / (**15**-1))^{½} = **0.119**	Compute sd of the last 15 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.088** - **1.761** * **0.119**/**15**^{½} = **0.035**	Compute lower confidence limit for the mean of the last 15 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.088** + **1.761** * **0.119**/**15**^{½} = **0.142**	Compute upper confidence limit for the mean of the last 15 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **283.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **283.333**^{½}) / 2 = [**30.82**, **74.18**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.042**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Chromium (ug/L) at OW-414B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **47.41** / **15** = **3.161**	Compute the mean of the last 15 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**318.624** - **2247.708**/**15**) / (**15**-1))^{½} = **3.472**	Compute sd of the last 15 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **3.161** - **1.761** * **3.472**/**15**^{½} = **1.582**	Compute lower confidence limit for the mean of the last 15 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **3.161** + **1.761** * **3.472**/**15**^{½} = **4.739**	Compute upper confidence limit for the mean of the last 15 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **-0.759**	Sen's estimator of trend.
7	var(S) = **343.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **343.0**^{½}) / 2 = [**28.646**, **76.354**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-1.855**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cis-1,2-dichloroethylene (ug/L) at OW-414B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **265.48** / **15** = **17.699**	Compute the mean of the last 15 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**5442.295** - **70479.63**/**15**) / (**15**-1))^{½} = **7.288**	Compute sd of the last 15 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **17.699** - **1.761** * **7.288**/**15**^{½} = **14.385**	Compute lower confidence limit for the mean of the last 15 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **17.699** + **1.761** * **7.288**/**15**^{½} = **21.012**	Compute upper confidence limit for the mean of the last 15 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **-2.829**	Sen's estimator of trend.
7	var(S) = **408.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **408.333**^{½}) / 2 = [**26.473**, **78.527**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-4.489**, **-1.531**]	Two-sided confidence interval for slope.
10	UCL(S) < 0	**Significant decreasing trend.**

Worksheet 6 - Assessment Monitoring
Cobalt (ug/L) at OW-414B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **285.21** / **15** = **19.014**	Compute the mean of the last 15 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**5760.838** - **81344.744**/**15**) / (**15**-1))^{½} = **4.912**	Compute sd of the last 15 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **19.014** - **1.761** * **4.912**/**15**^{½} = **16.78**	Compute lower confidence limit for the mean of the last 15 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **19.014** + **1.761** * **4.912**/**15**^{½} = **21.248**	Compute upper confidence limit for the mean of the last 15 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **0.981**	Sen's estimator of trend.
7	var(S) = **408.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **408.333**^{½}) / 2 = [**26.473**, **78.527**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-1.472**, **2.91**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Copper (ug/L) at OW-414B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **29.28** / **15** = **1.952**	Compute the mean of the last 15 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**115.768** - **857.318**/**15**) / (**15**-1))^{½} = **2.046**	Compute sd of the last 15 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **1.952** - **1.761** * **2.046**/**15**^{½} = **1.022**	Compute lower confidence limit for the mean of the last 15 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **1.952** + **1.761** * **2.046**/**15**^{½} = **2.882**	Compute upper confidence limit for the mean of the last 15 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **243.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **243.333**^{½}) / 2 = [**32.408**, **72.592**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.534**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Lead (ug/L) at OW-414B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.95** / **15** = **0.13**	Compute the mean of the last 15 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.254** - **3.803**/**15**) / (**15**-1))^{½} = **3.66**x**10**$^{-9}$	Compute sd of the last 15 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.13** - **1.761** * **3.66**x**10**$^{-9}$/**15**^{½} = **0.13**	Compute lower confidence limit for the mean of the last 15 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.13** + **1.761** * **3.66**x**10**$^{-9}$/**15**^{½} = **0.13**	Compute upper confidence limit for the mean of the last 15 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **0.0**^{½}) / 2 = [**52.5**, **52.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Nickel (ug/L) at OW-414B

Step	Equation	Description
1	$\bar{X}$ = **sum[X]** / **N** = **1147.9** / **15** = **76.527**	Compute the mean of the last 15 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**93763.03** - **1.32**x**10^6**/**15**) / (**15**-1))^{½} = **20.56**	Compute sd of the last 15 measurements.
3	LCL = $\bar{\mathbf{X}}$ - **tS**/**N**^{½} = **76.527** - **1.761** * **20.56**/**15**^{½} = **67.179**	Compute lower confidence limit for the mean of the last 15 measurements.
4	UCL = $\bar{\mathbf{X}}$ + **tS**/**N**^{½} = **76.527** + **1.761** * **20.56**/**15**^{½} = **85.875**	Compute upper confidence limit for the mean of the last 15 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **1.289**	Sen's estimator of trend.
7	var(S) = **408.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **408.333**^{½}) / 2 = [**26.473**, **78.527**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-8.103**, **10.457**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Selenium (ug/L) at OW-414B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **7.462** / **15** = **0.497**	Compute the mean of the last 15 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**3.776** - **55.681**/**15**) / (**15**-1))^{½} = **0.068**	Compute sd of the last 15 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.497** - **1.761** * **0.068**/**15**^{½} = **0.467**	Compute lower confidence limit for the mean of the last 15 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.497** + **1.761** * **0.068**/**15**^{½} = **0.528**	Compute upper confidence limit for the mean of the last 15 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **74.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **74.667**^{½}) / 2 = [**41.37**, **63.63**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Silver (ug/L) at OW-414B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.775** / **15** = **0.185**	Compute the mean of the last 15 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.513** - **7.701**/**15**) / (**15**-1))^{½} = **0.0**	Compute sd of the last 15 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.185** - **1.761** * **0.0**/**15**^{½} = **0.185**	Compute lower confidence limit for the mean of the last 15 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.185** + **1.761** * **0.0**/**15**^{½} = **0.185**	Compute upper confidence limit for the mean of the last 15 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **0.0**^{½}) / 2 = [**52.5**, **52.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Thallium (ug/L) at OW-414B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.95** / **15** = **0.13**	Compute the mean of the last 15 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.254** - **3.803**/**15**) / (**15**-1))^{½} = **3.66**x**10**$^{-9}$	Compute sd of the last 15 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.13** - **1.761** * **3.66**x**10**$^{-9}$/**15**^{½} = **0.13**	Compute lower confidence limit for the mean of the last 15 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.13** + **1.761** * **3.66**x**10**$^{-9}$/**15**^{½} = **0.13**	Compute upper confidence limit for the mean of the last 15 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **0.0**^{½}) / 2 = [**52.5**, **52.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Vanadium (ug/L) at OW-414B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **12.191** / **15** = **0.813**	Compute the mean of the last 15 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**13.433** - **148.62**/**15**) / (**15**-1))^{½} = **0.502**	Compute sd of the last 15 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.813** - **1.761** * **0.502**/**15**^{½} = **0.585**	Compute lower confidence limit for the mean of the last 15 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.813** + **1.761** * **0.502**/**15**^{½} = **1.041**	Compute upper confidence limit for the mean of the last 15 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **-0.158**	Sen's estimator of trend.
7	var(S) = **342.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **342.0**^{½}) / 2 = [**28.681**, **76.319**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.325**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

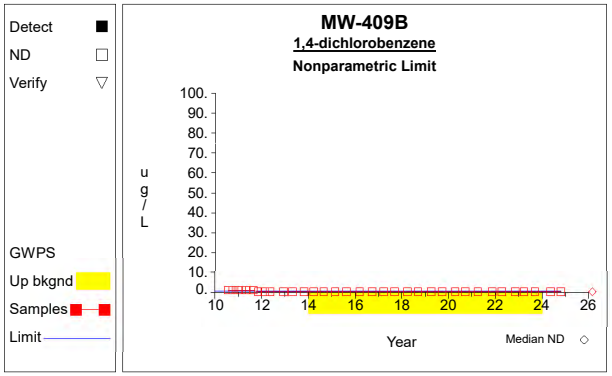
Worksheet 6 - Assessment Monitoring
Vinyl chloride (ug/L) at OW-414B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **44.12** / **15** = **2.941**	Compute the mean of the last 15 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**190.161** - **1946.574**/**15**) / (**15**-1))^{½} = **2.077**	Compute sd of the last 15 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **2.941** - **1.761** * **2.077**/**15**^{½} = **1.997**	Compute lower confidence limit for the mean of the last 15 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **2.941** + **1.761** * **2.077**/**15**^{½} = **3.886**	Compute upper confidence limit for the mean of the last 15 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **-0.75**	Sen's estimator of trend.
7	var(S) = **407.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **407.333**^{½}) / 2 = [**26.505**, **78.495**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-1.167**, **-0.042**]	Two-sided confidence interval for slope.
10	UCL(S) < 0	**Significant decreasing trend.**

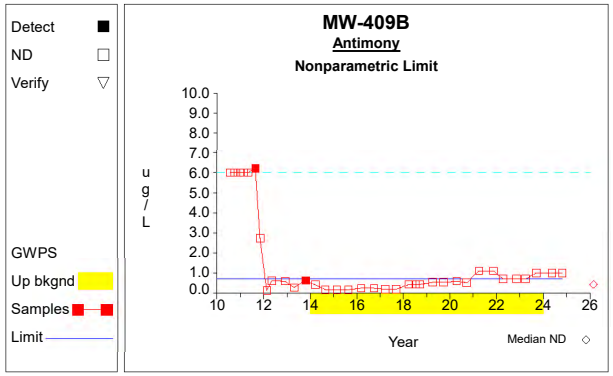
Worksheet 6 - Assessment Monitoring
Zinc (ug/L) at OW-414B

Step	Equation	Description
1	$\bar{X}$ = **sum[X]** / **N** = **76.39** / **15** = **5.093**	Compute the mean of the last 15 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**390.832** - **5835.432**/**15**) / (**15**-1))^{½} = **0.359**	Compute sd of the last 15 measurements.
3	LCL = $\bar{\mathbf{X}}$ - **tS**/**N**^{½} = **5.093** - **1.761** * **0.359**/**15**^{½} = **4.929**	Compute lower confidence limit for the mean of the last 15 measurements.
4	UCL = $\bar{\mathbf{X}}$ + **tS**/**N**^{½} = **5.093** + **1.761** * **0.359**/**15**^{½} = **5.256**	Compute upper confidence limit for the mean of the last 15 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **74.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **74.667**^{½}) / 2 = [**41.37**, **63.63**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

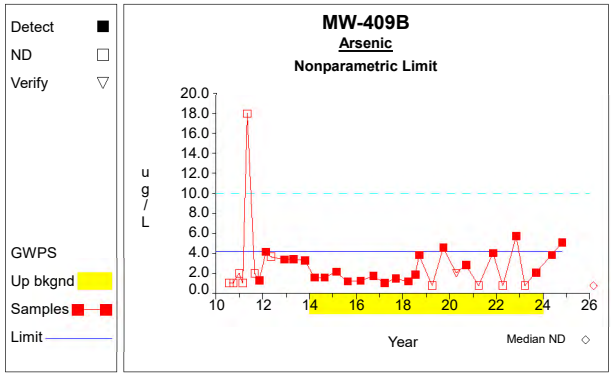
Up vs. Down Prediction Limits



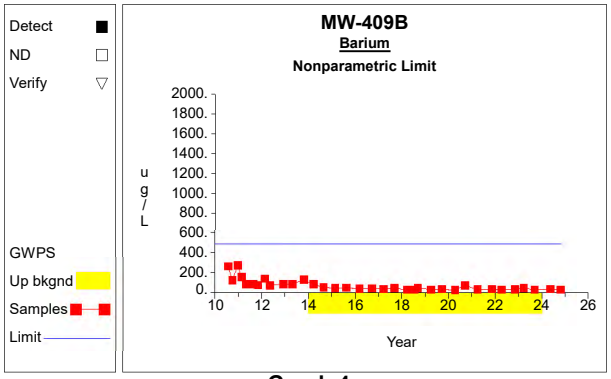
Graph 1



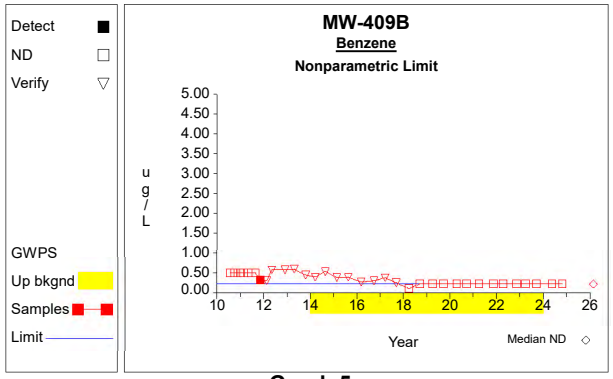
Graph 2



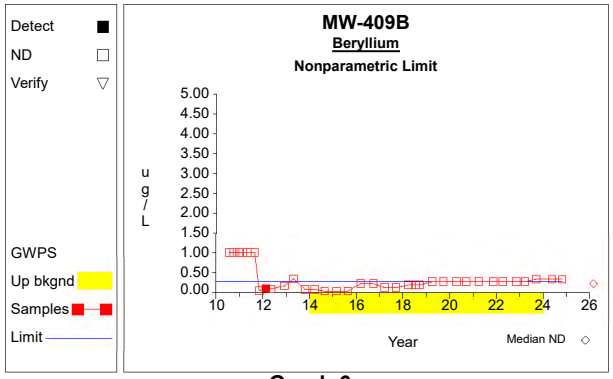
Graph 3



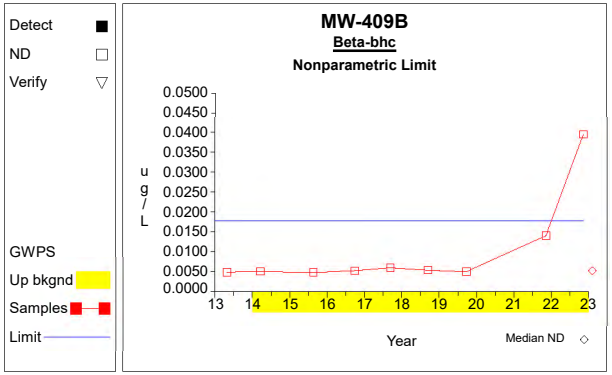
Graph 4



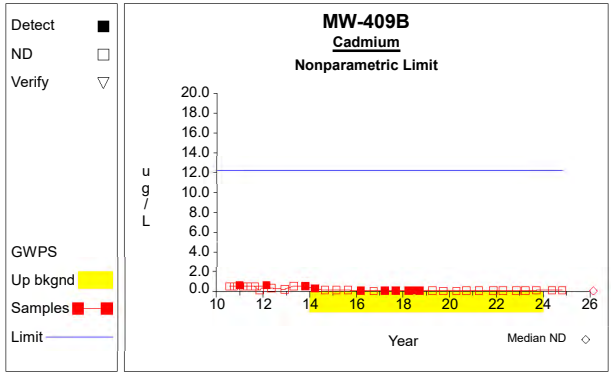
Graph 5



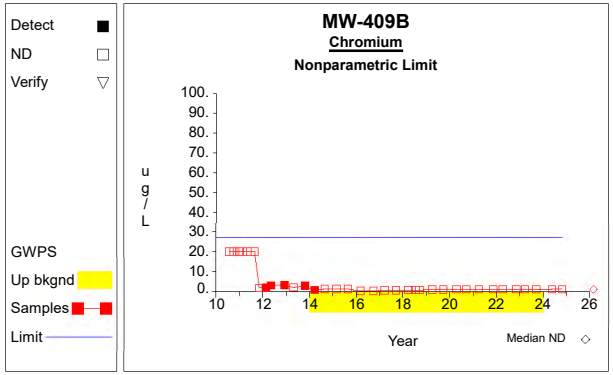
Graph 6



Graph 7

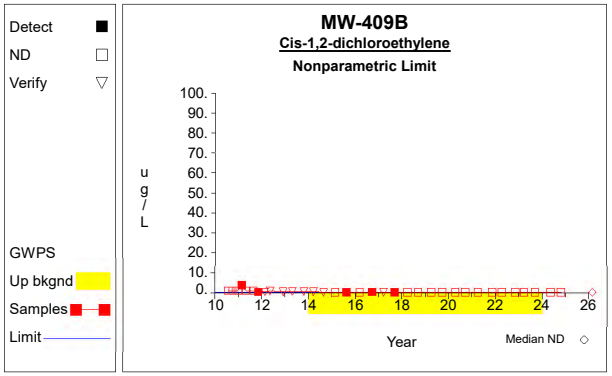


Graph 8

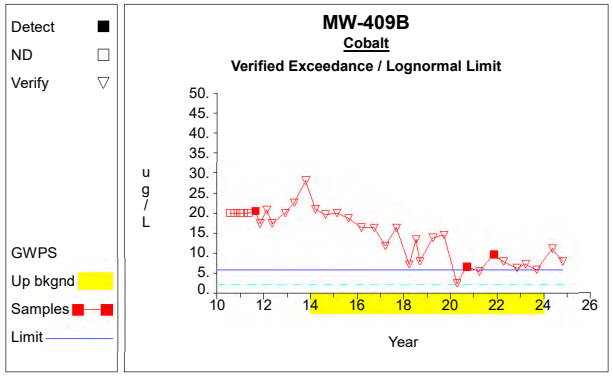


Graph 9

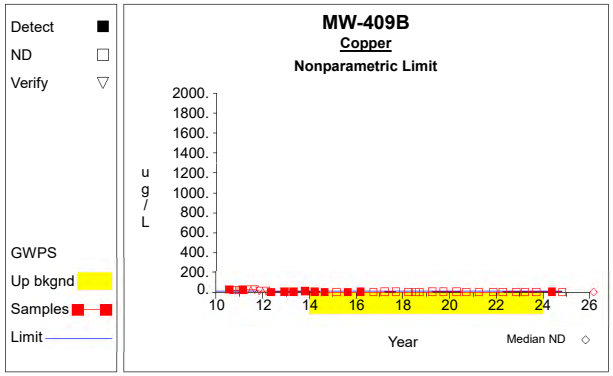
Up vs. Down Prediction Limits



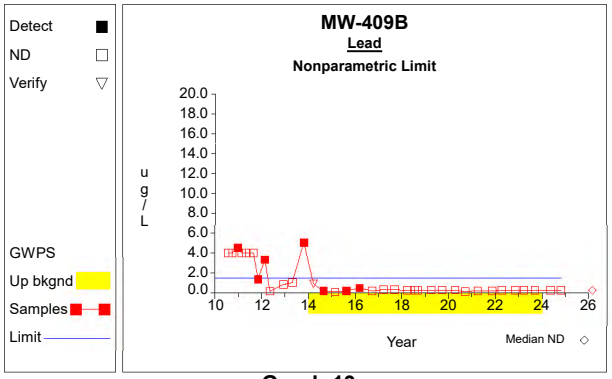
Graph 10



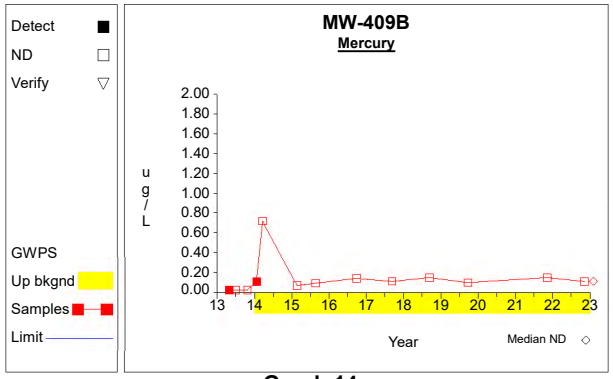
Graph 11



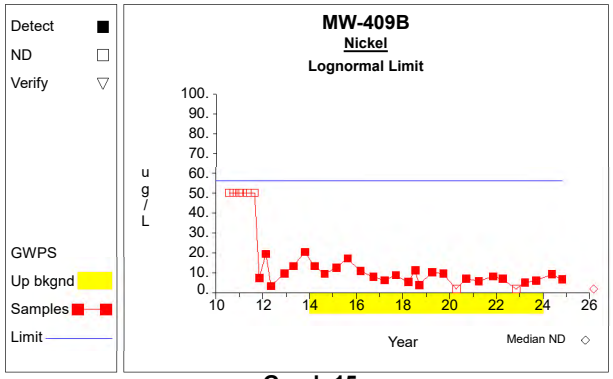
Graph 12



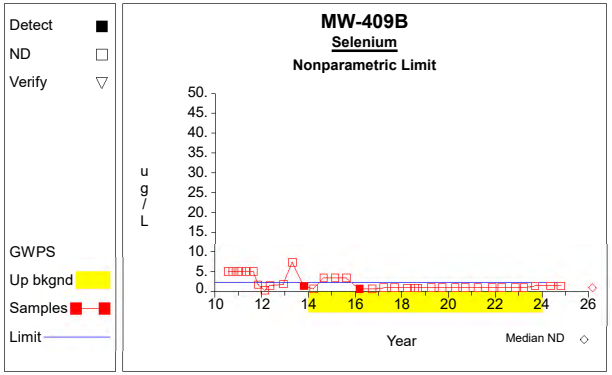
Graph 13



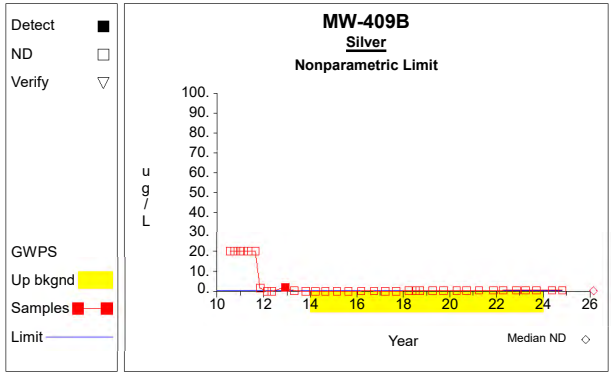
Graph 14



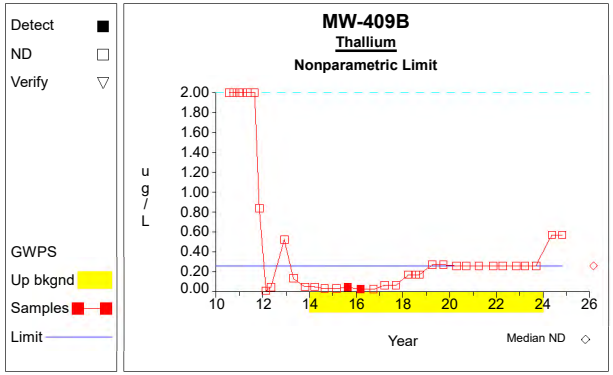
Graph 15



Graph 16

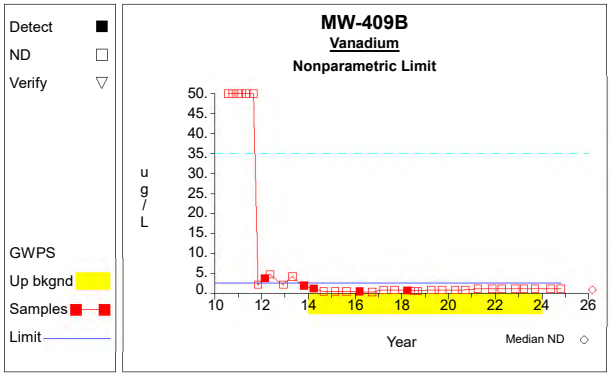


Graph 17

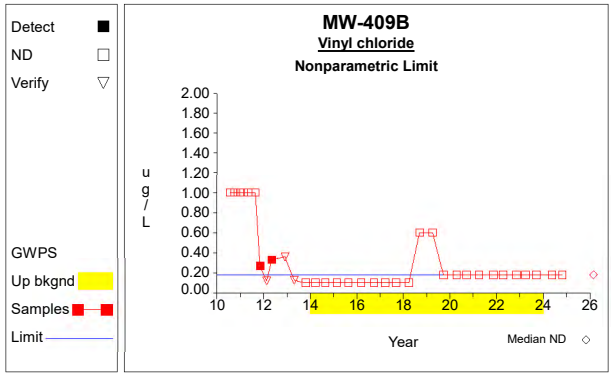


Graph 18

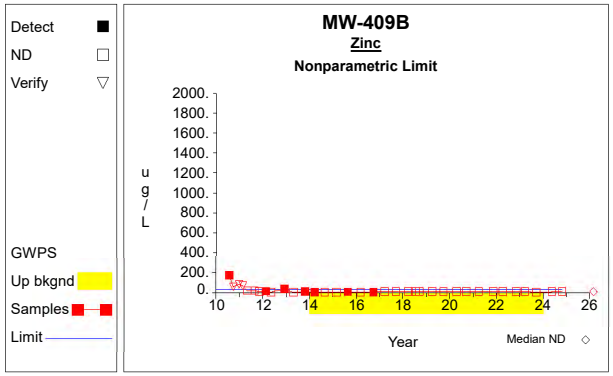
Up vs. Down Prediction Limits



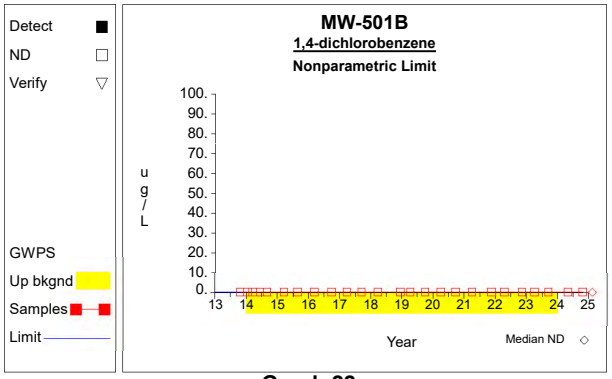
Graph 19



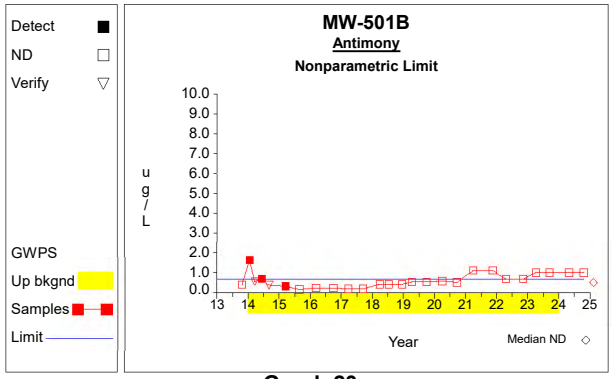
Graph 20



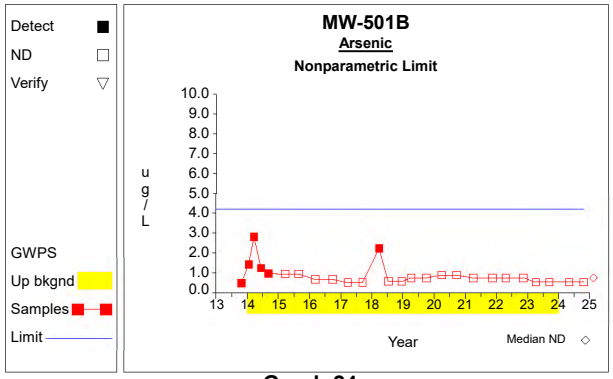
Graph 21



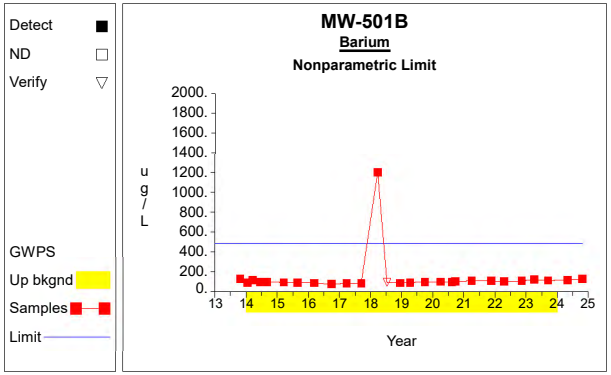
Graph 22



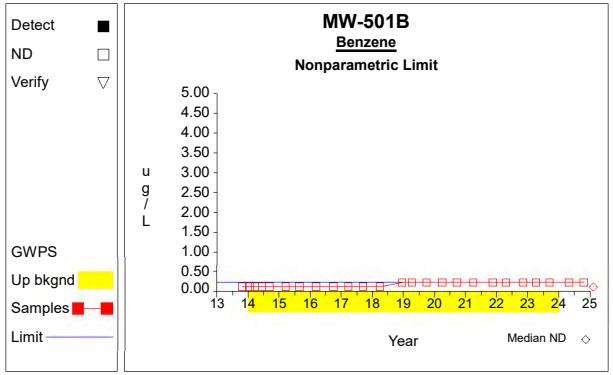
Graph 23



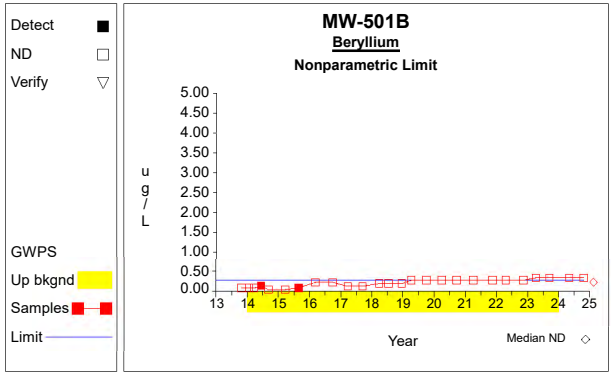
Graph 24



Graph 25

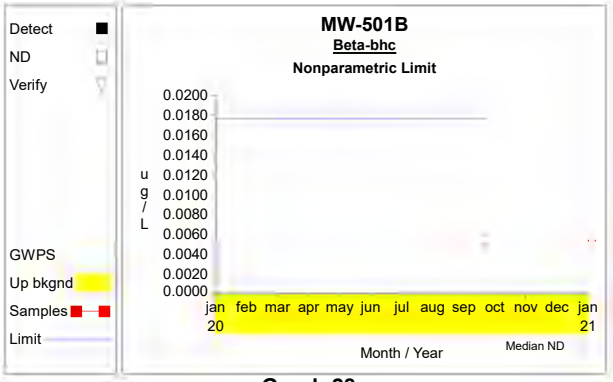


Graph 26

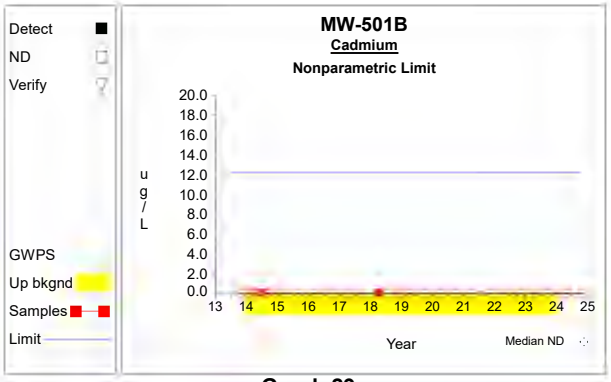


Graph 27

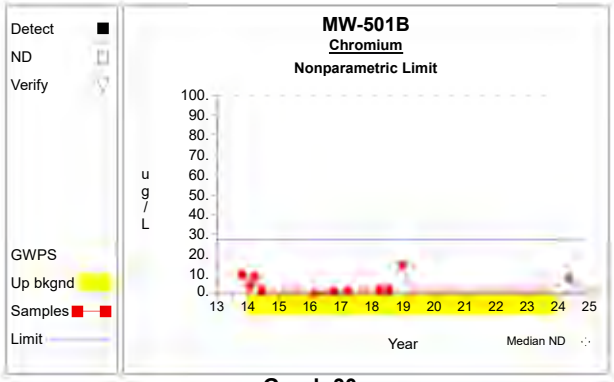
Up vs. Down Prediction Limits



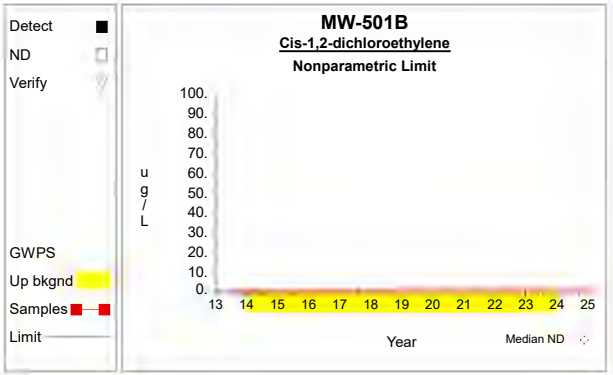
Graph 28



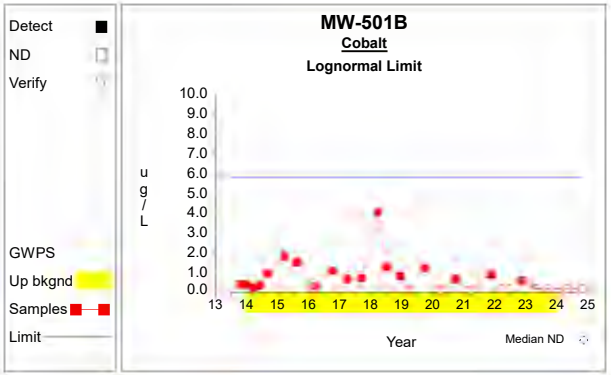
Graph 29



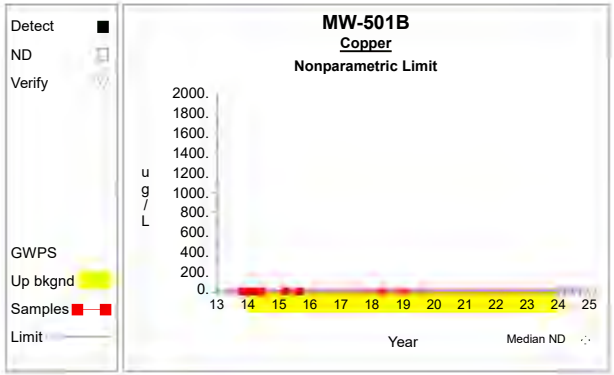
Graph 30



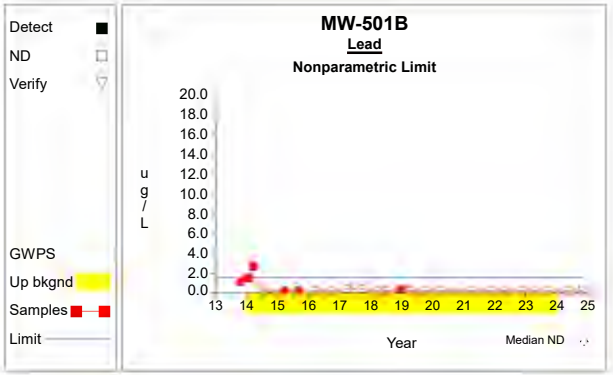
Graph 31



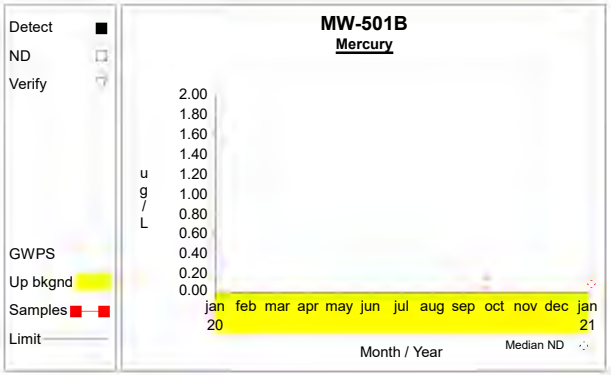
Graph 32



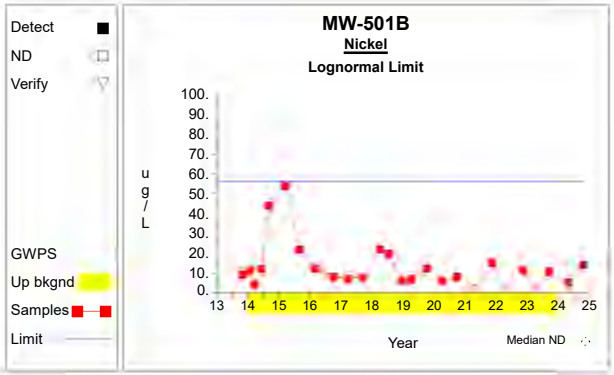
Graph 33



Graph 34

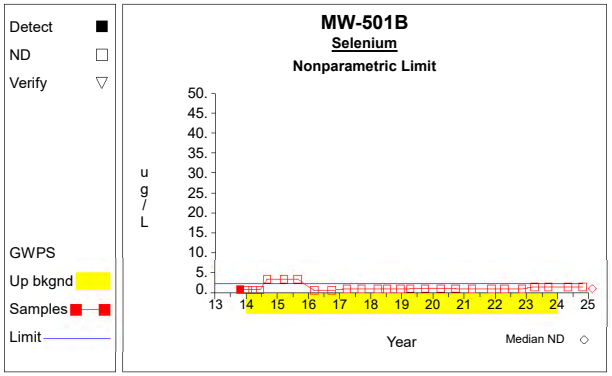


Graph 35

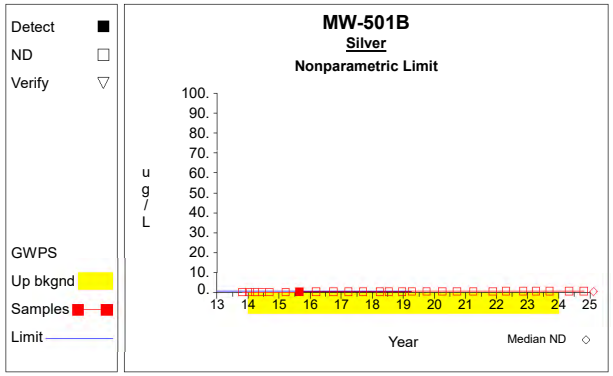


Graph 36

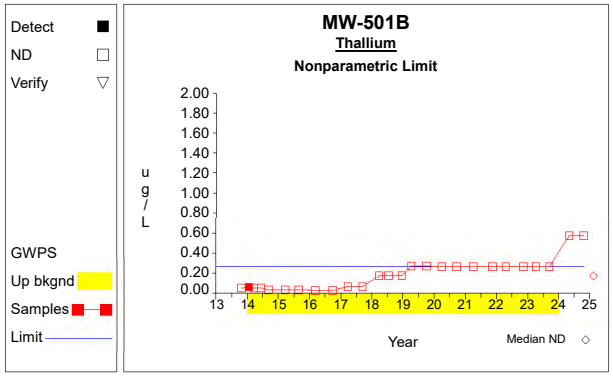
Up vs. Down Prediction Limits



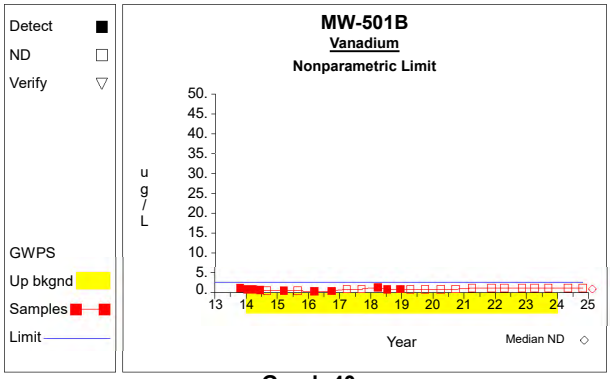
Graph 37



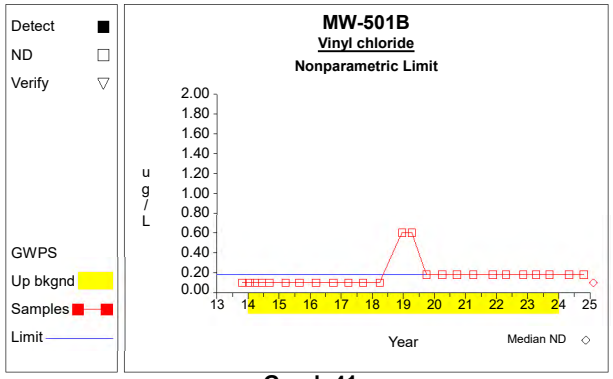
Graph 38



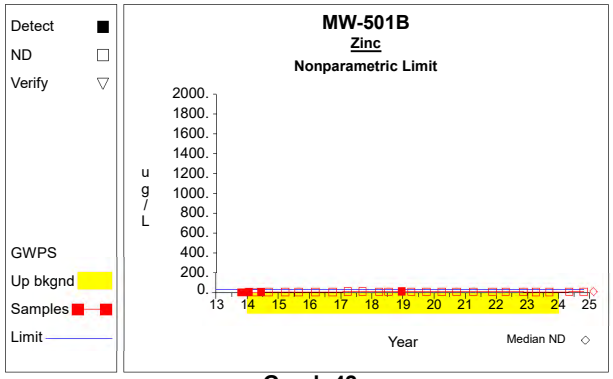
Graph 39



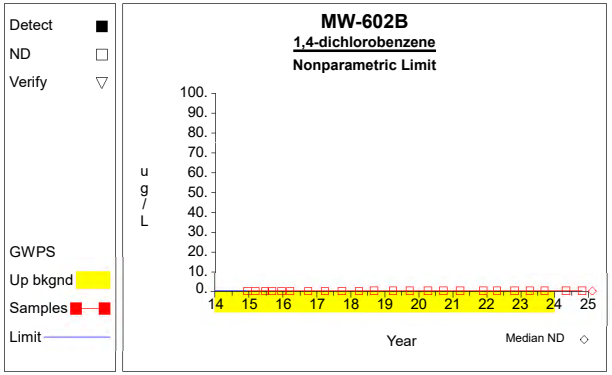
Graph 40



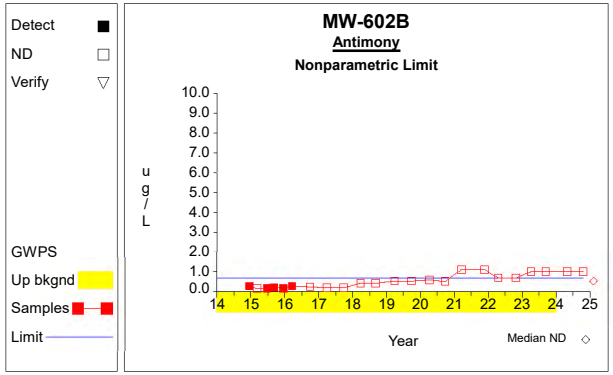
Graph 41



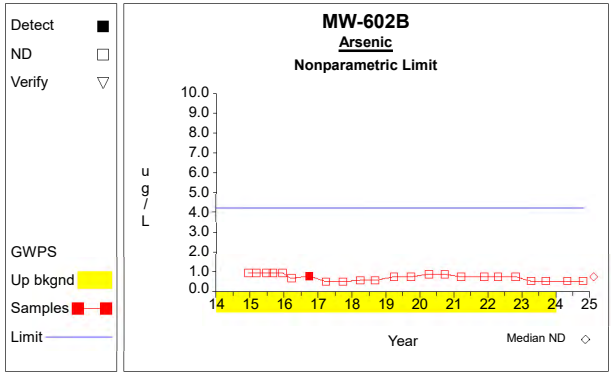
Graph 42



Graph 43

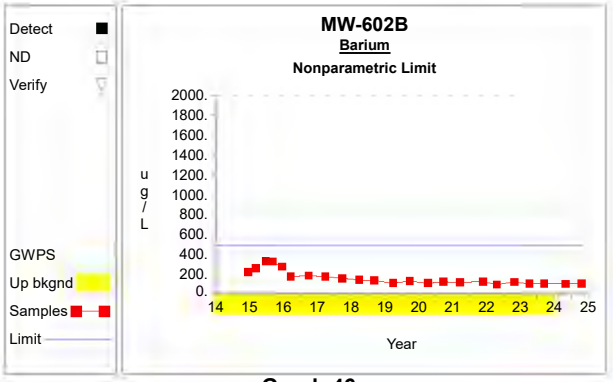


Graph 44

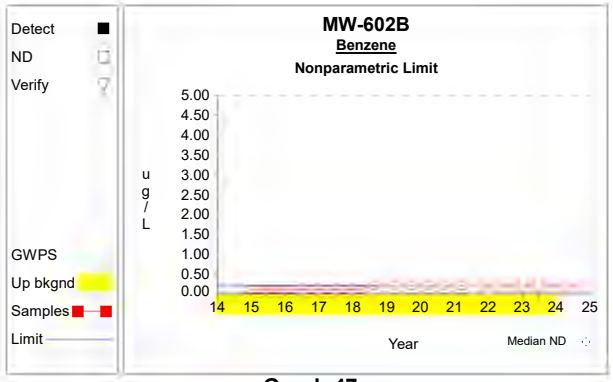


Graph 45

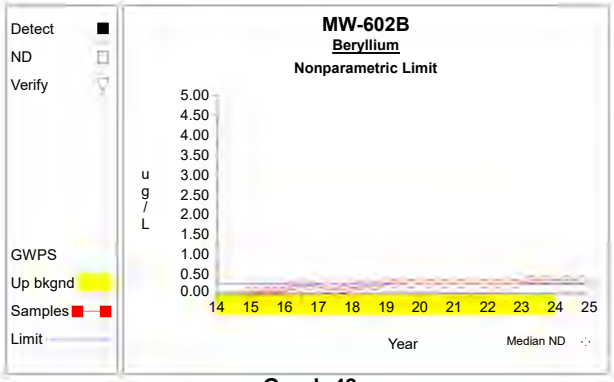
Up vs. Down Prediction Limits



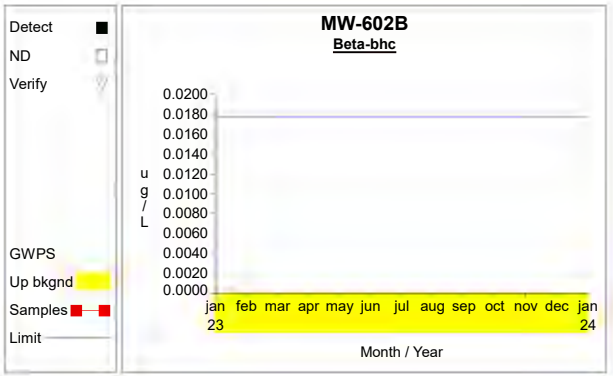
Graph 46



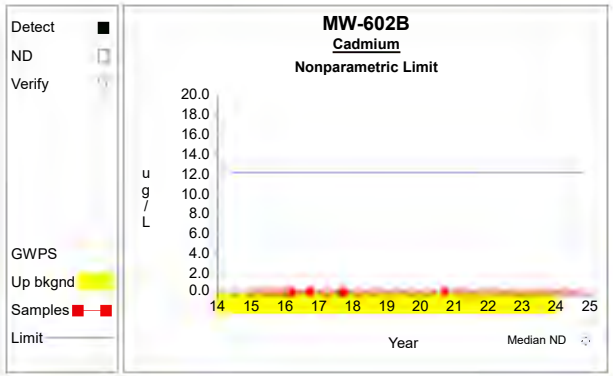
Graph 47



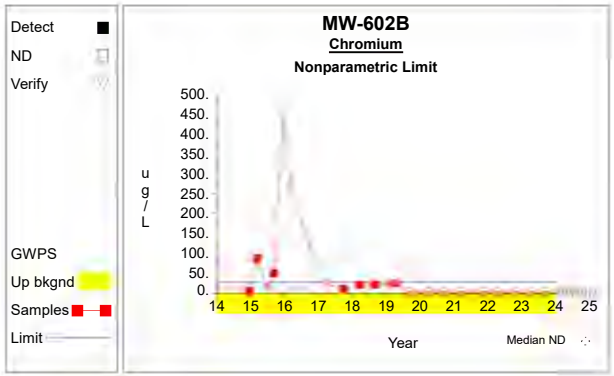
Graph 48



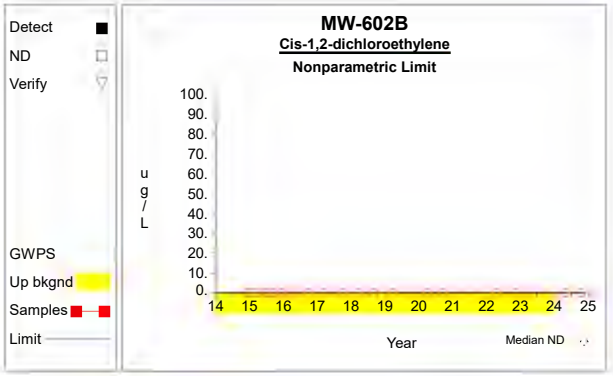
Graph 49



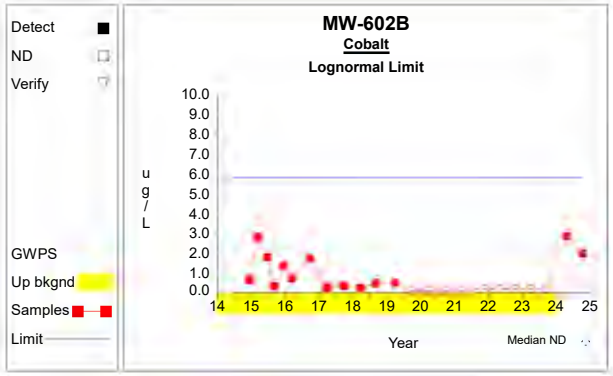
Graph 50



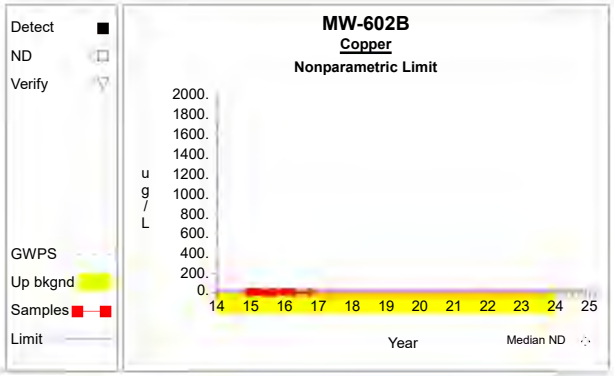
Graph 51



Graph 52

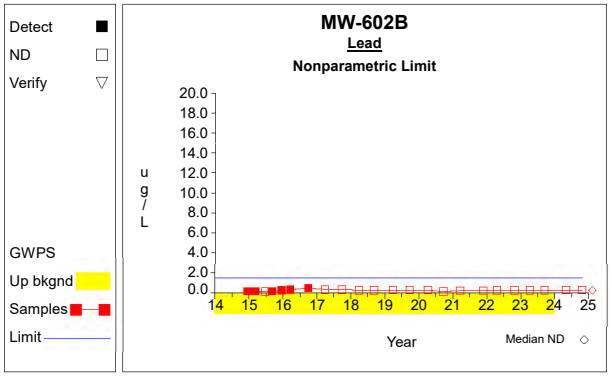


Graph 53

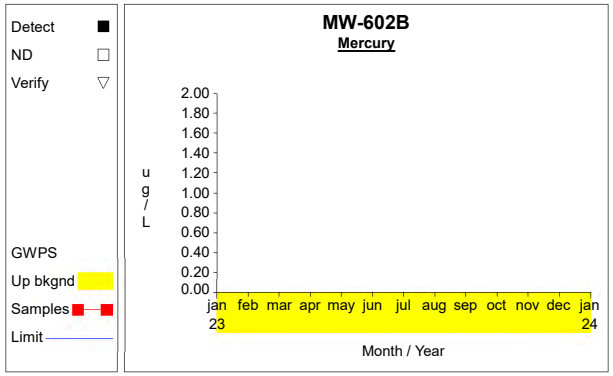


Graph 54

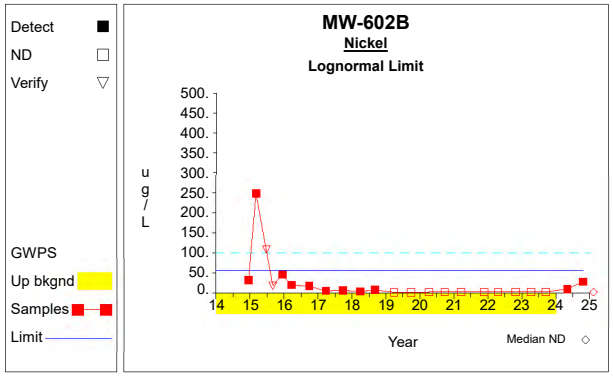
Up vs. Down Prediction Limits



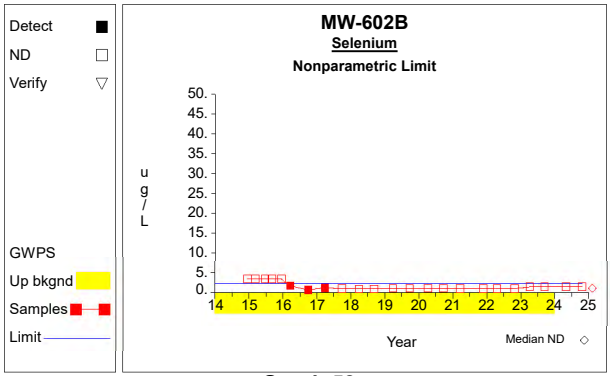
Graph 55



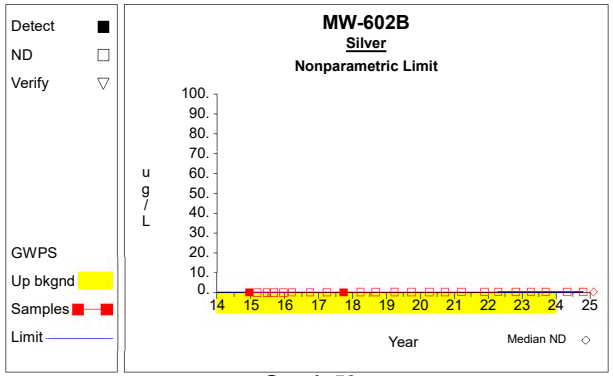
Graph 56



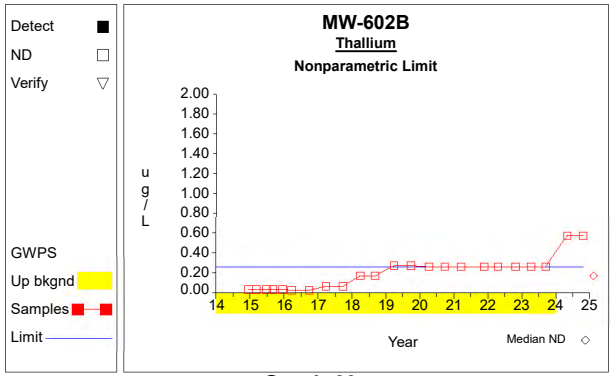
Graph 57



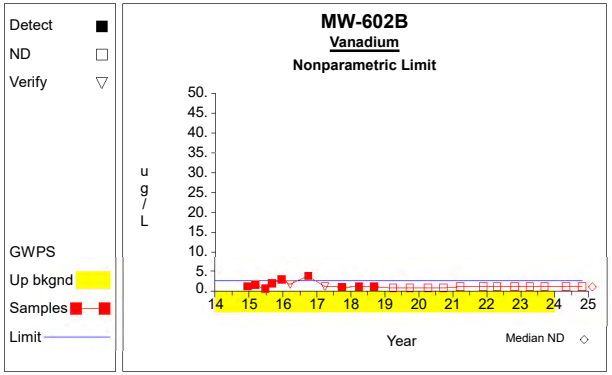
Graph 58



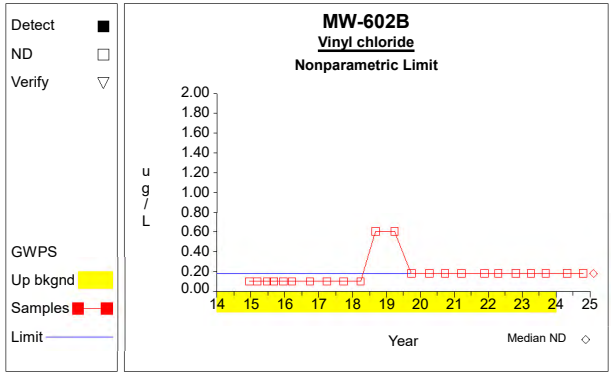
Graph 59



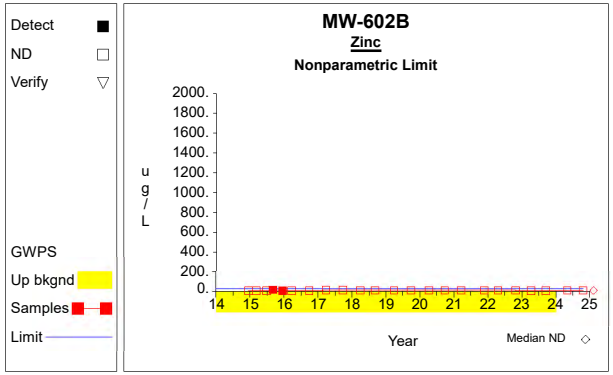
Graph 60



Graph 61

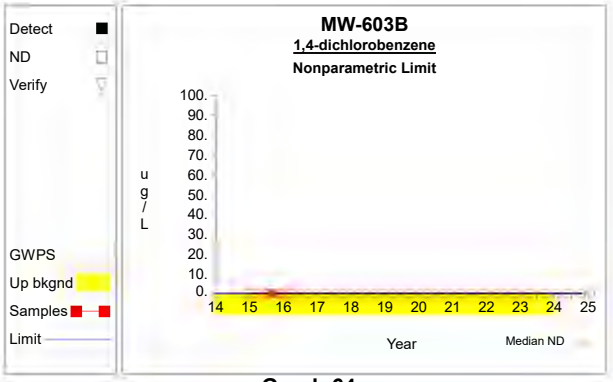


Graph 62

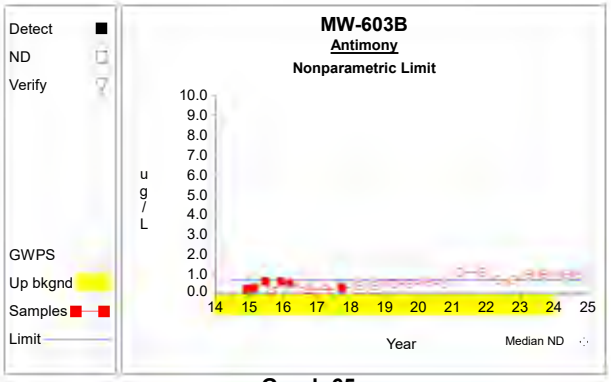


Graph 63

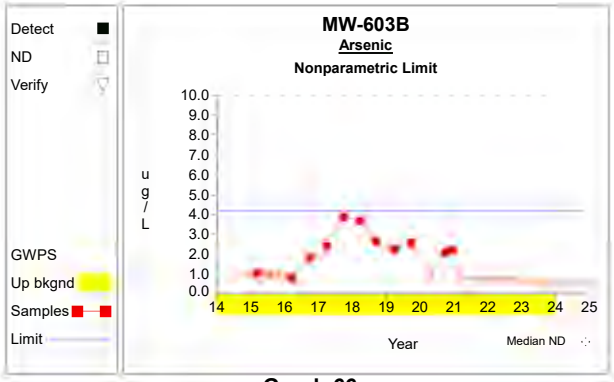
Up vs. Down Prediction Limits



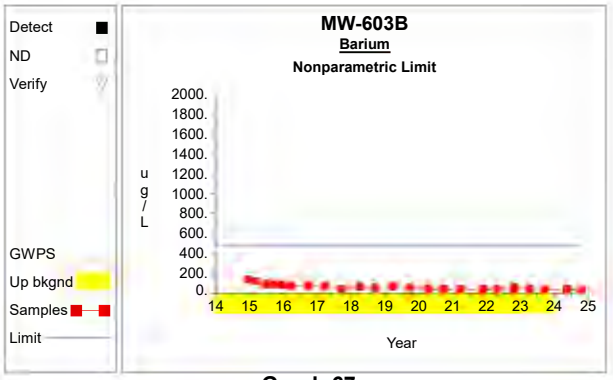
Graph 64



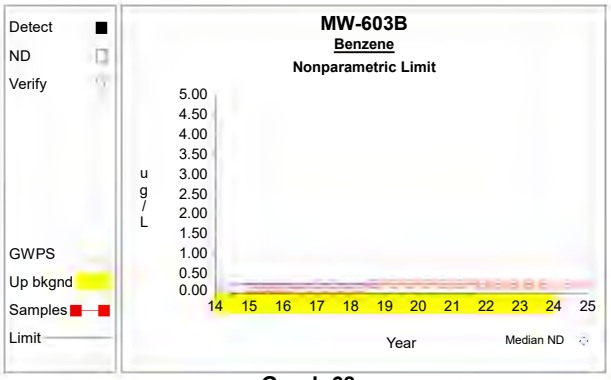
Graph 65



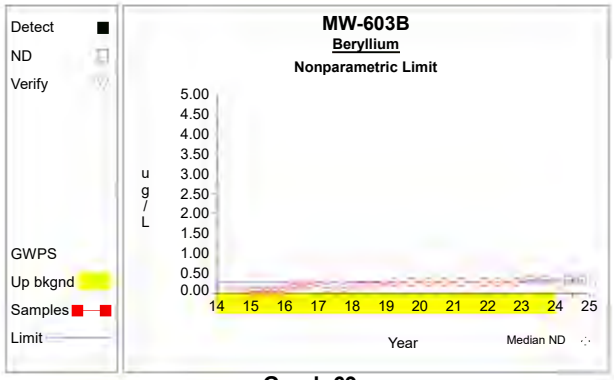
Graph 66



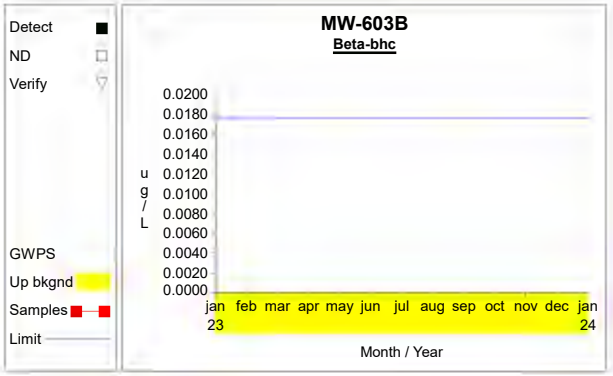
Graph 67



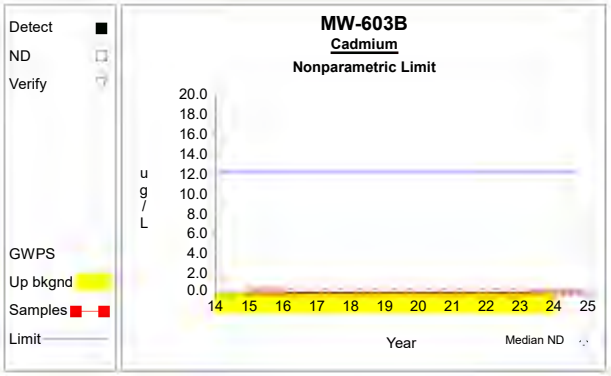
Graph 68



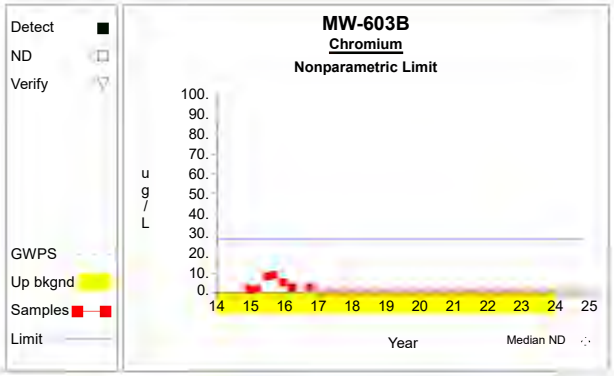
Graph 69



Graph 70

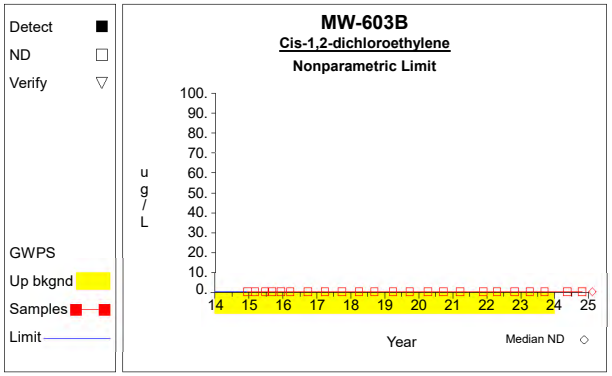


Graph 71

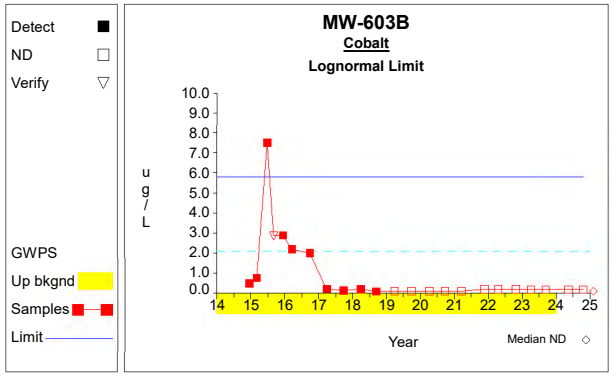


Graph 72

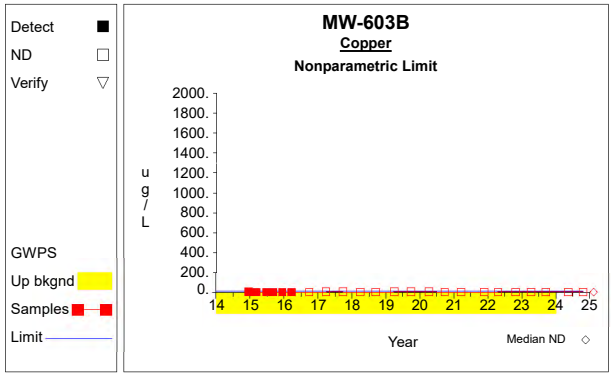
Up vs. Down Prediction Limits



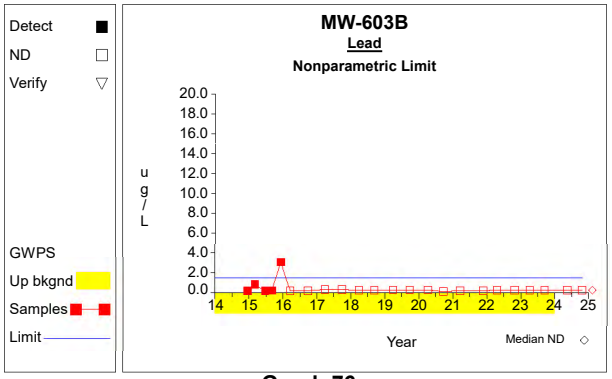
Graph 73



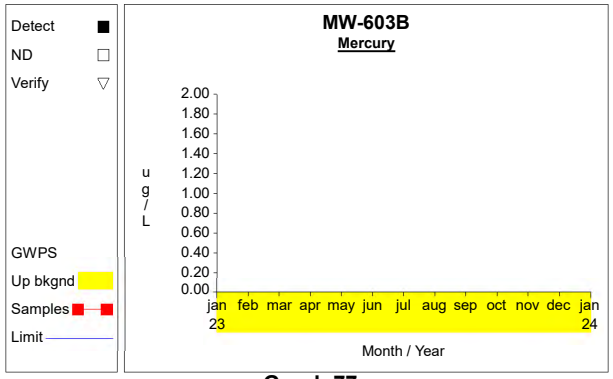
Graph 74



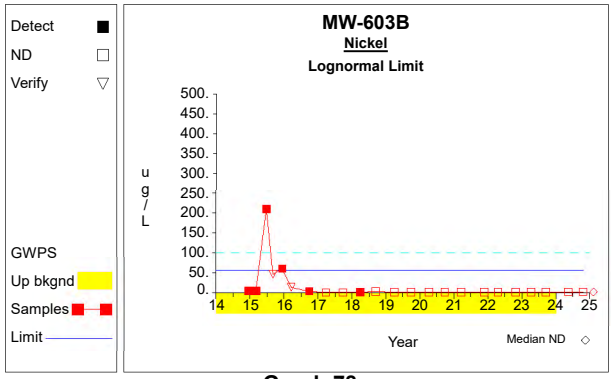
Graph 75



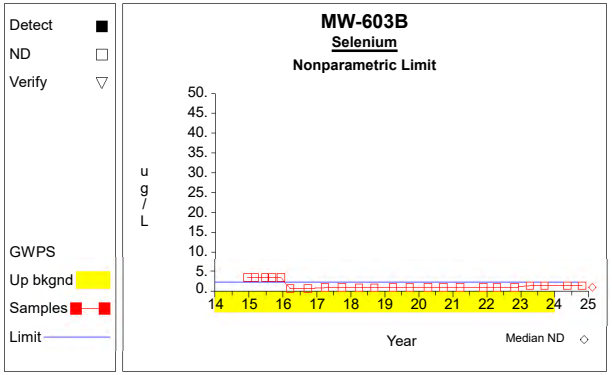
Graph 76



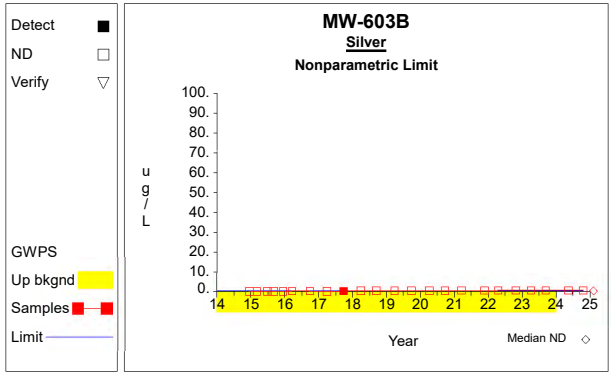
Graph 77



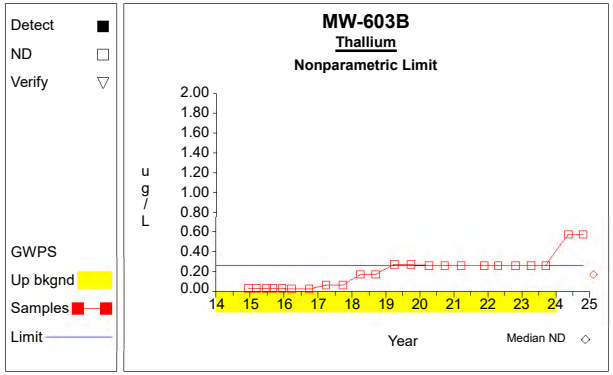
Graph 78



Graph 79

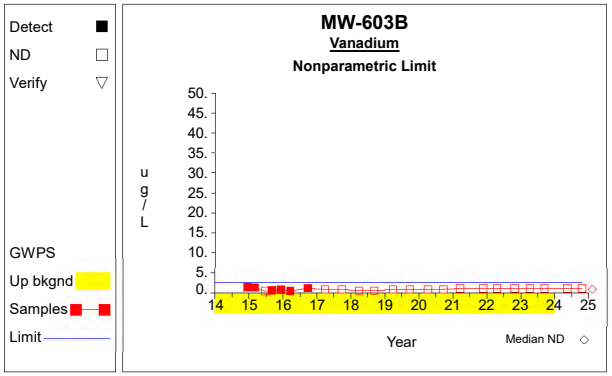


Graph 80

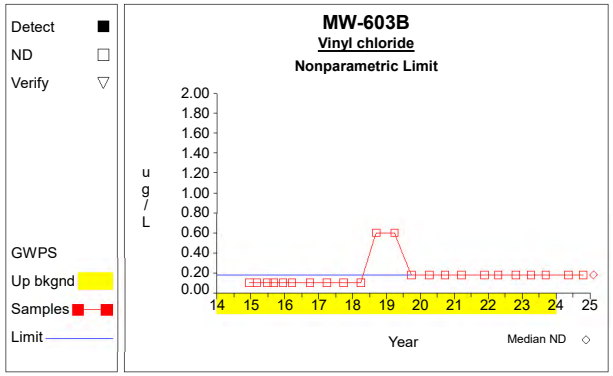


Graph 81

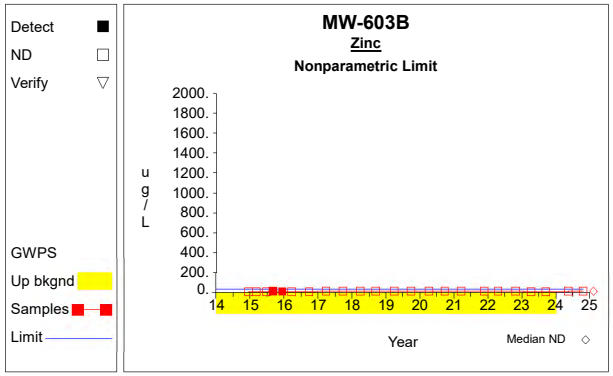
Up vs. Down Prediction Limits



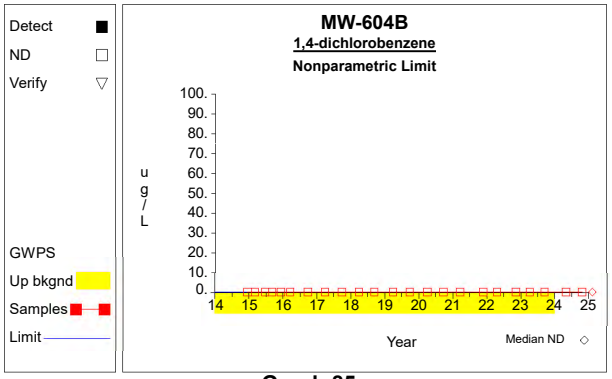
Graph 82



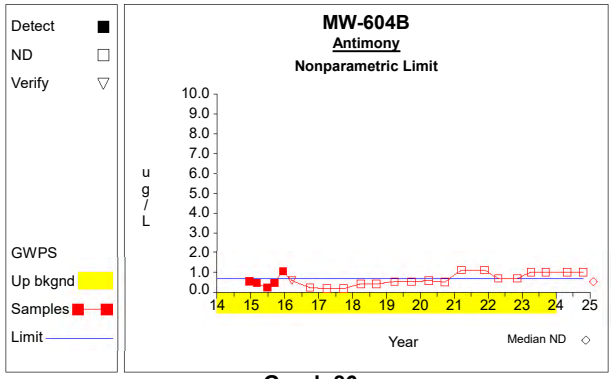
Graph 83



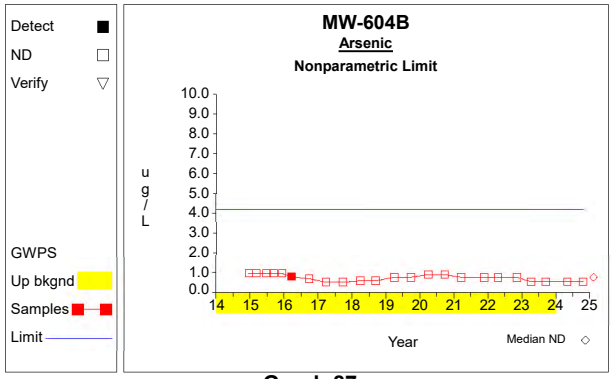
Graph 84



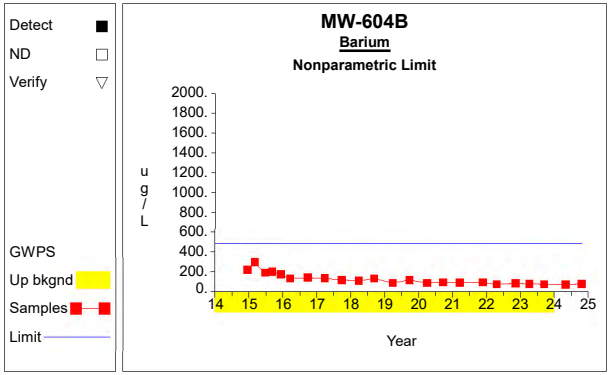
Graph 85



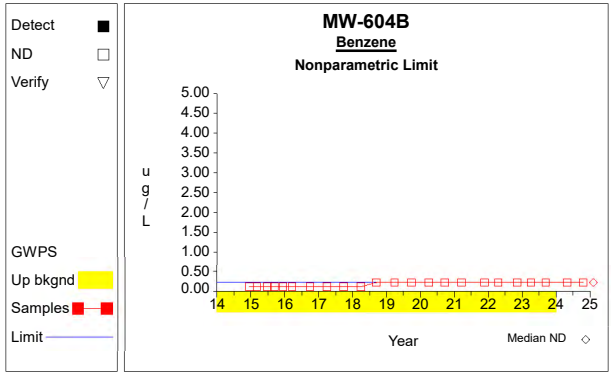
Graph 86



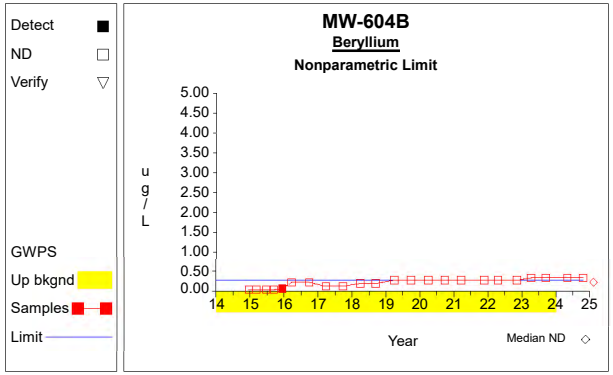
Graph 87



Graph 88

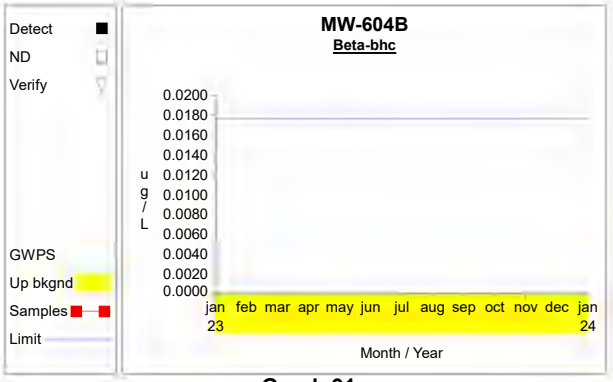


Graph 89

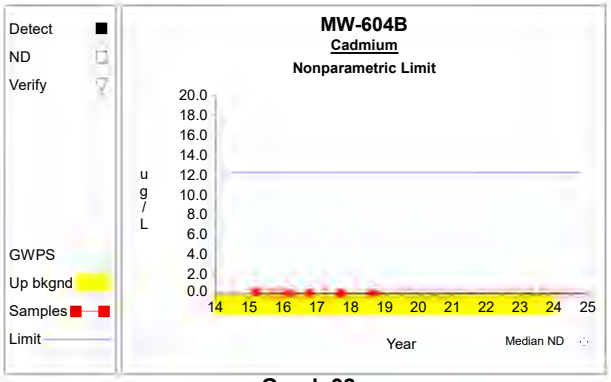


Graph 90

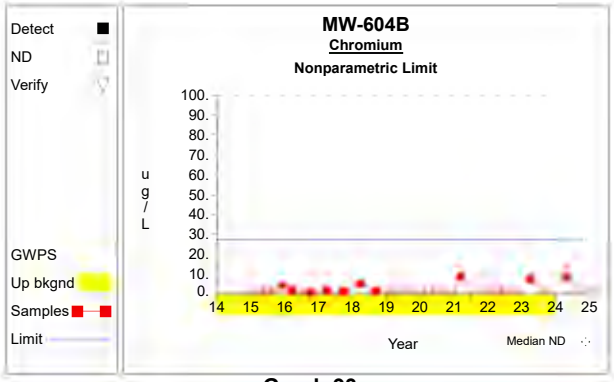
Up vs. Down Prediction Limits



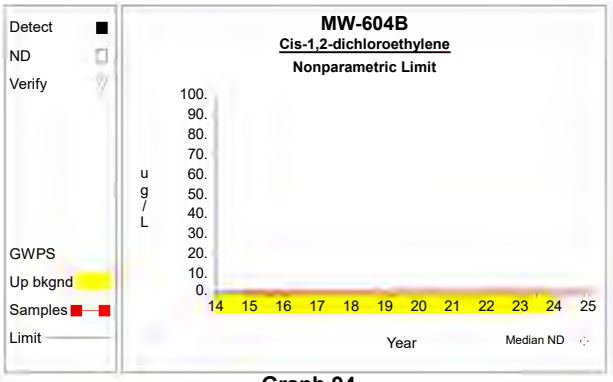
Graph 91



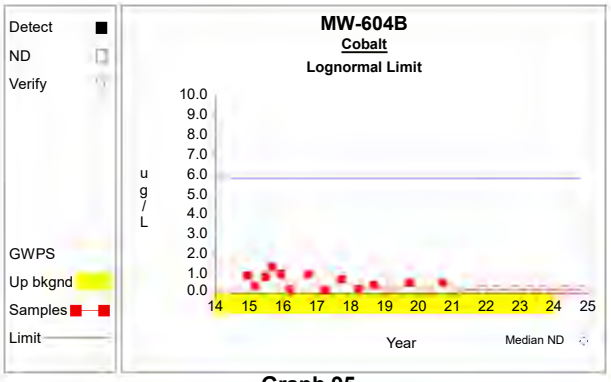
Graph 92



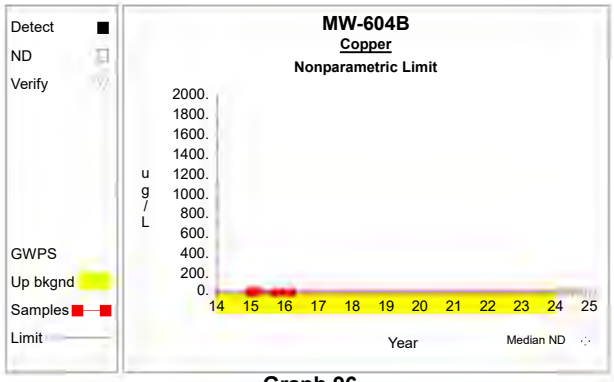
Graph 93



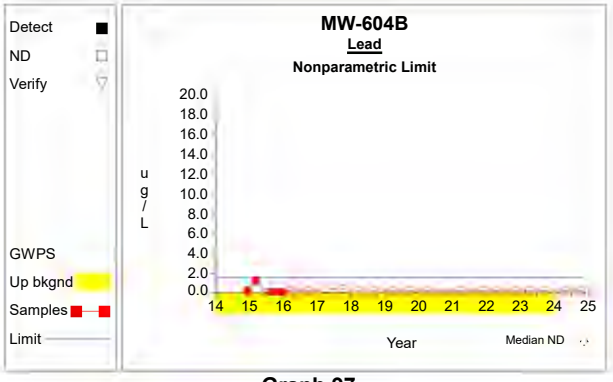
Graph 94



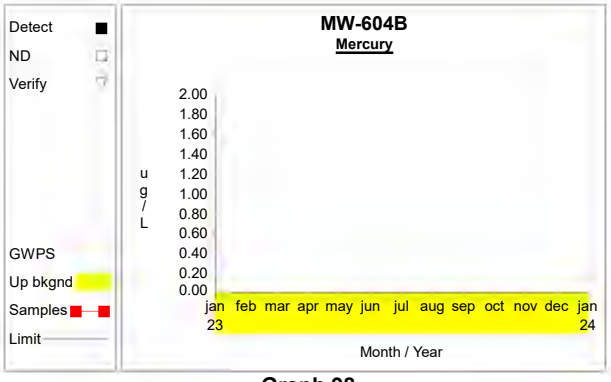
Graph 95



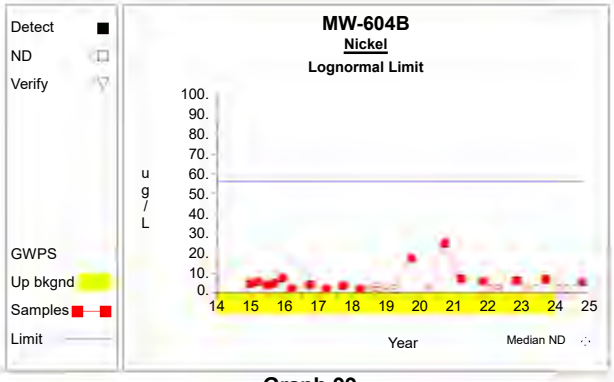
Graph 96



Graph 97

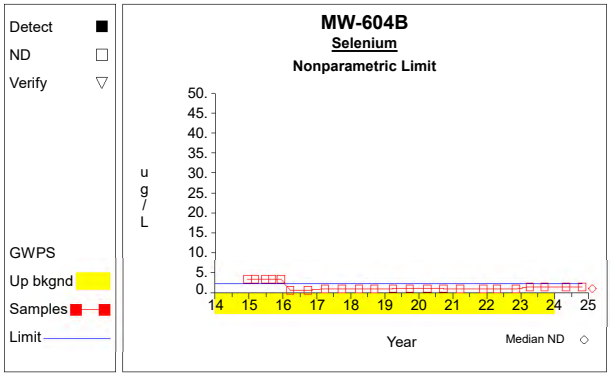


Graph 98

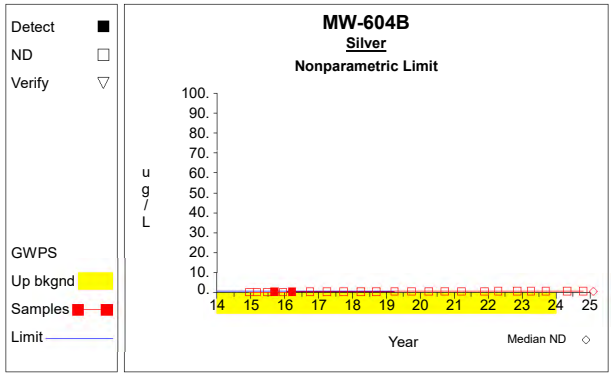


Graph 99

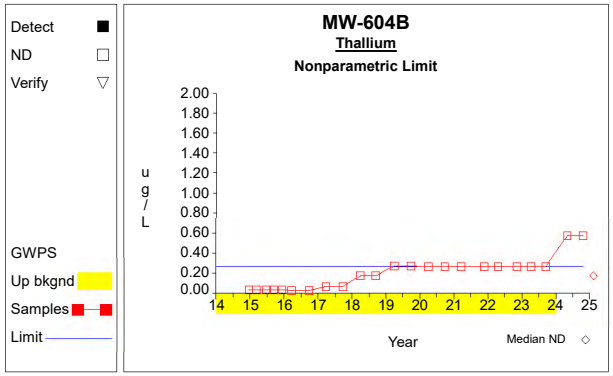
Up vs. Down Prediction Limits



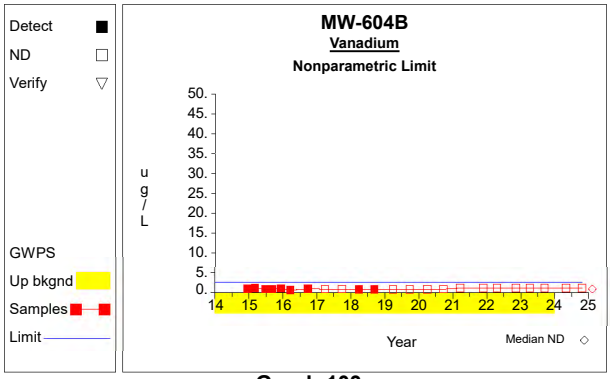
Graph 100



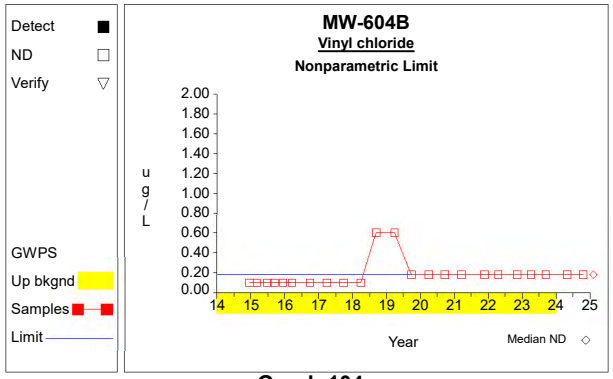
Graph 101



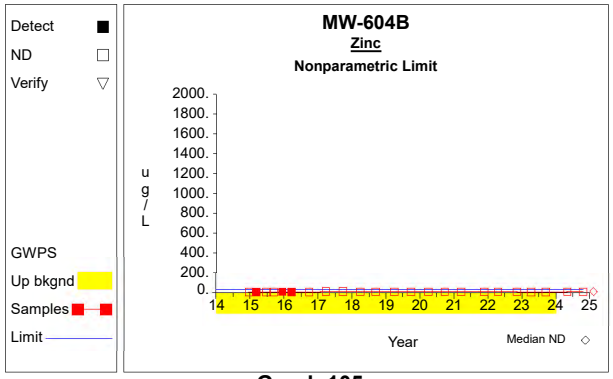
Graph 102



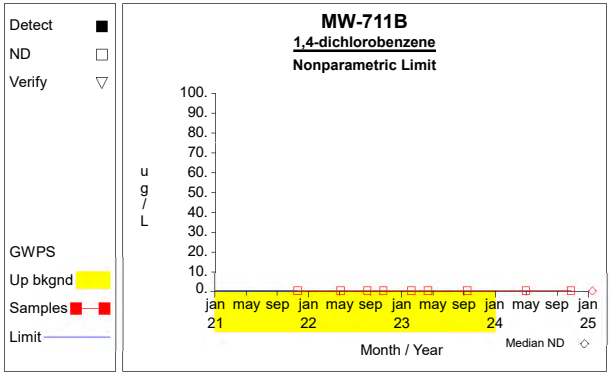
Graph 103



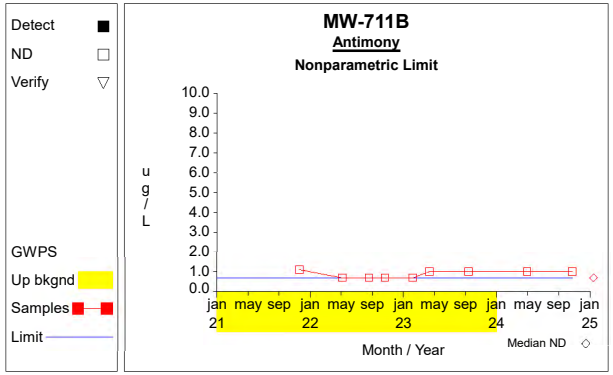
Graph 104



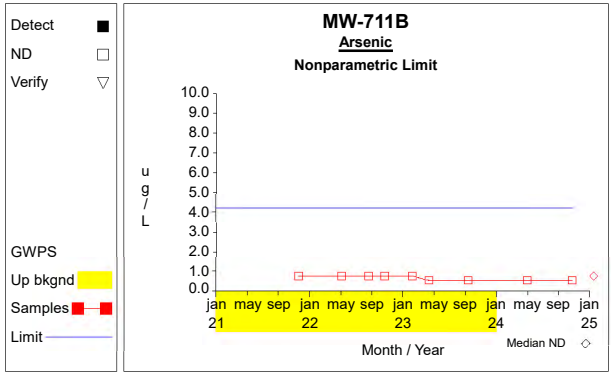
Graph 105



Graph 106

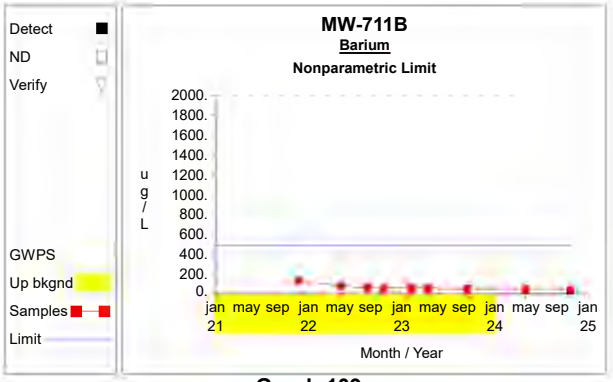


Graph 107

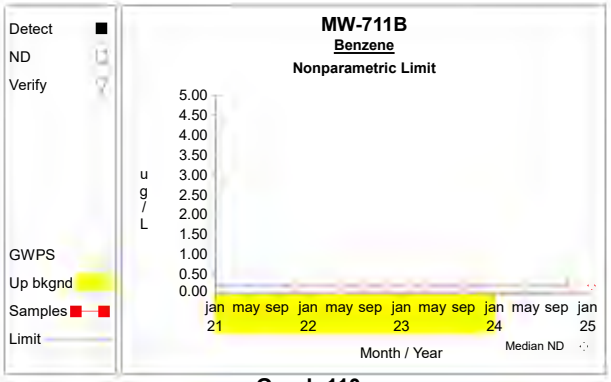


Graph 108

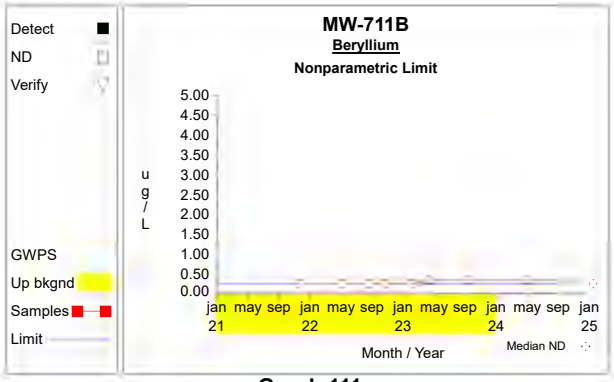
Up vs. Down Prediction Limits



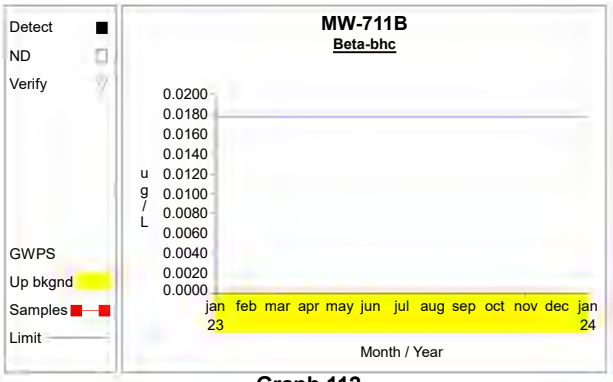
Graph 109



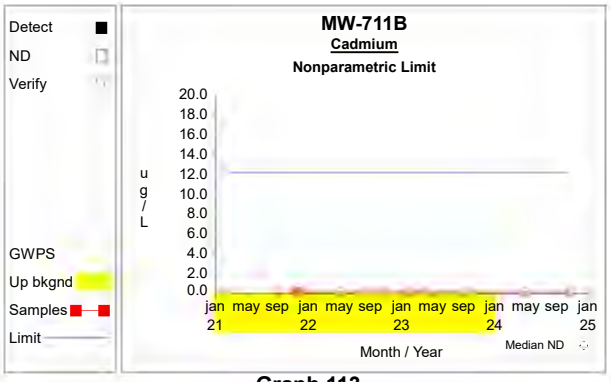
Graph 110



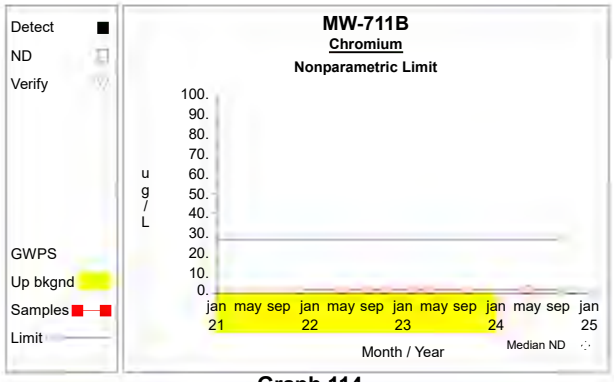
Graph 111



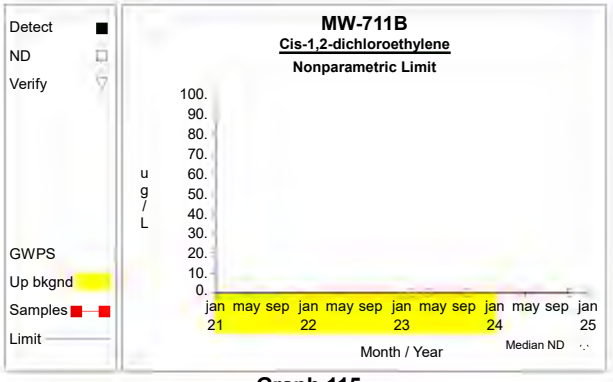
Graph 112



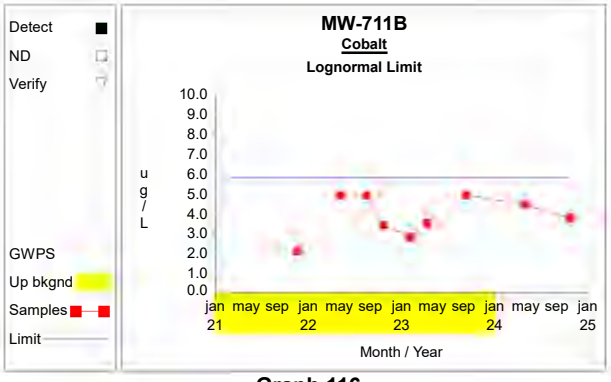
Graph 113



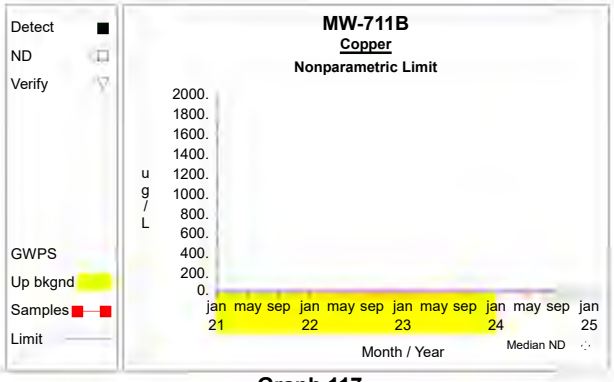
Graph 114



Graph 115

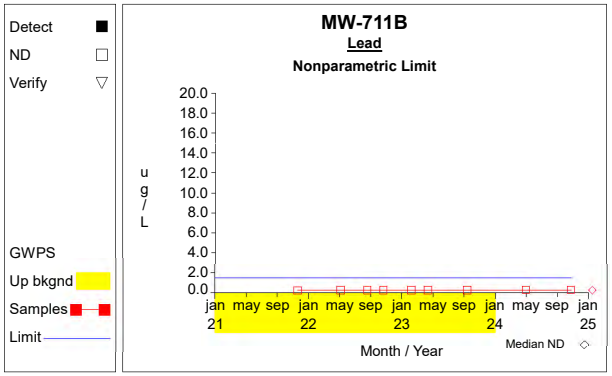


Graph 116

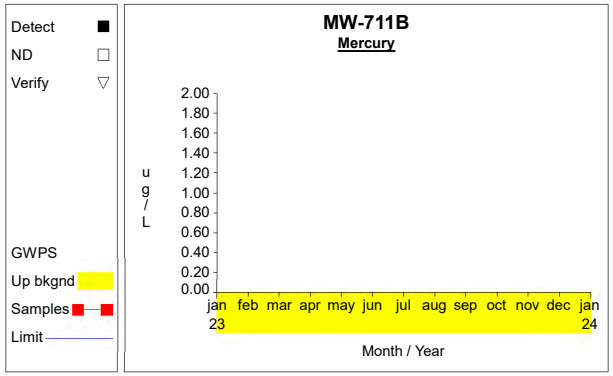


Graph 117

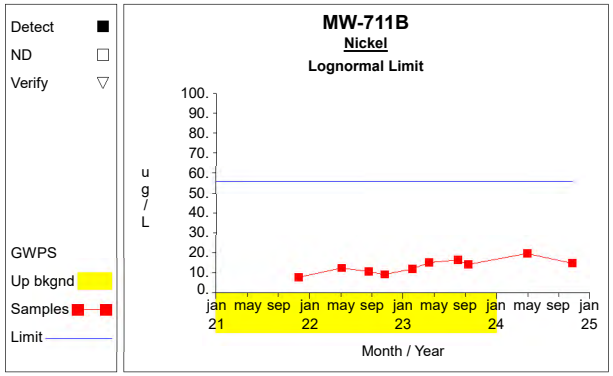
Up vs. Down Prediction Limits



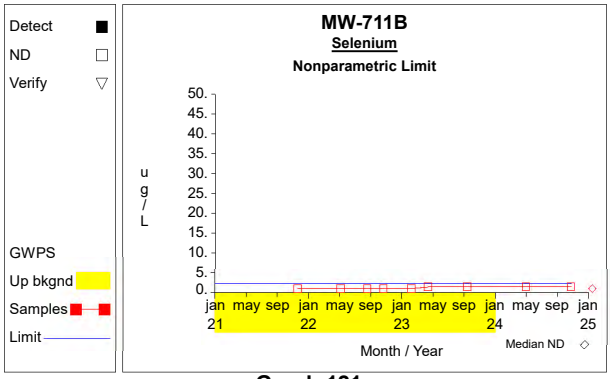
Graph 118



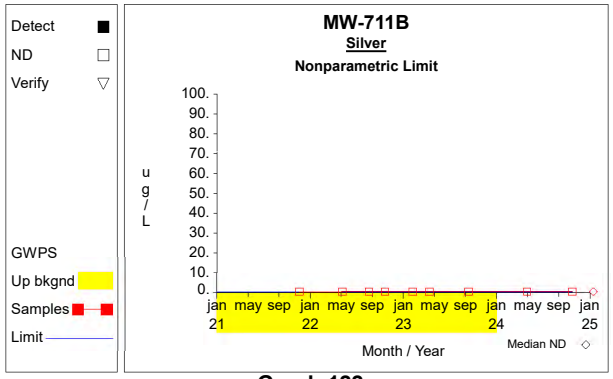
Graph 119



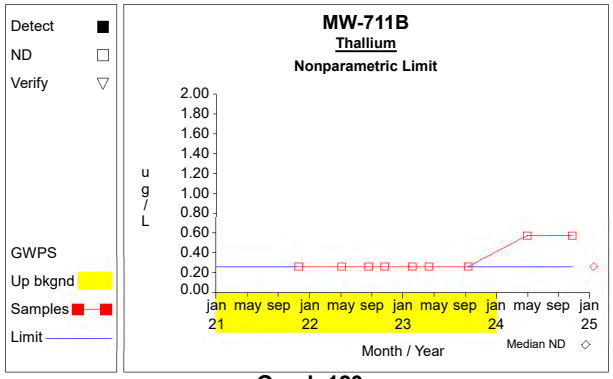
Graph 120



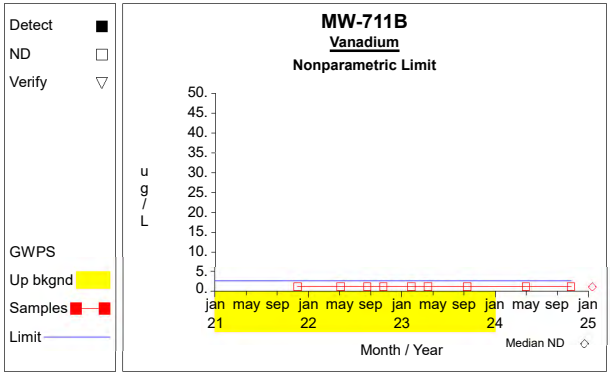
Graph 121



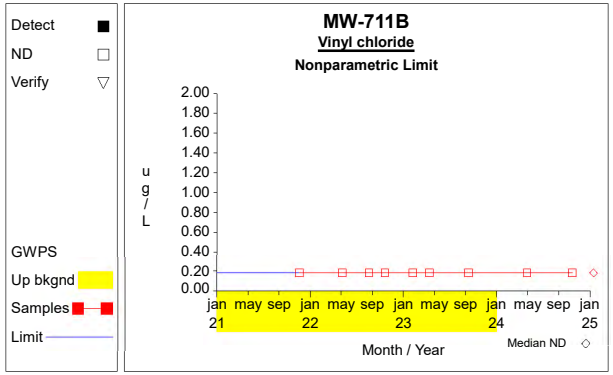
Graph 122



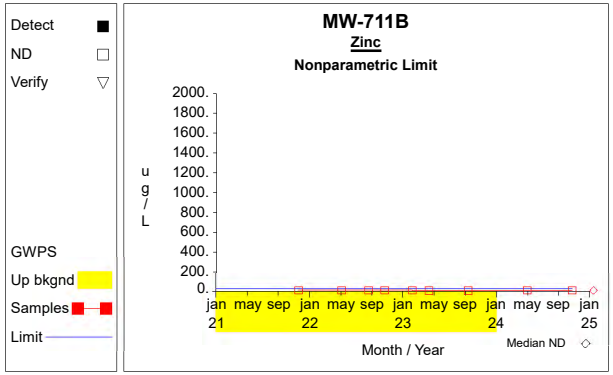
Graph 123



Graph 124

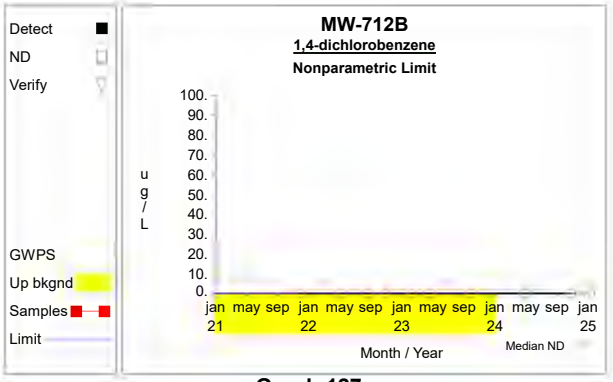


Graph 125

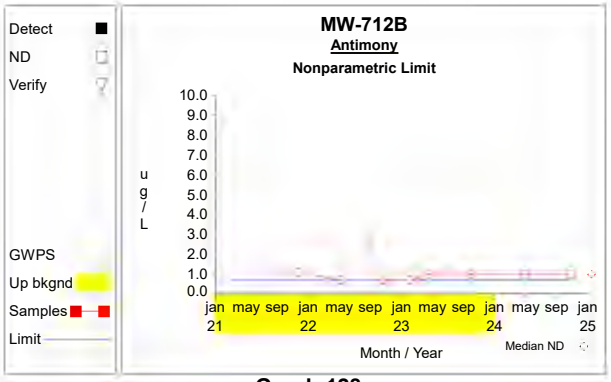


Graph 126

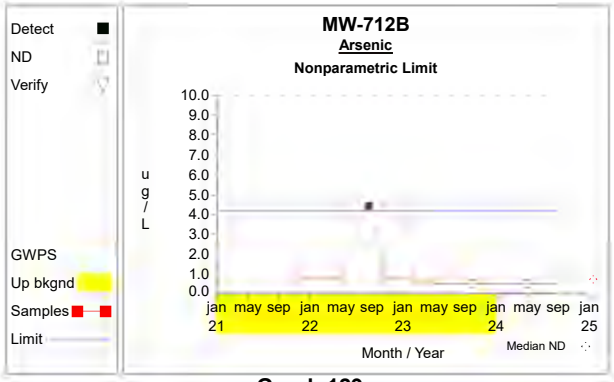
Up vs. Down Prediction Limits



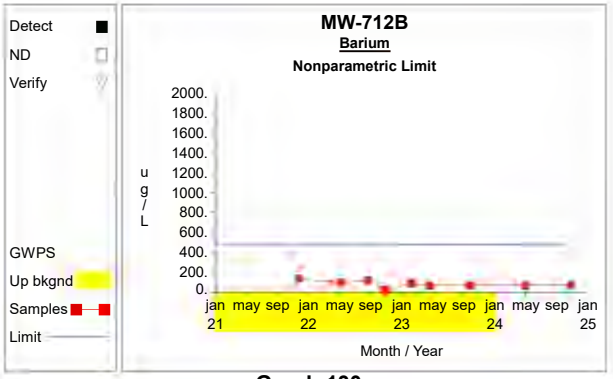
Graph 127



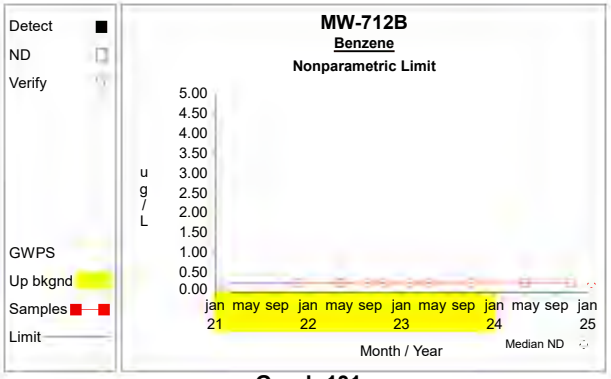
Graph 128



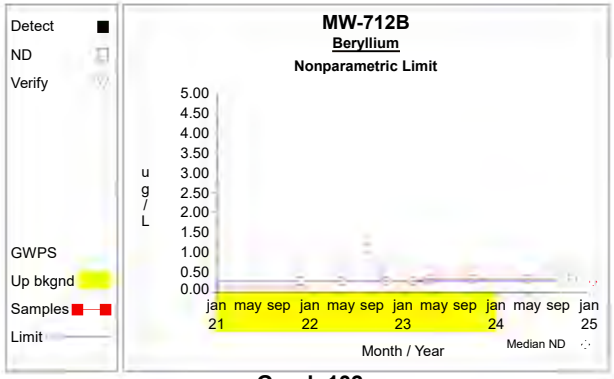
Graph 129



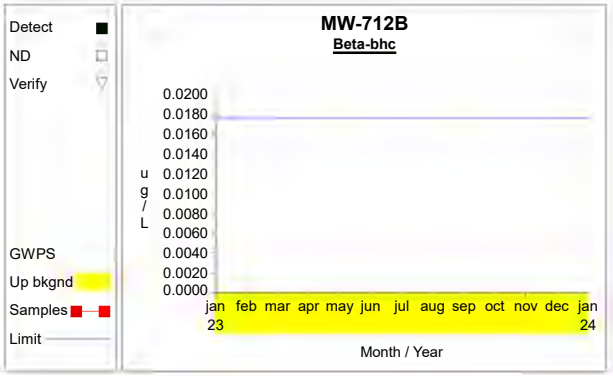
Graph 130



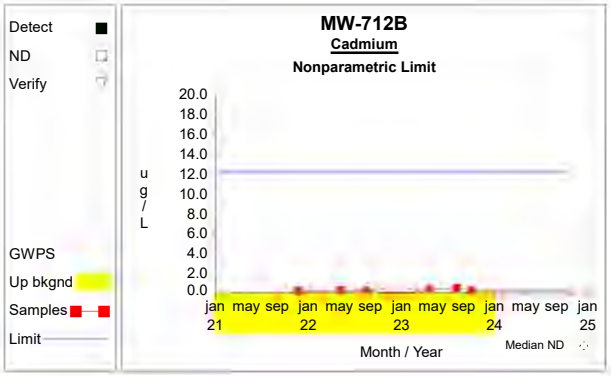
Graph 131



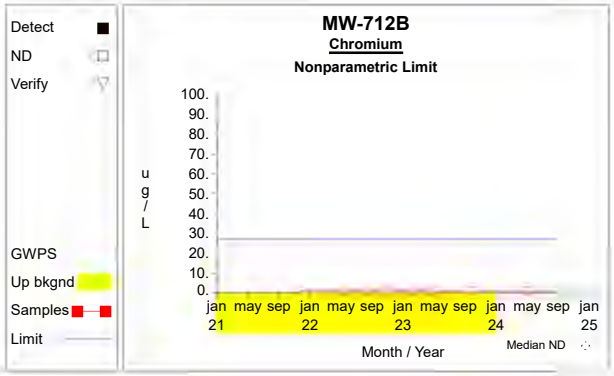
Graph 132



Graph 133

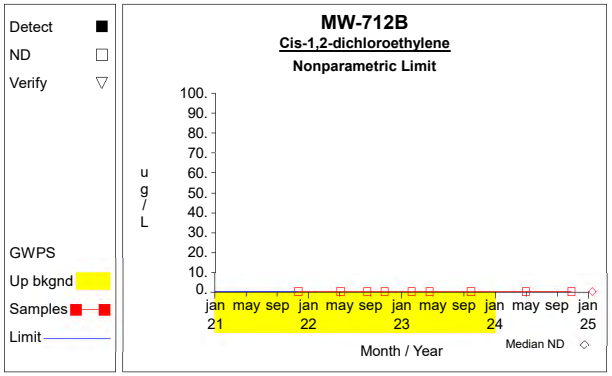


Graph 134

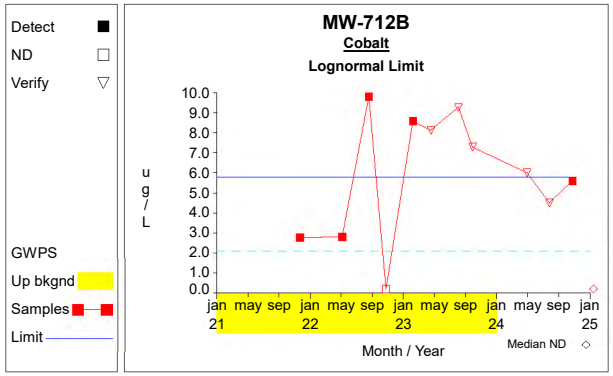


Graph 135

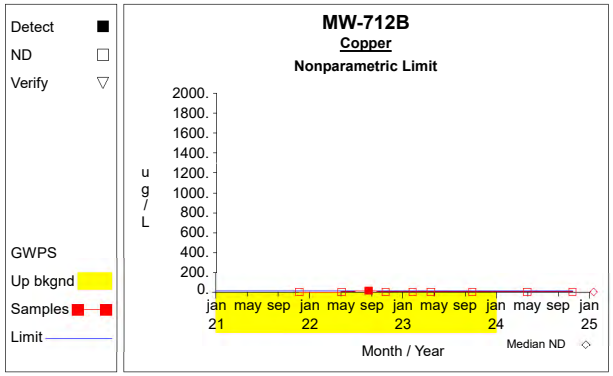
Up vs. Down Prediction Limits



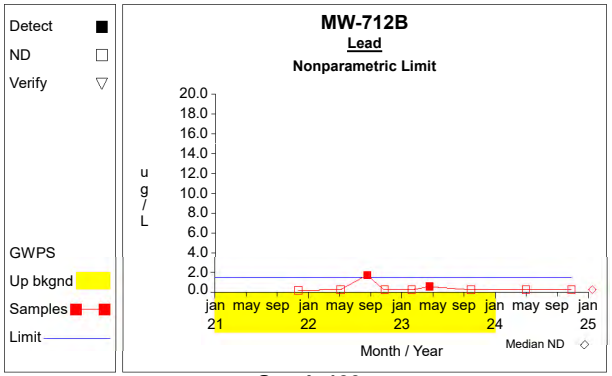
Graph 136



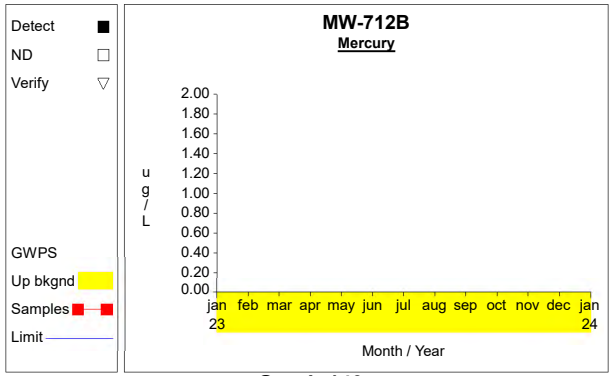
Graph 137



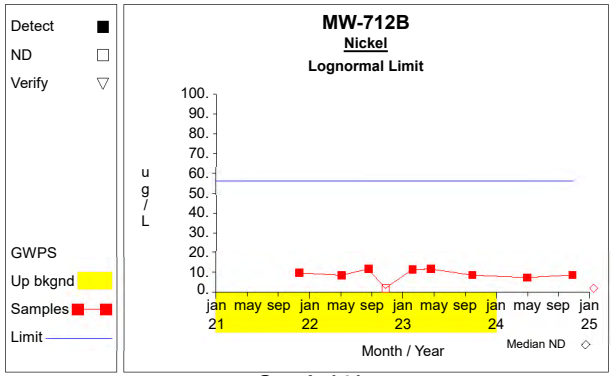
Graph 138



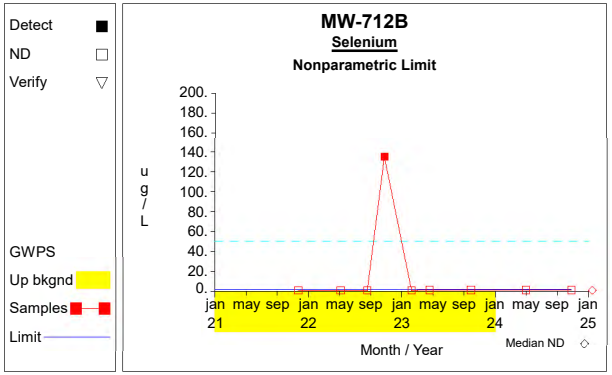
Graph 139



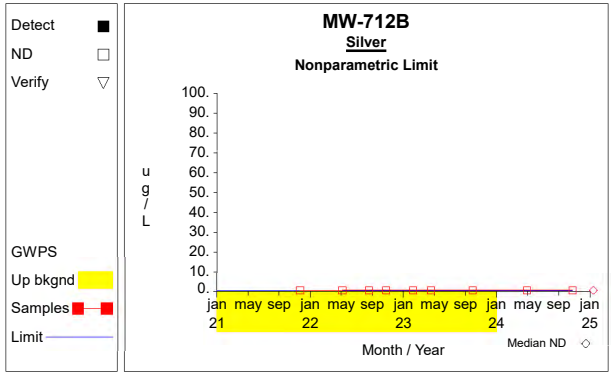
Graph 140



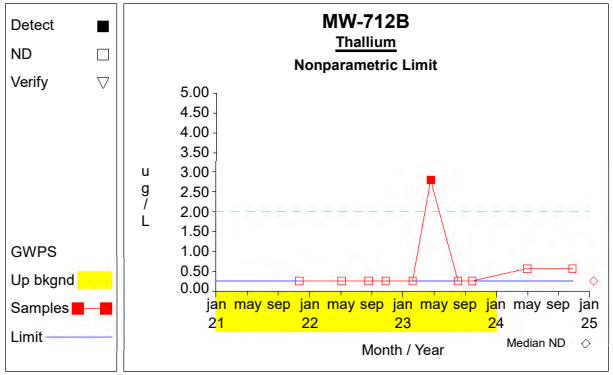
Graph 141



Graph 142

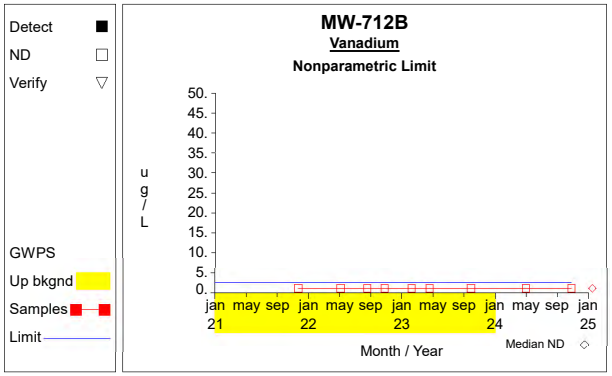


Graph 143

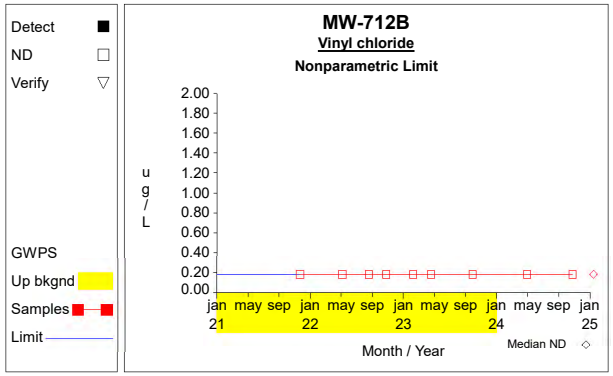


Graph 144

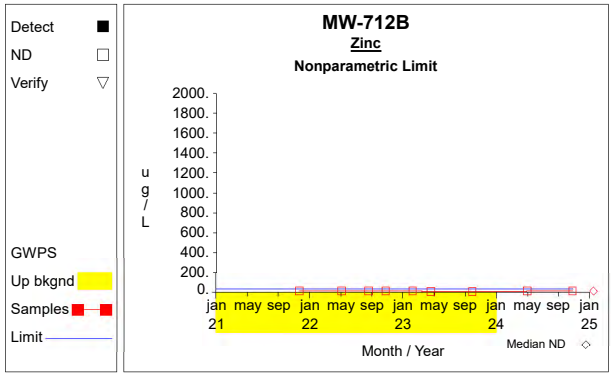
Up vs. Down Prediction Limits



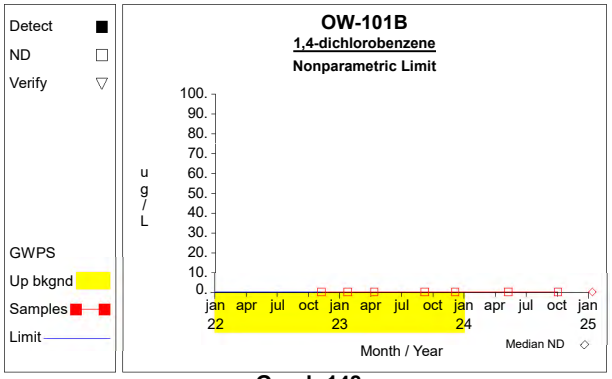
Graph 145



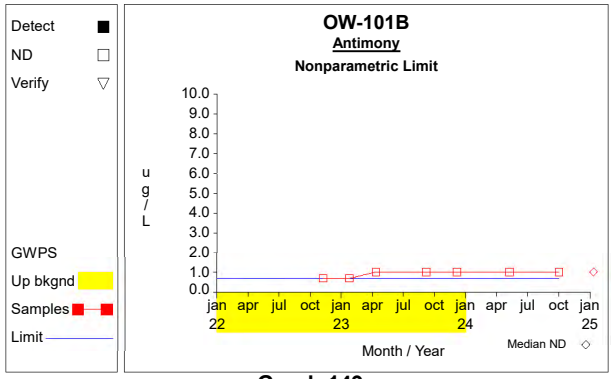
Graph 146



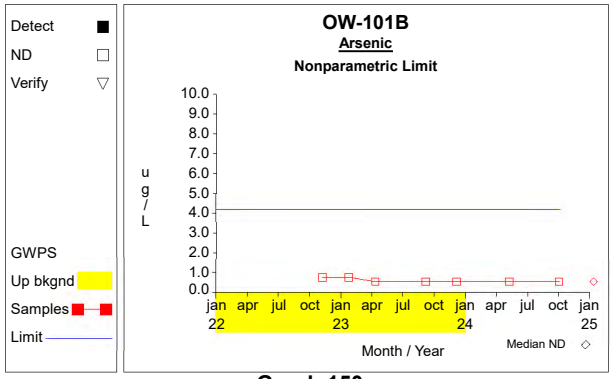
Graph 147



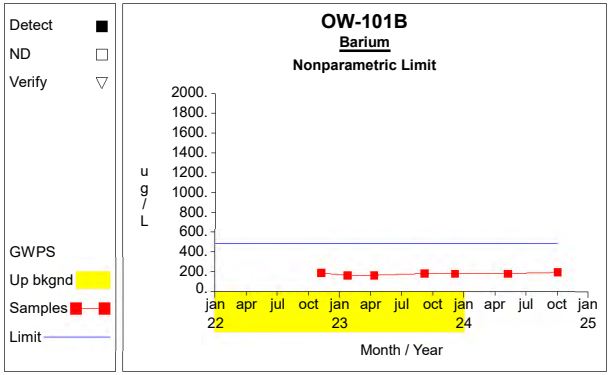
Graph 148



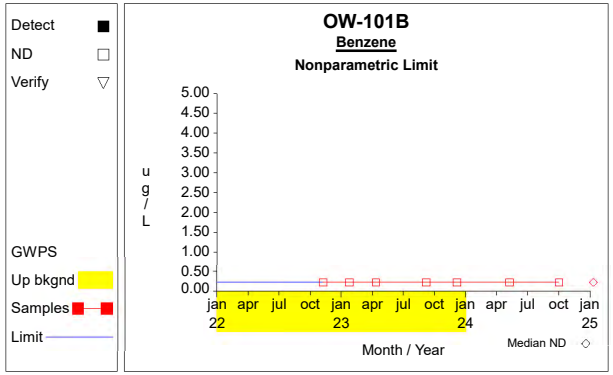
Graph 149



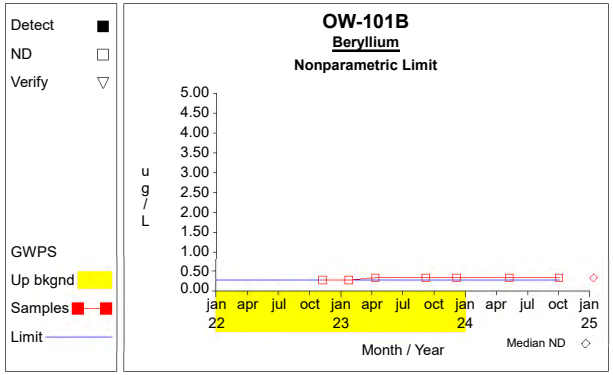
Graph 150



Graph 151

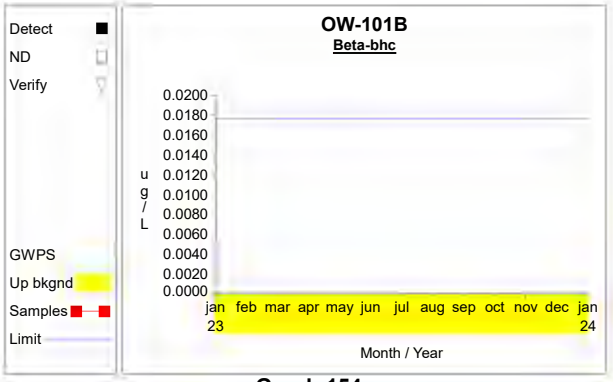


Graph 152

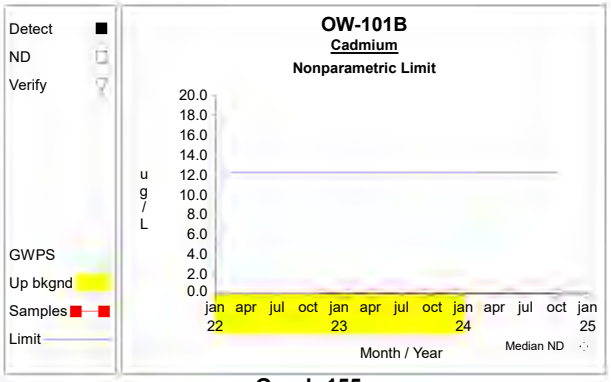


Graph 153

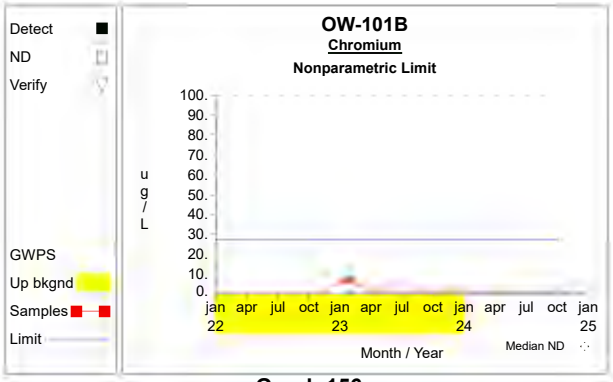
Up vs. Down Prediction Limits



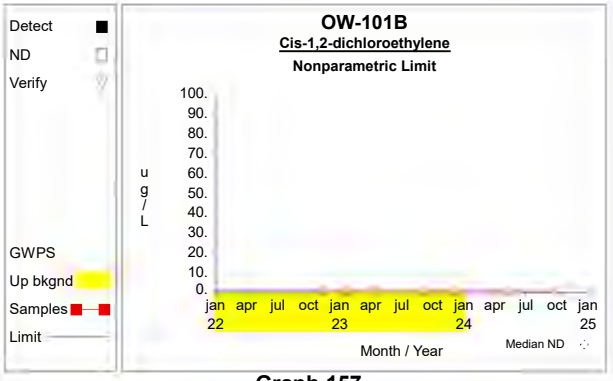
Graph 154



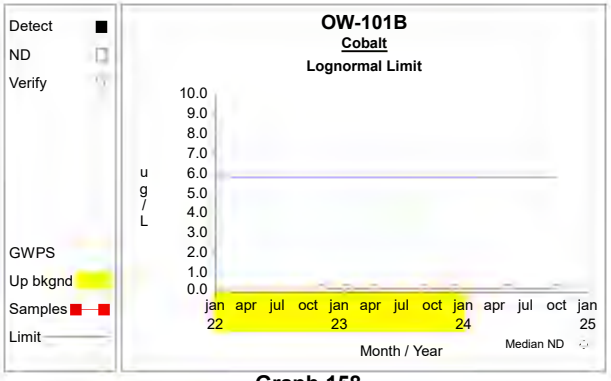
Graph 155



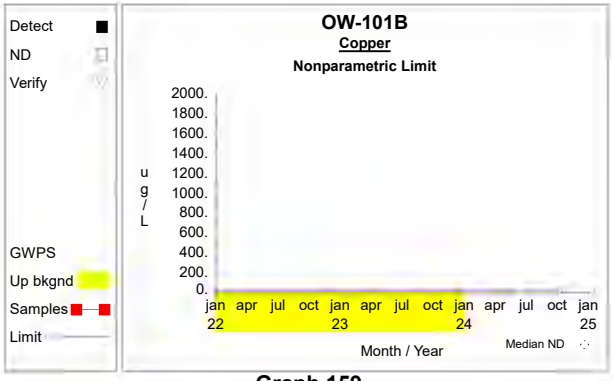
Graph 156



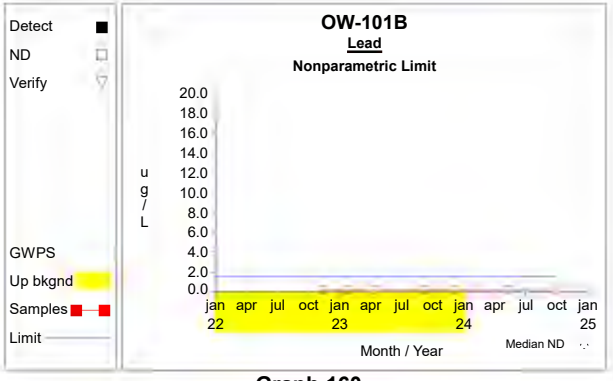
Graph 157



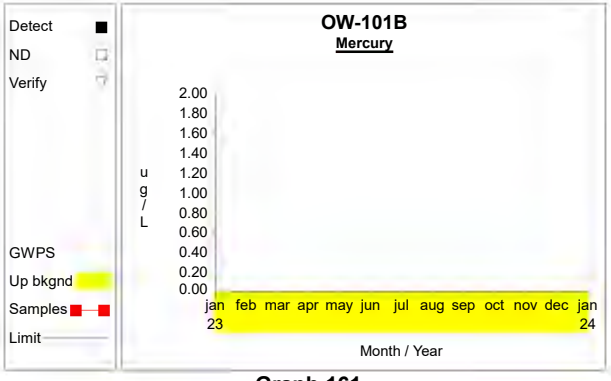
Graph 158



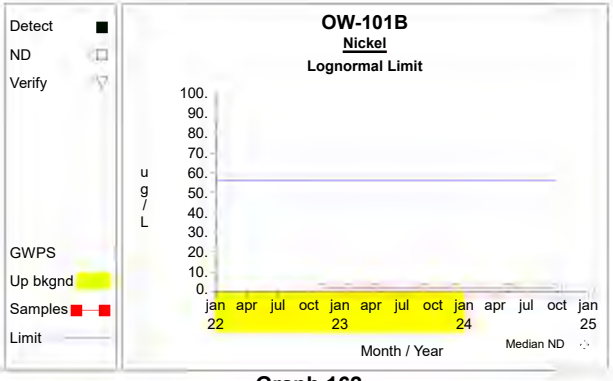
Graph 159



Graph 160

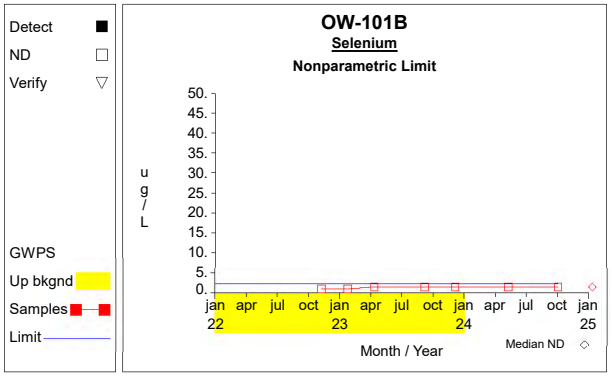


Graph 161

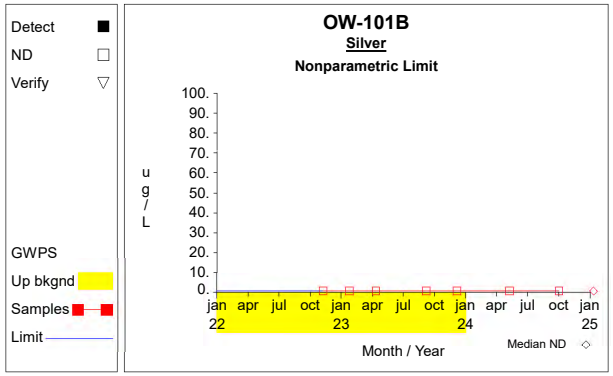


Graph 162

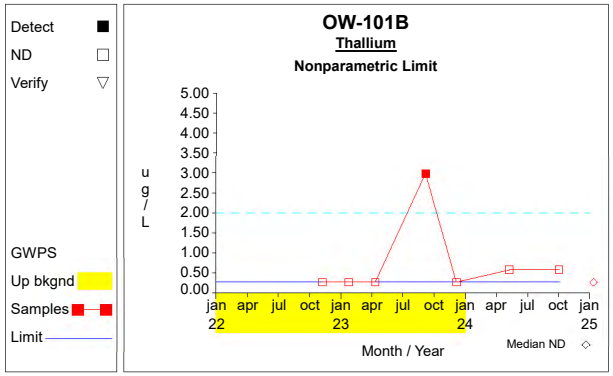
Up vs. Down Prediction Limits



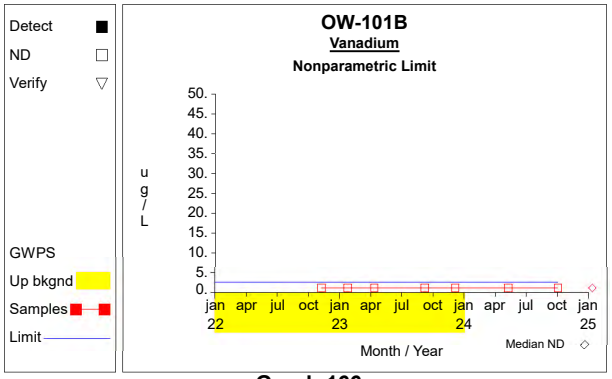
Graph 163



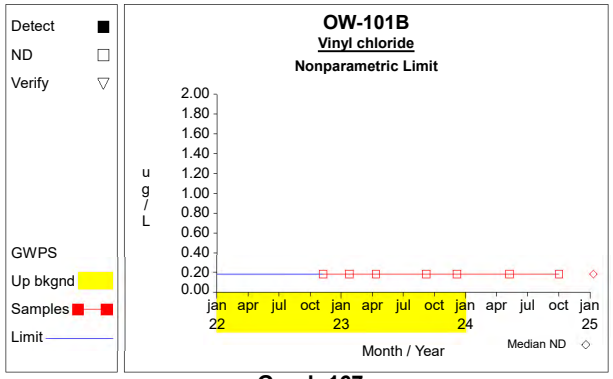
Graph 164



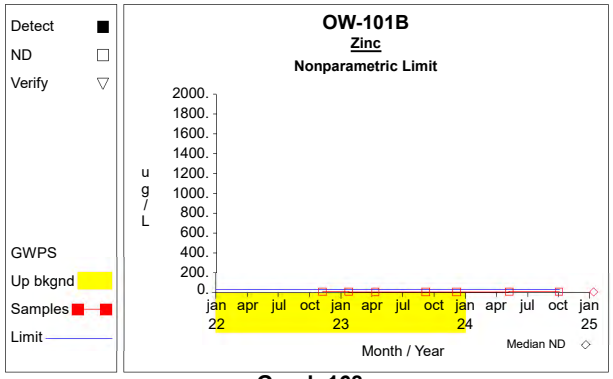
Graph 165



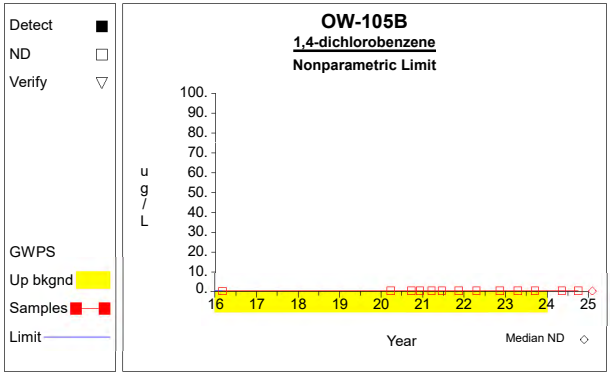
Graph 166



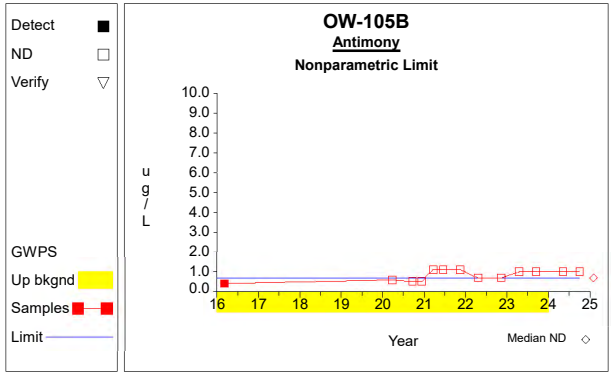
Graph 167



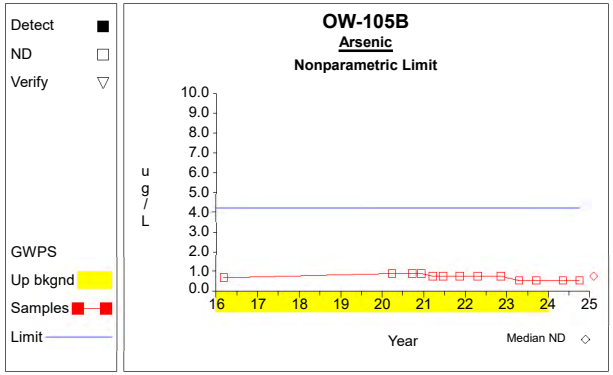
Graph 168



Graph 169

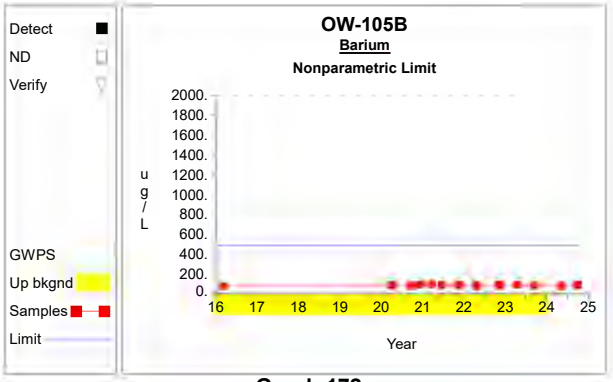


Graph 170

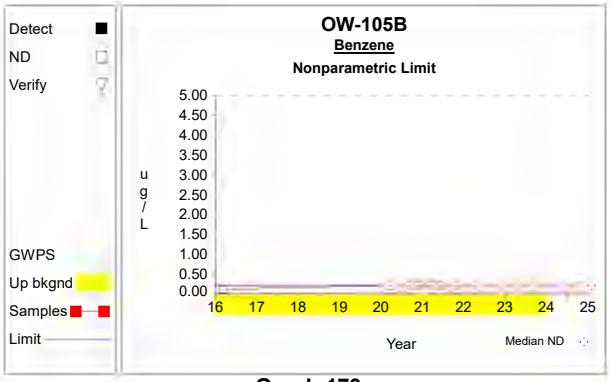


Graph 171

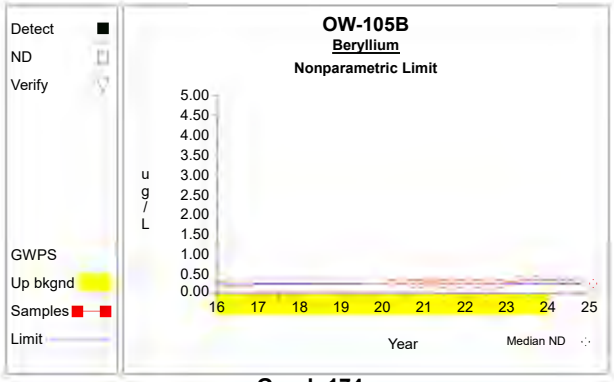
Up vs. Down Prediction Limits



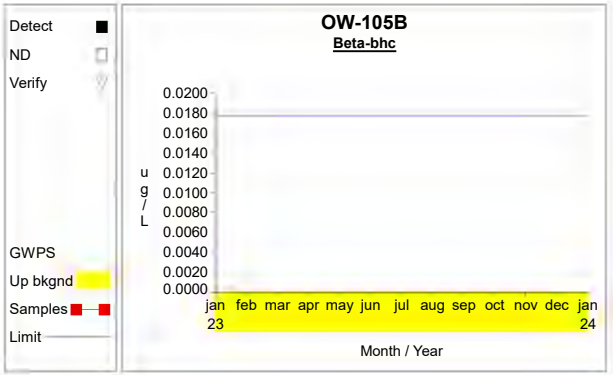
Graph 172



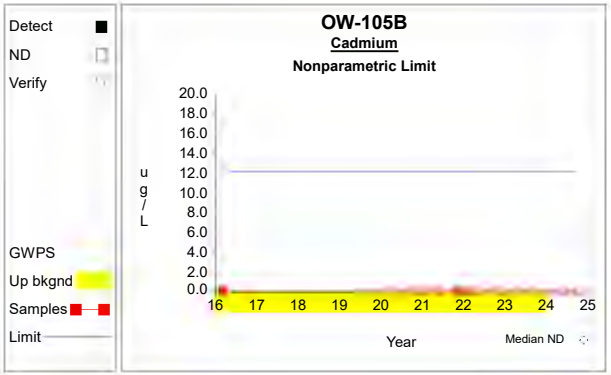
Graph 173



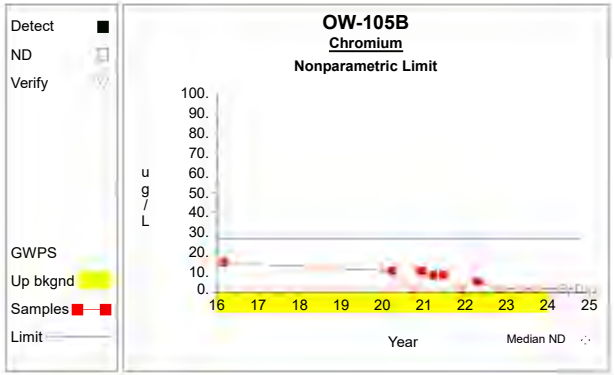
Graph 174



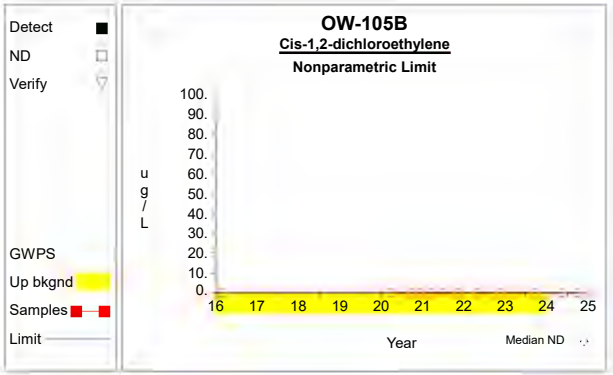
Graph 175



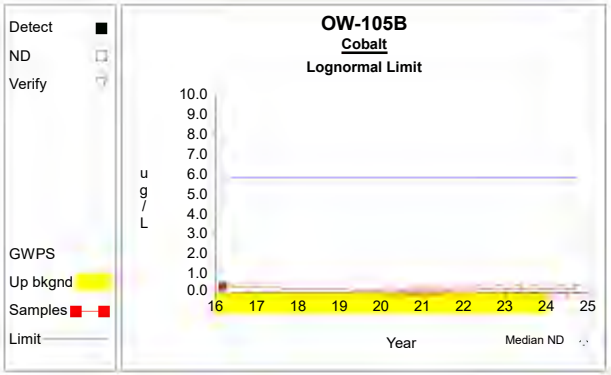
Graph 176



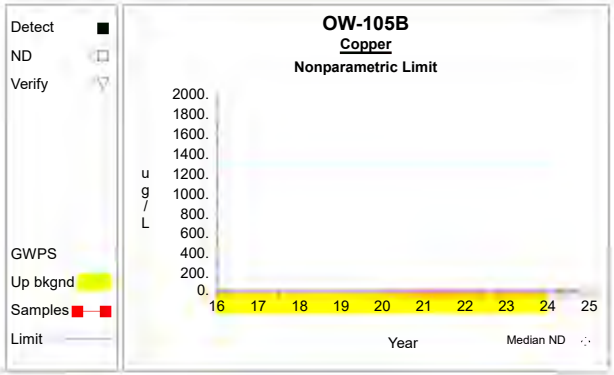
Graph 177



Graph 178

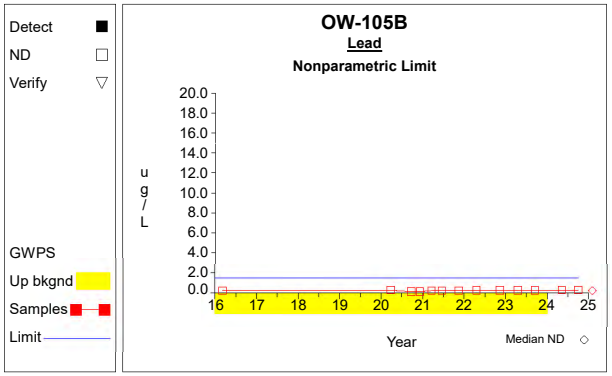


Graph 179

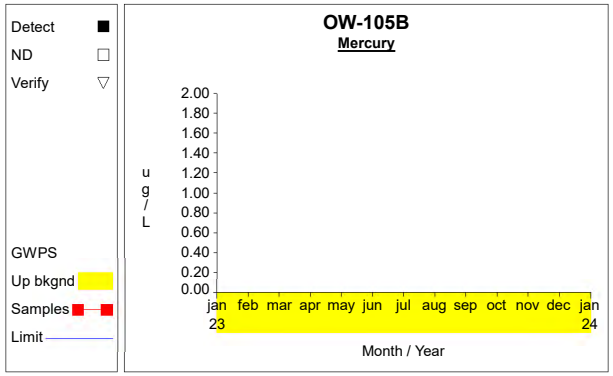


Graph 180

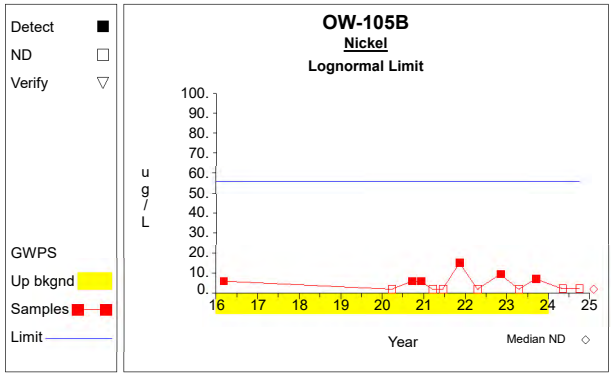
Up vs. Down Prediction Limits



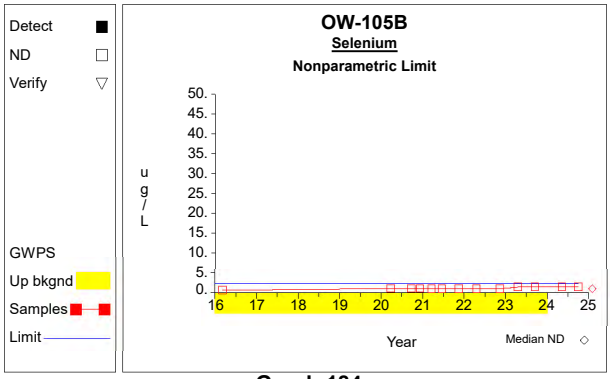
Graph 181



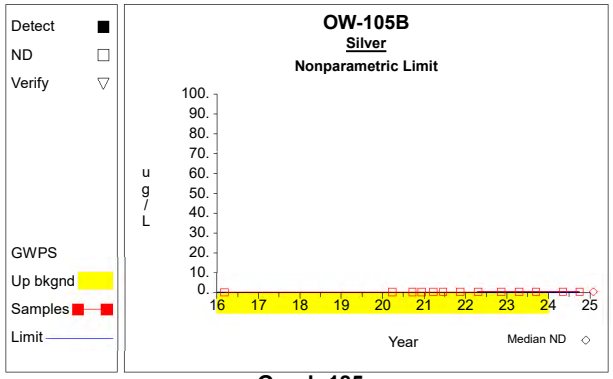
Graph 182



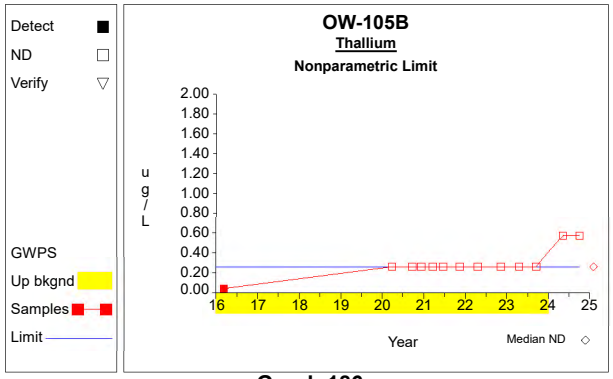
Graph 183



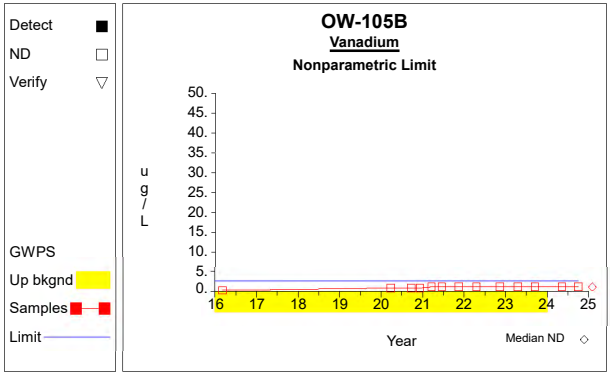
Graph 184



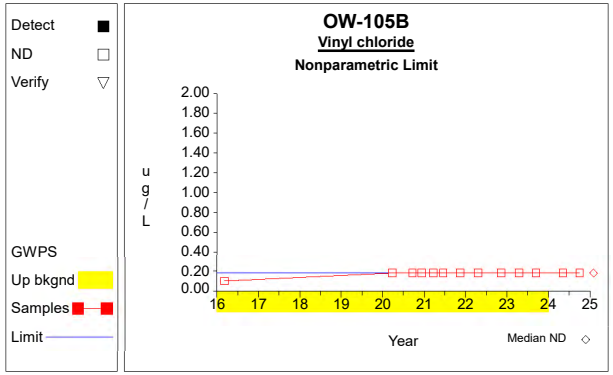
Graph 185



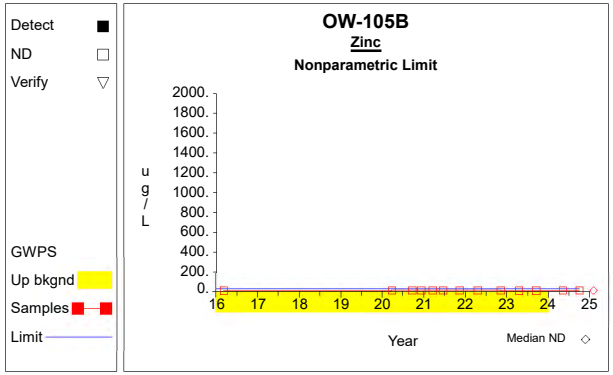
Graph 186



Graph 187

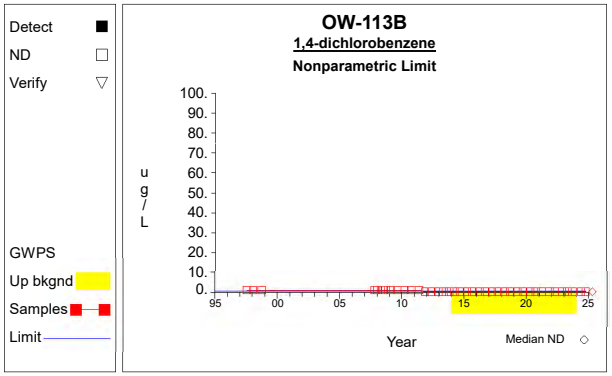


Graph 188

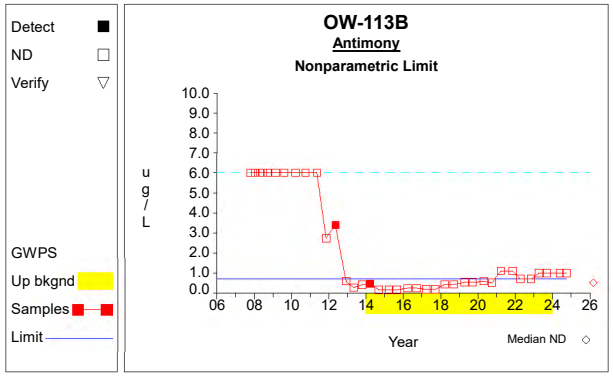


Graph 189

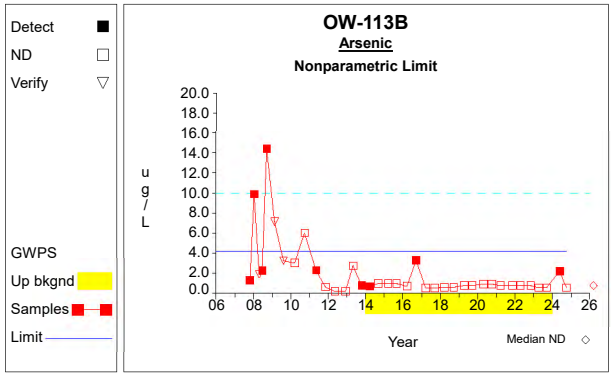
Up vs. Down Prediction Limits



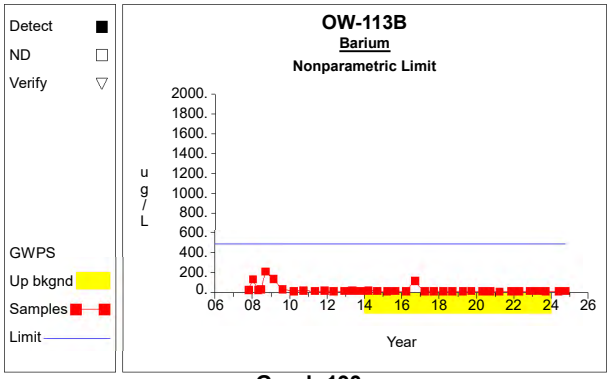
Graph 190



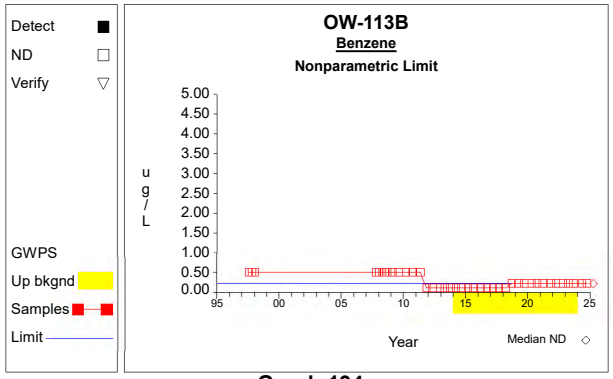
Graph 191



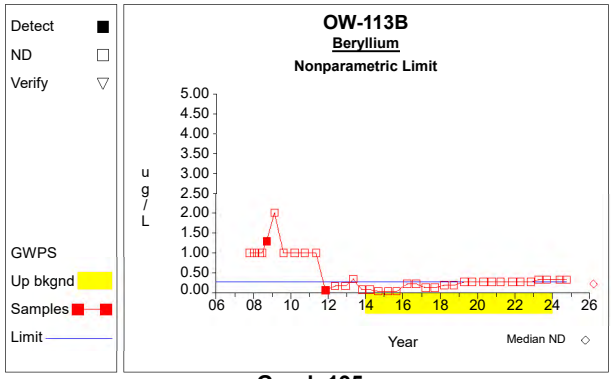
Graph 192



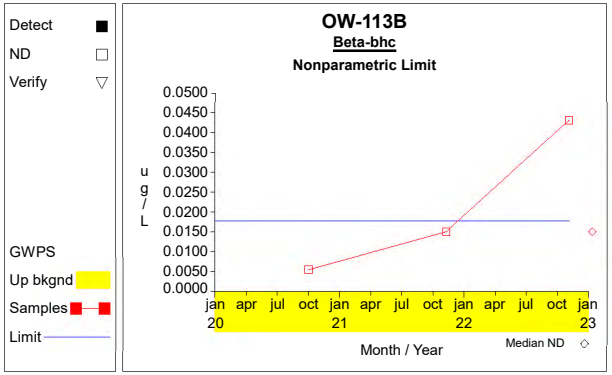
Graph 193



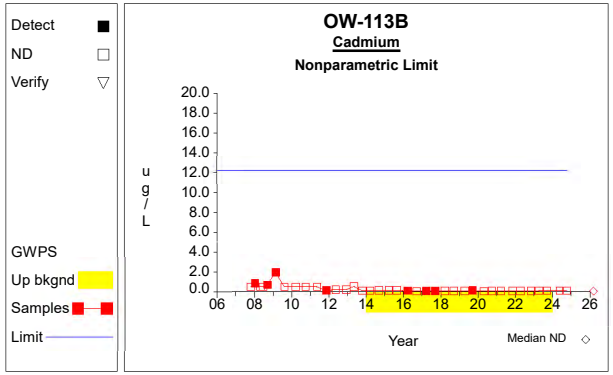
Graph 194



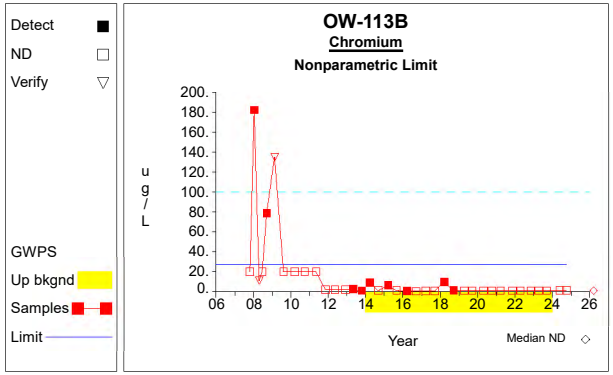
Graph 195



Graph 196

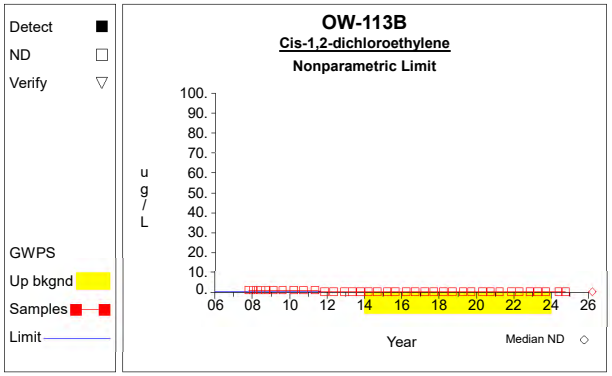


Graph 197

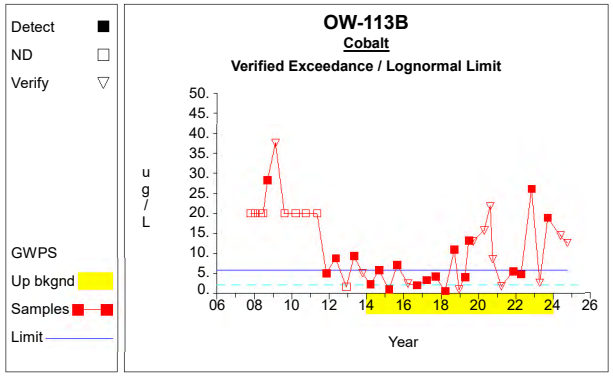


Graph 198

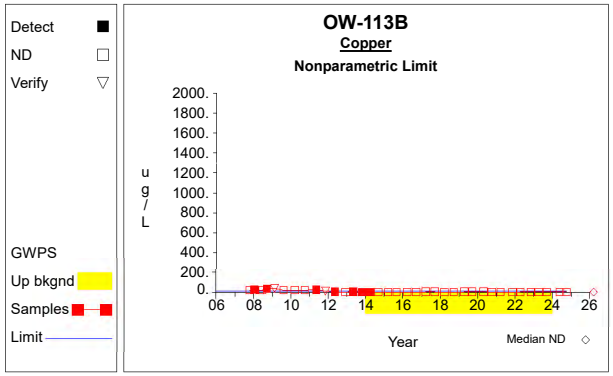
Up vs. Down Prediction Limits



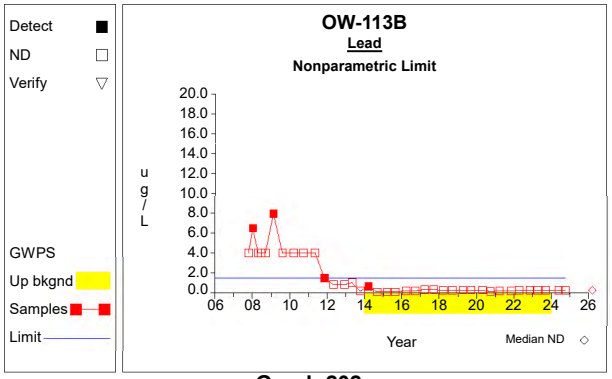
Graph 199



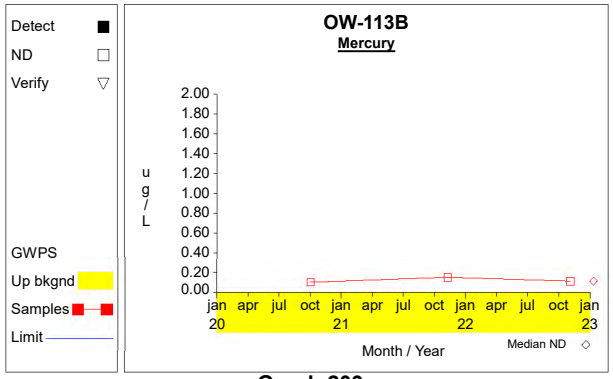
Graph 200



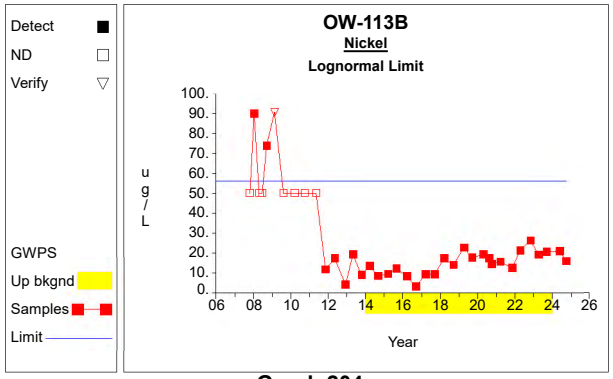
Graph 201



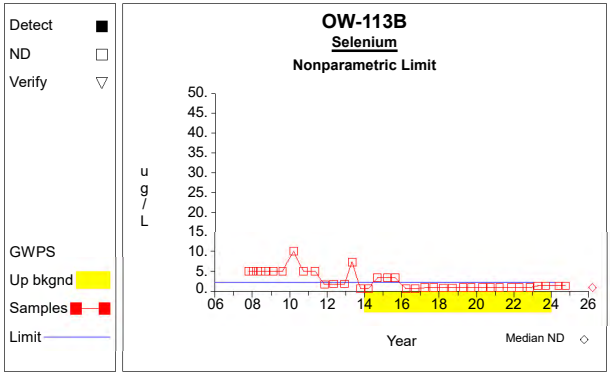
Graph 202



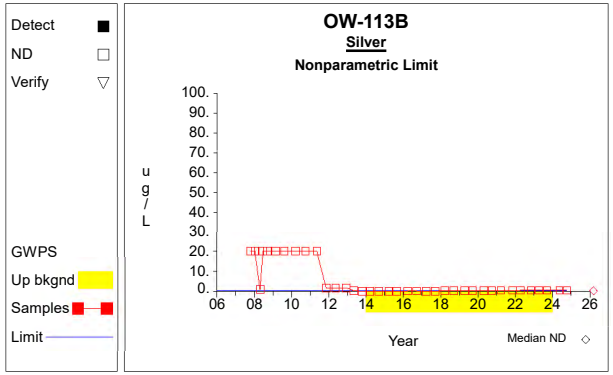
Graph 203



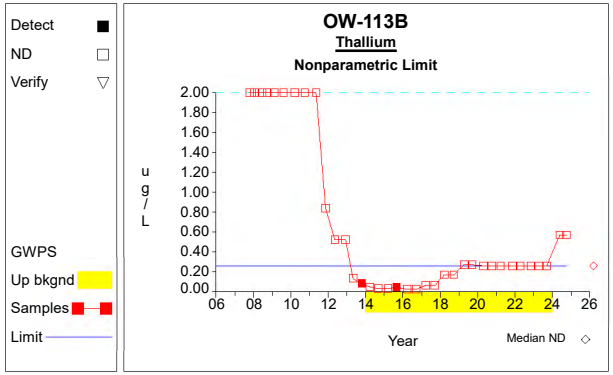
Graph 204



Graph 205

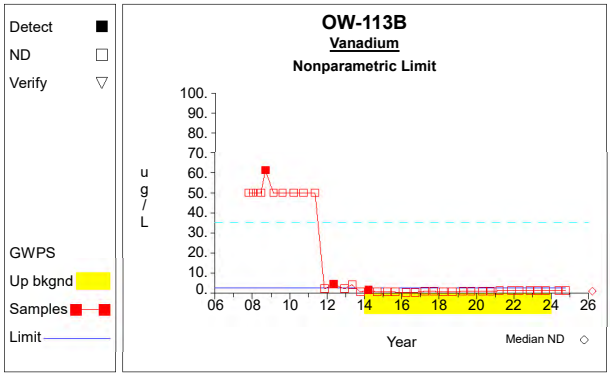


Graph 206

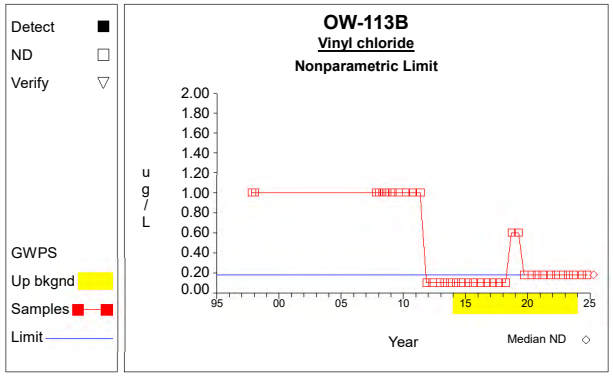


Graph 207

Up vs. Down Prediction Limits



Graph 208



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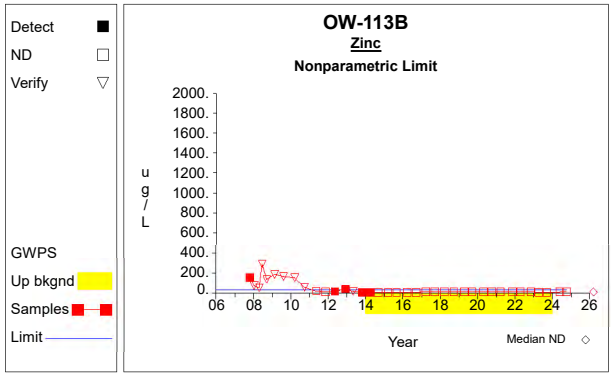

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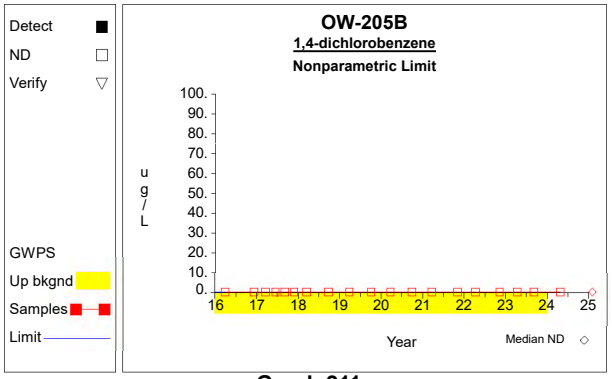
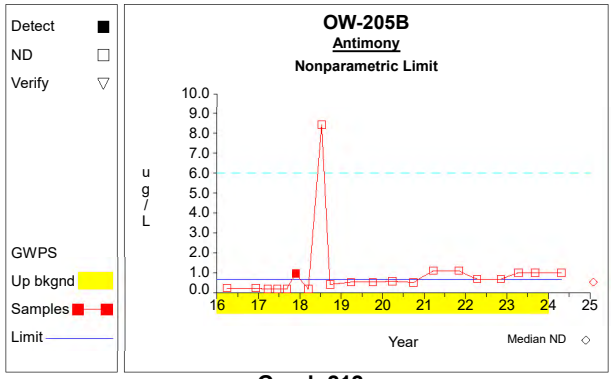
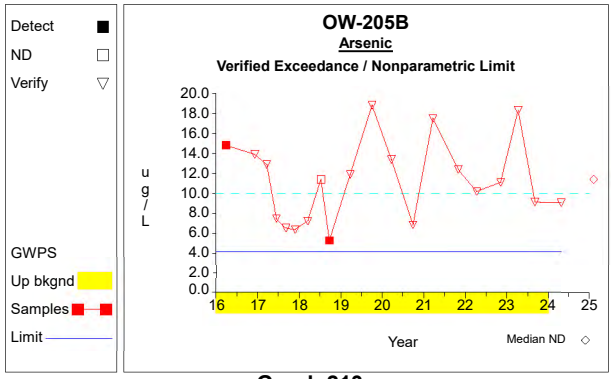


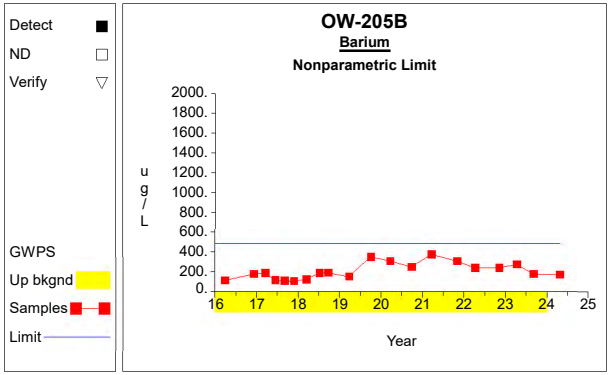
Graph 211



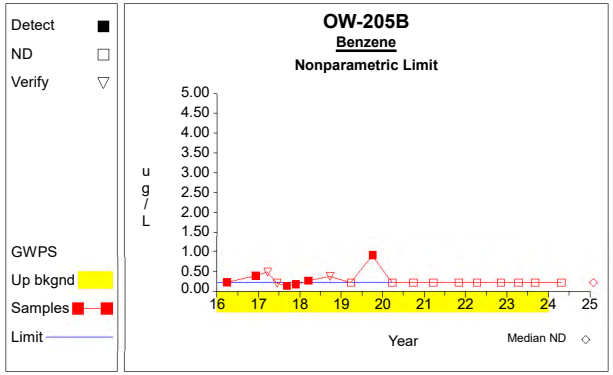
Graph 212



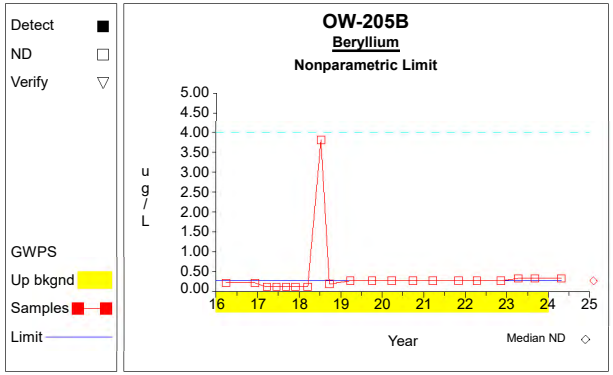
Graph 213



Graph 214

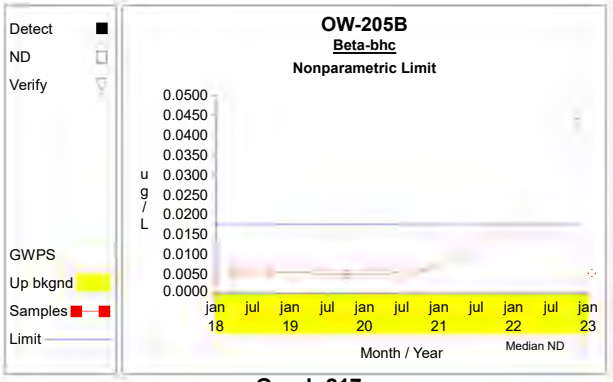


Graph 215

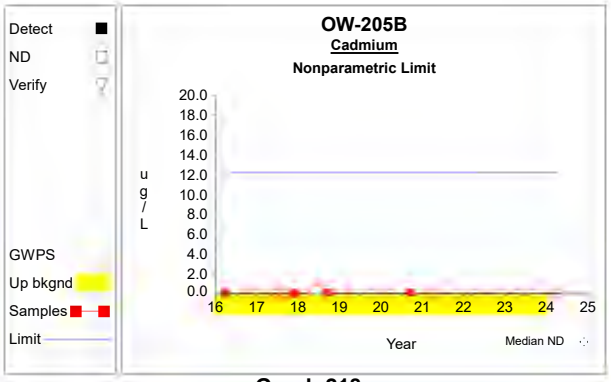


Graph 216

Up vs. Down Prediction Limits



Graph 217



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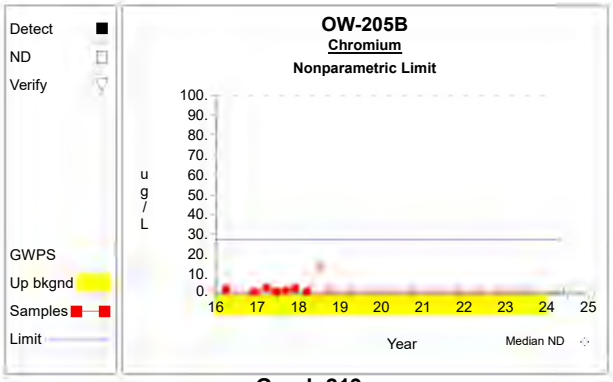
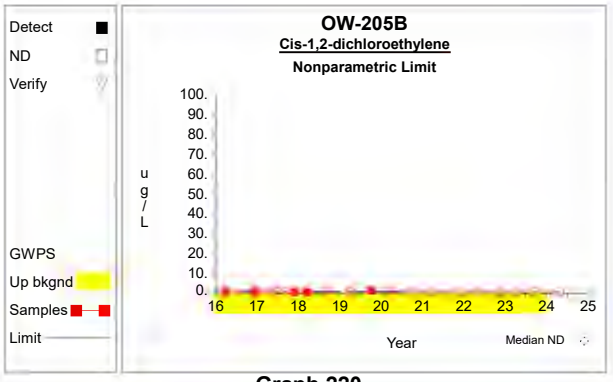
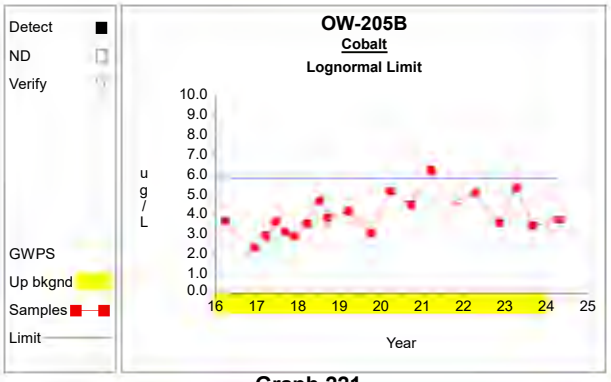


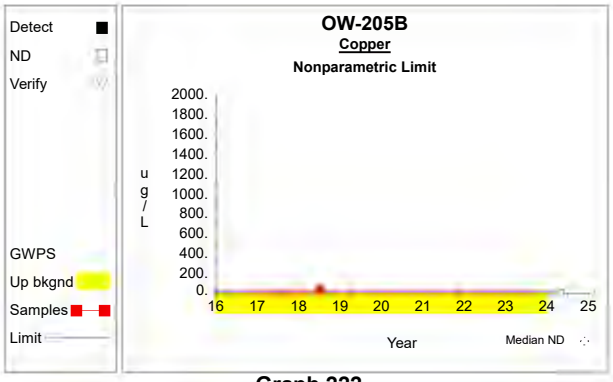
Graph 219



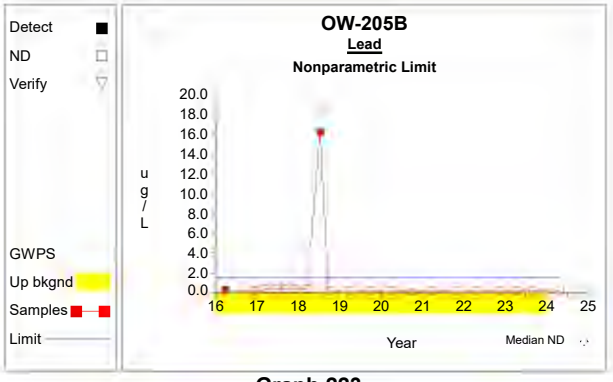
Graph 220



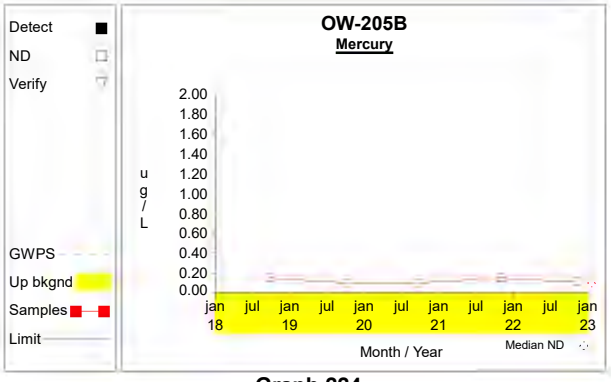
Graph 221



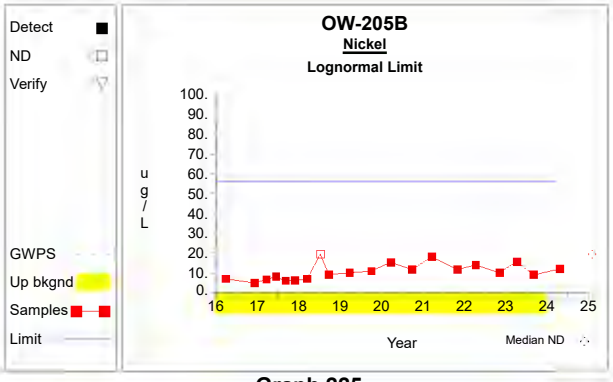
Graph 222



Graph 223

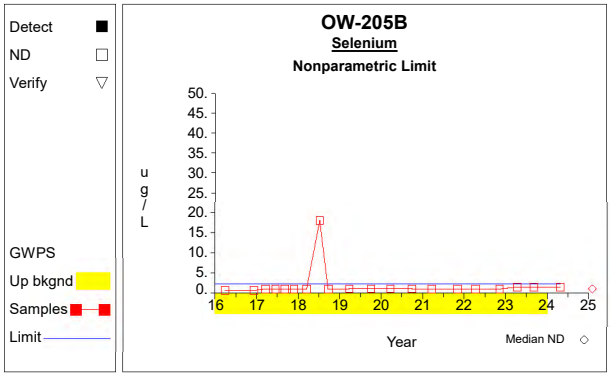


Graph 224

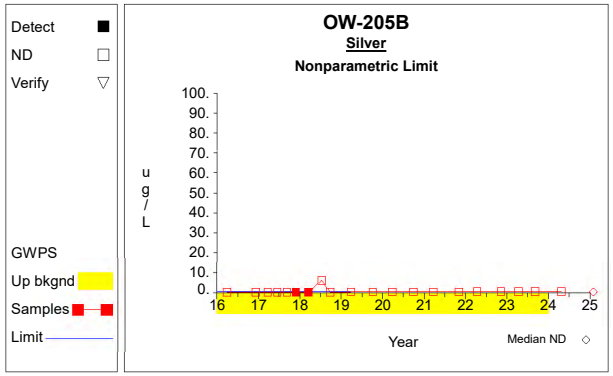


Graph 225

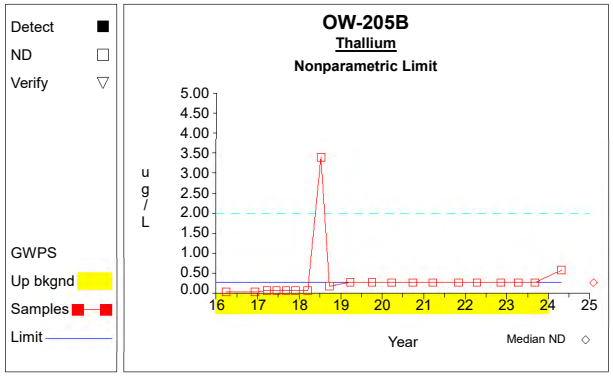
Up vs. Down Prediction Limits



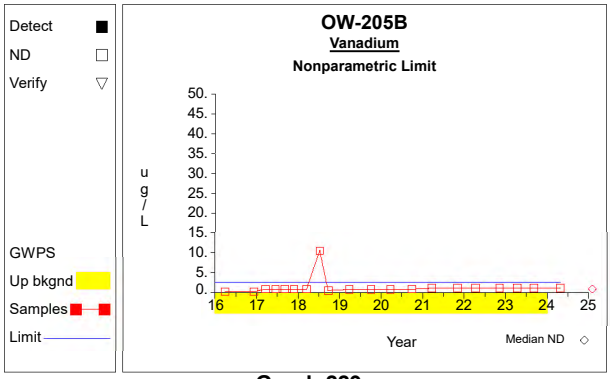
Graph 226



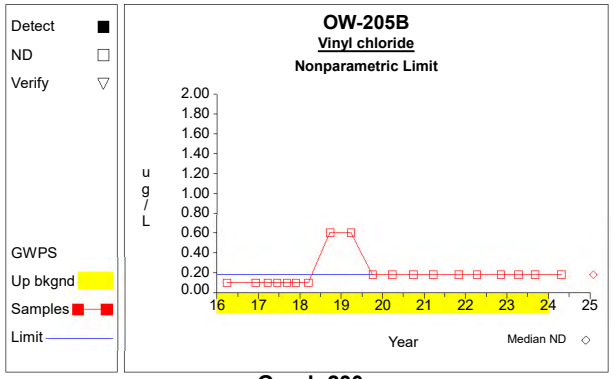
Graph 227



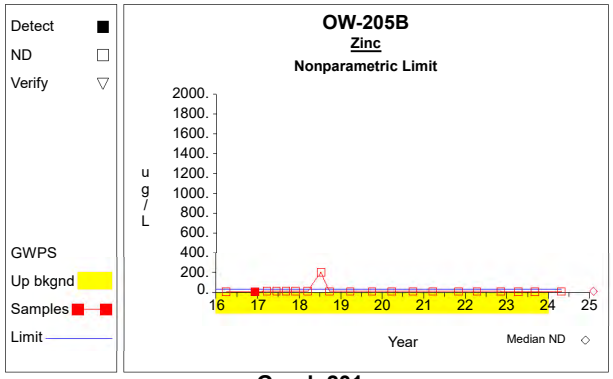
Graph 228



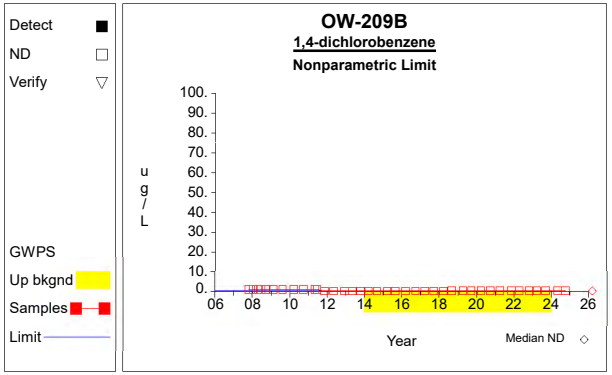
Graph 229



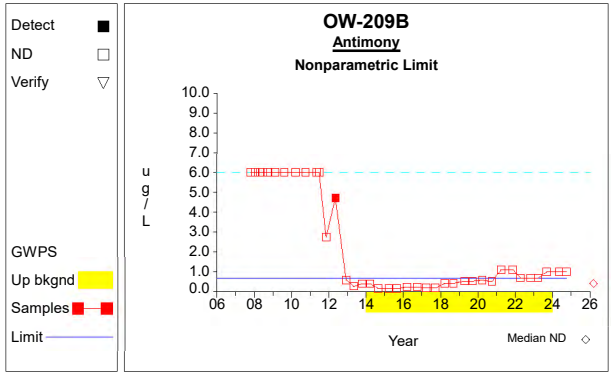
Graph 230



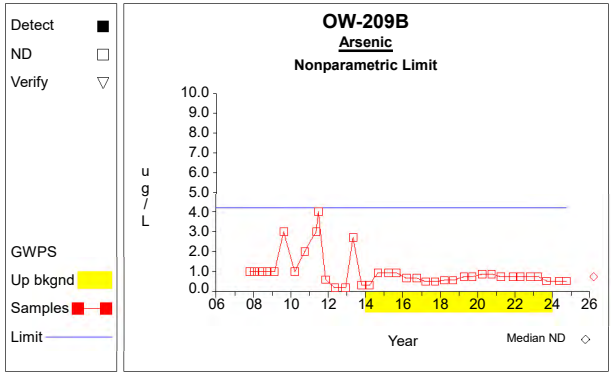
Graph 231



Graph 232

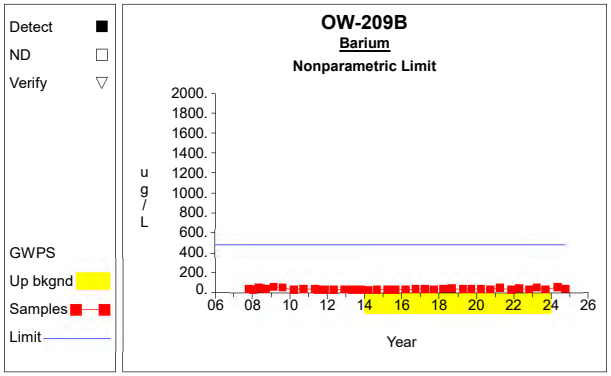


Graph 233

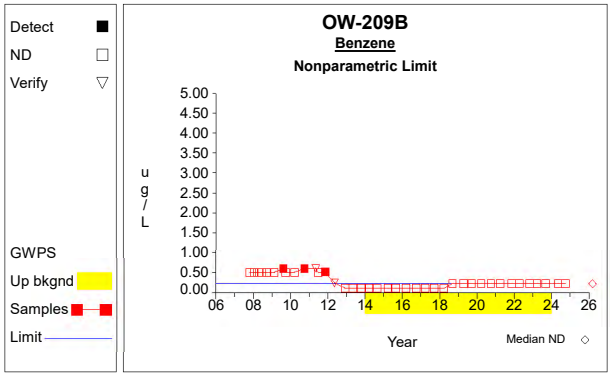


Graph 234

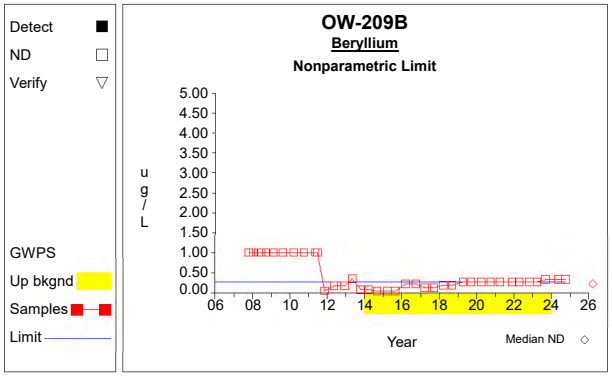
Up vs. Down Prediction Limits



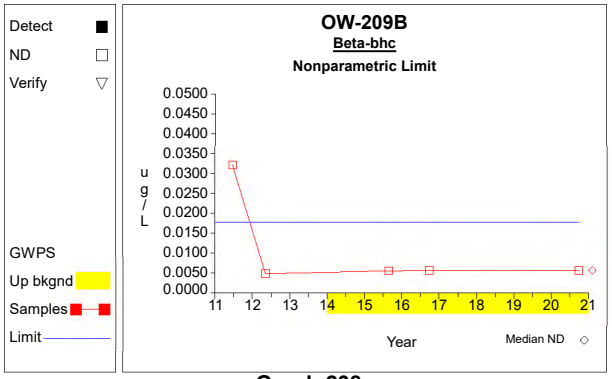
Graph 235



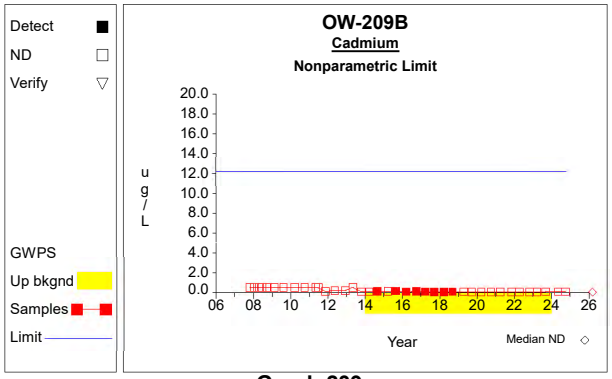
Graph 236



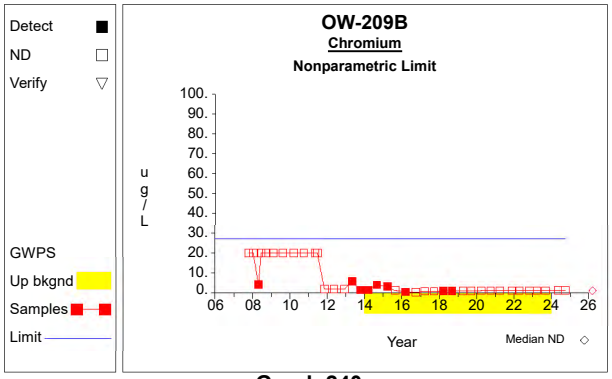
Graph 237



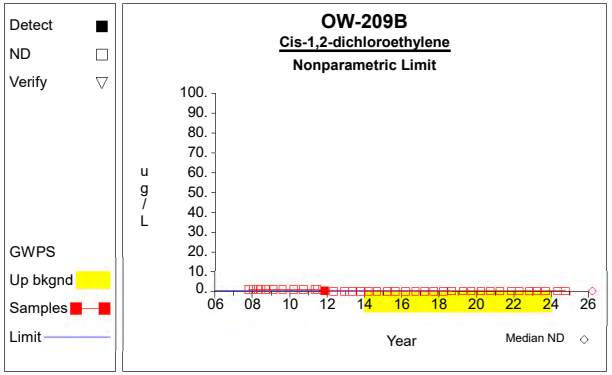
Graph 238



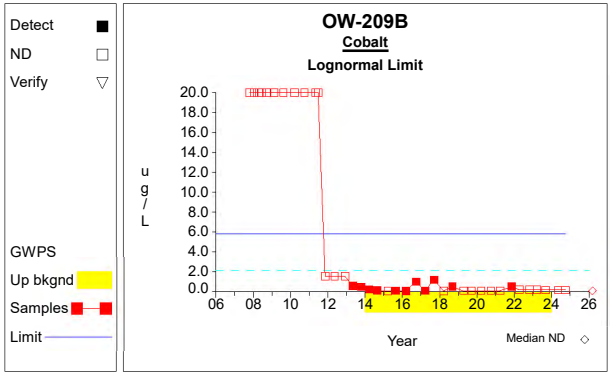
Graph 239



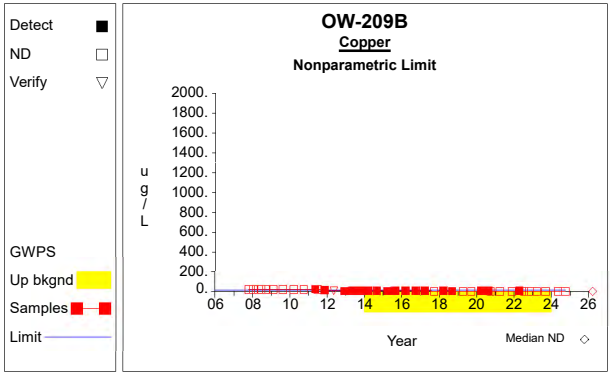
Graph 240



Graph 241

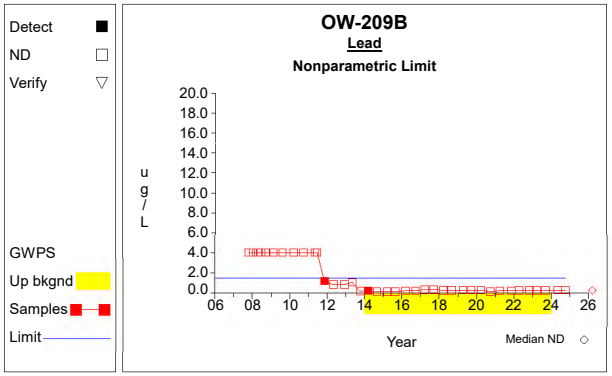


Graph 242

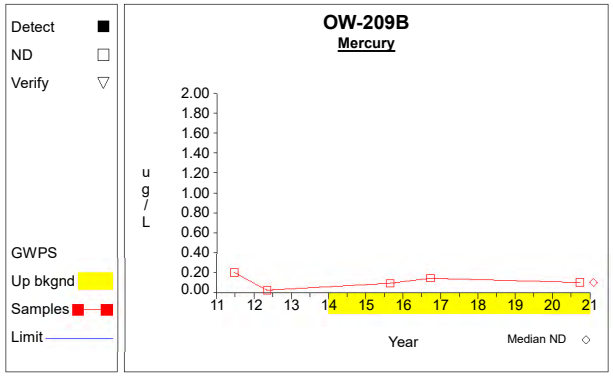


Graph 243

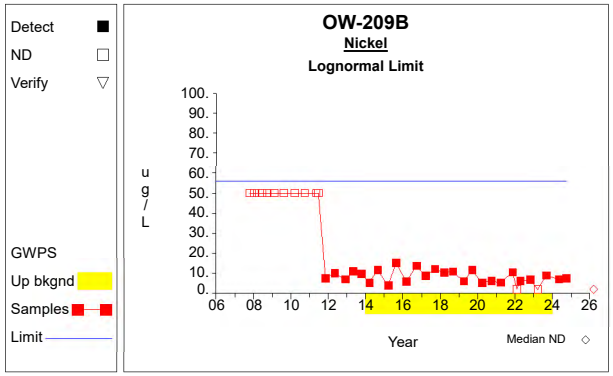
Up vs. Down Prediction Limits



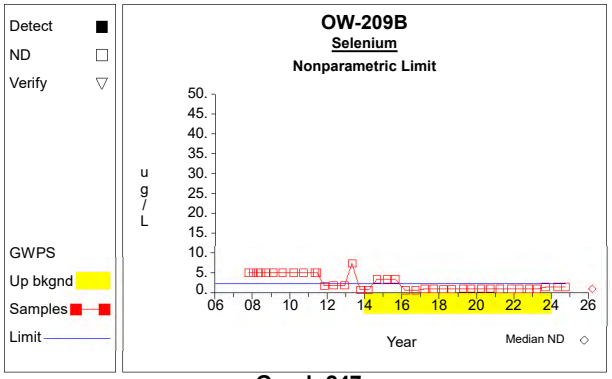
Graph 244



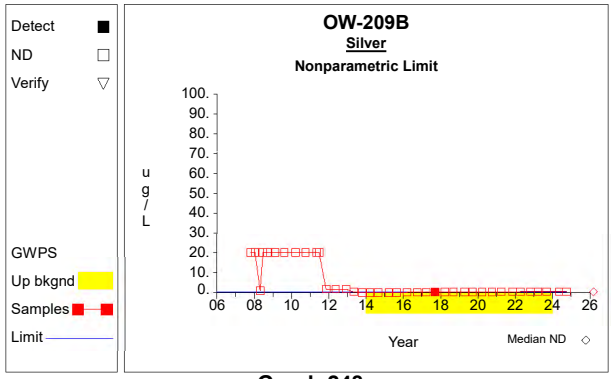
Graph 245



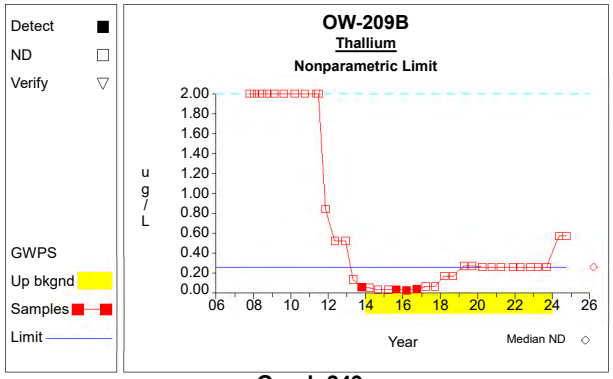
Graph 246



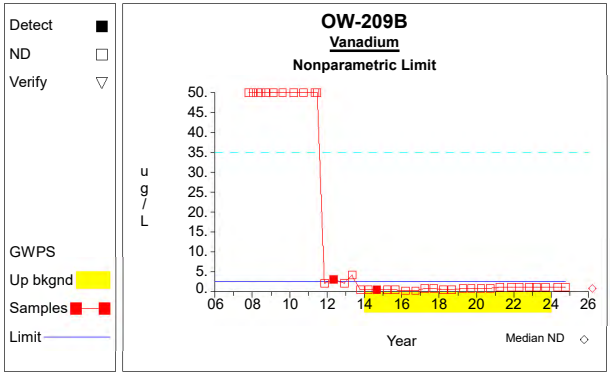
Graph 247



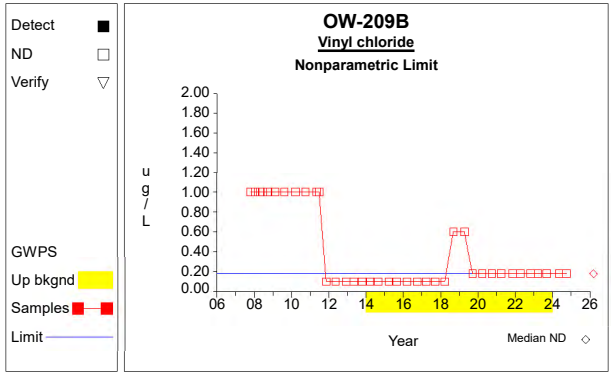
Graph 248



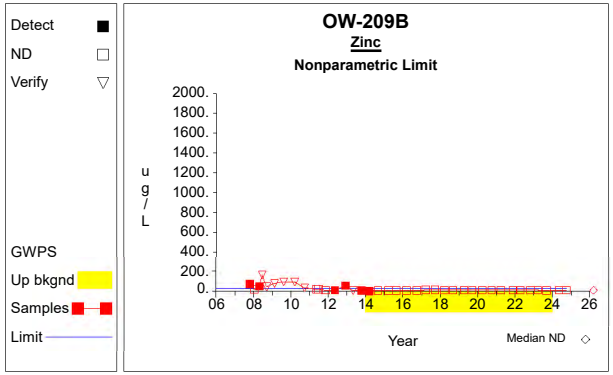
Graph 249



Graph 250

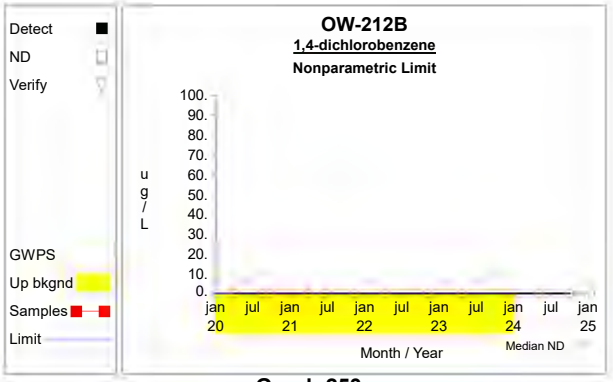


Graph 251

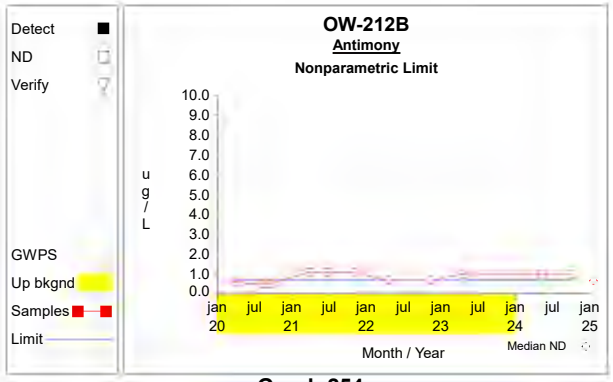


Graph 252

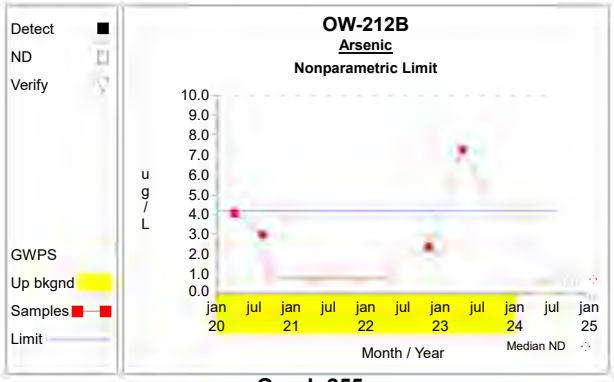
Up vs. Down Prediction Limits



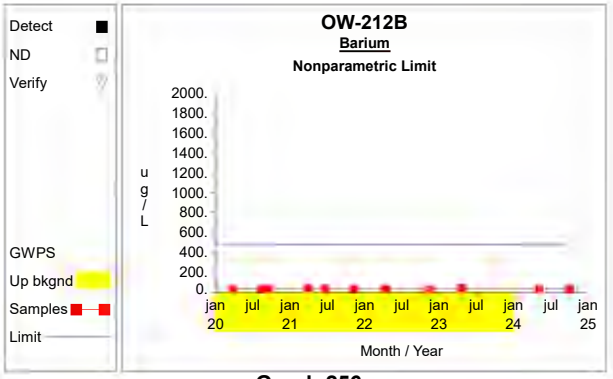
Graph 253



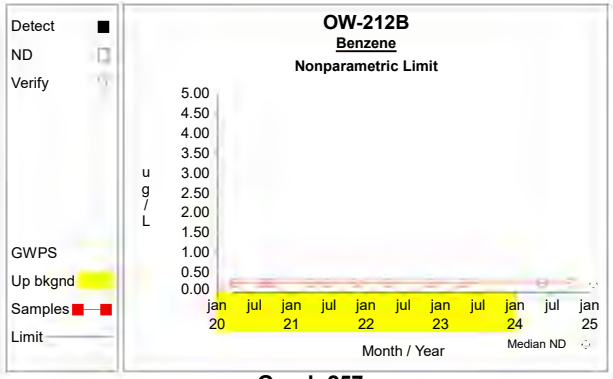
Graph 254



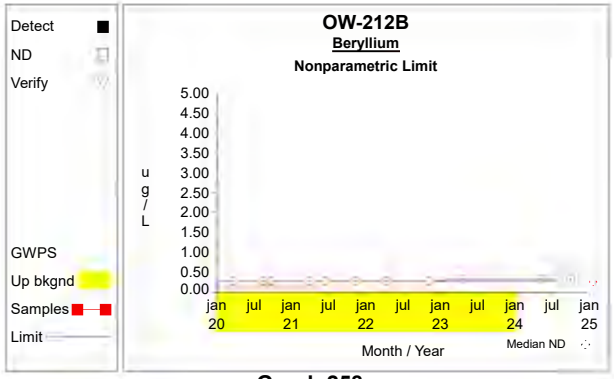
Graph 255



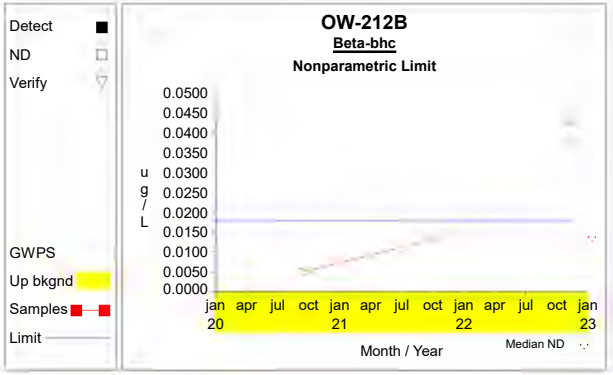
Graph 256



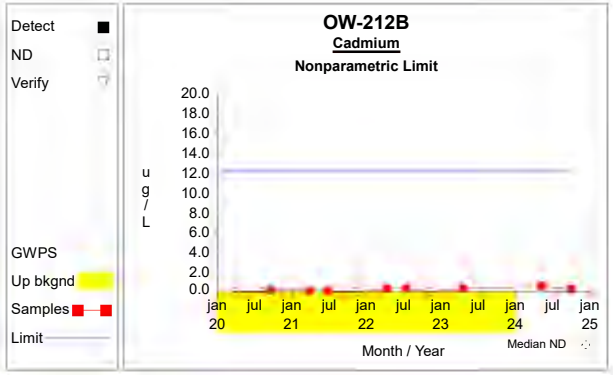
Graph 257



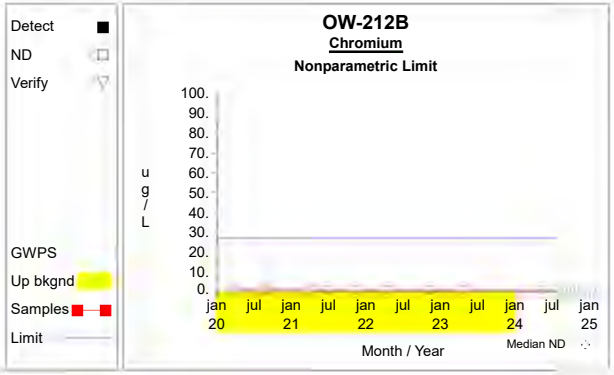
Graph 258



Graph 259

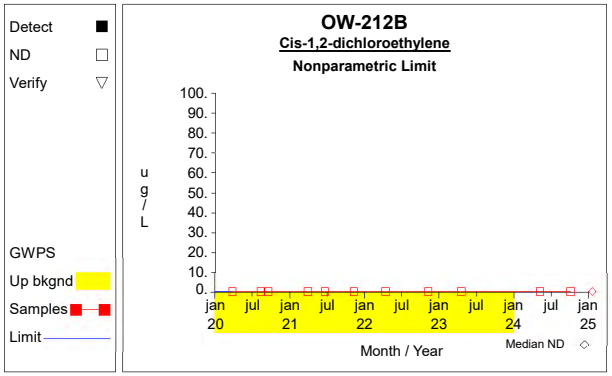


Graph 260

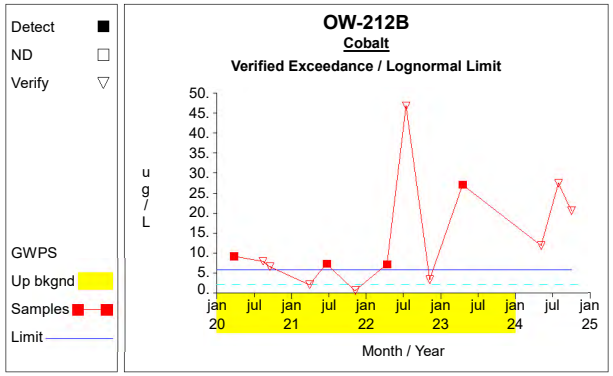


Graph 261

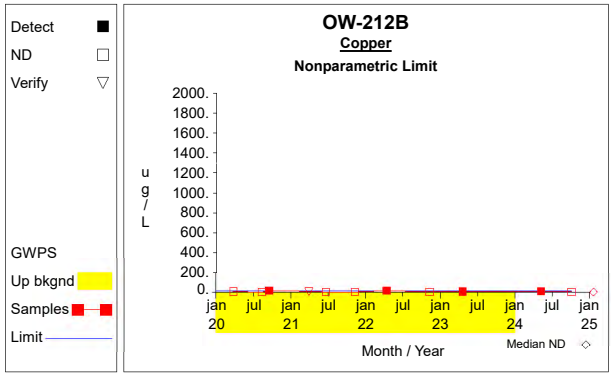
Up vs. Down Prediction Limits



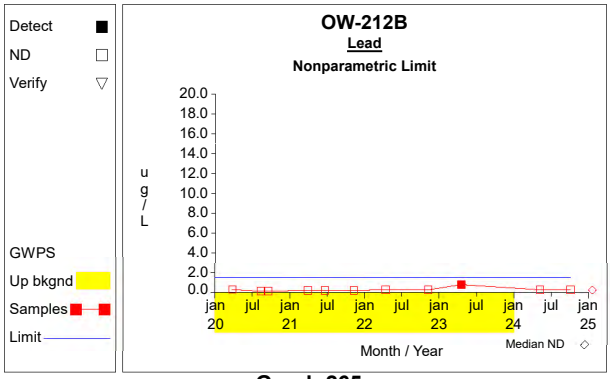
Graph 262



Graph 263



Graph 264



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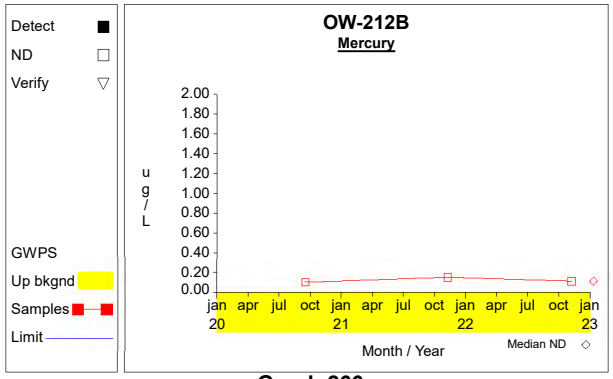
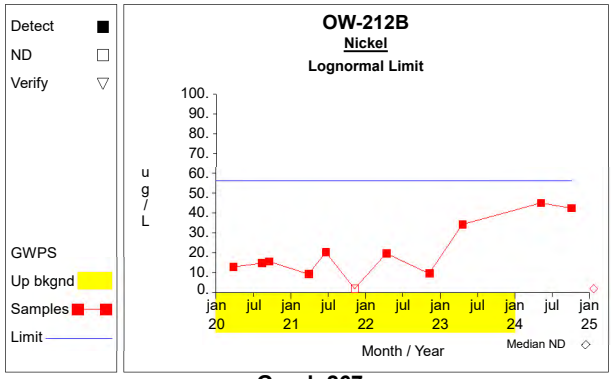
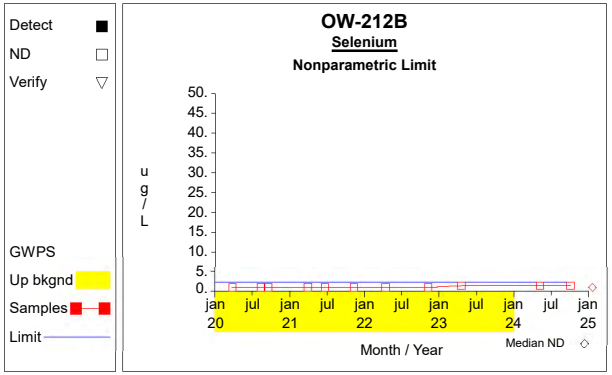


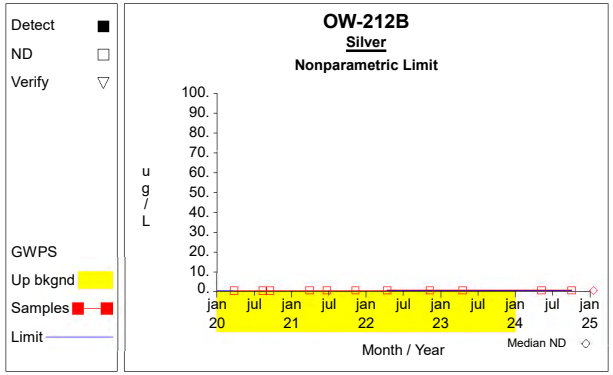
Graph 266



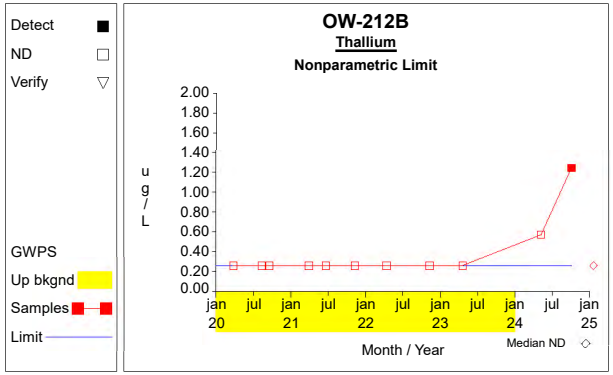
Graph 267



Graph 268

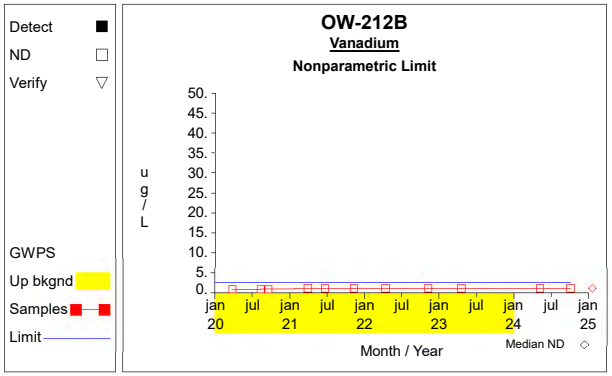


Graph 269

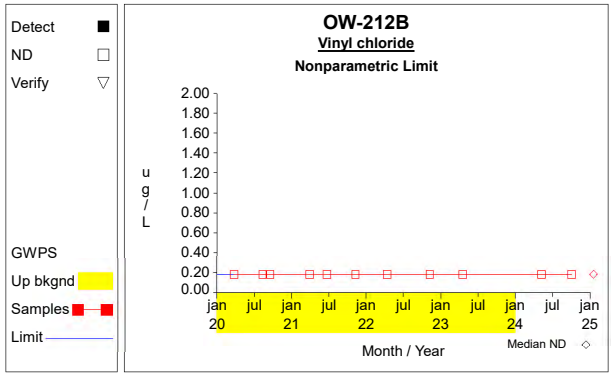


Graph 270

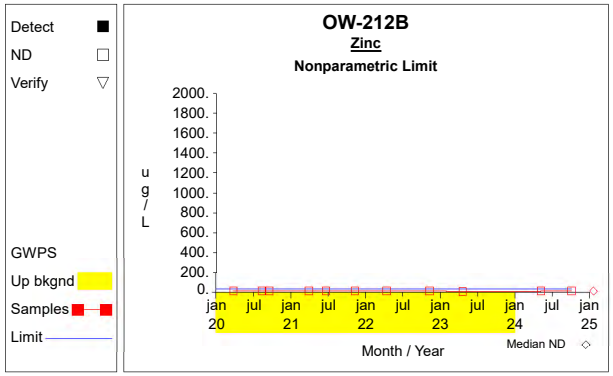
Up vs. Down Prediction Limits



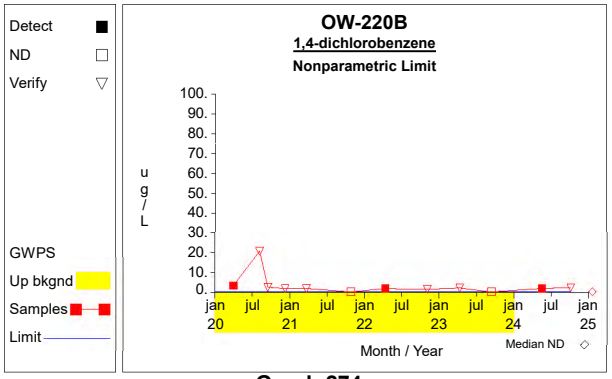
Graph 271



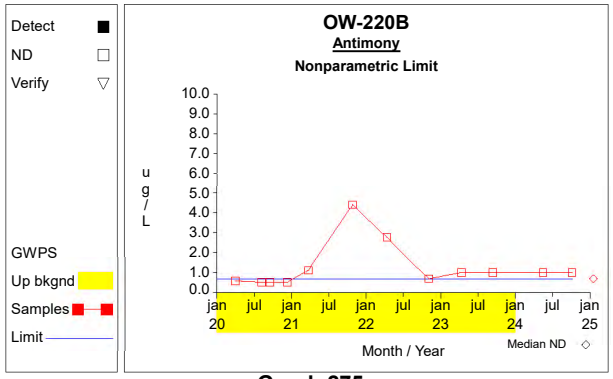
Graph 272



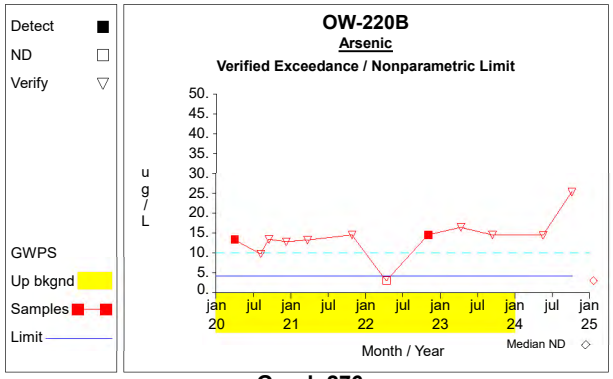
Graph 273



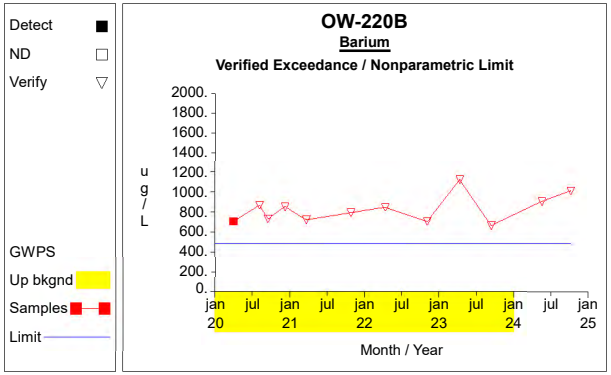
Graph 274



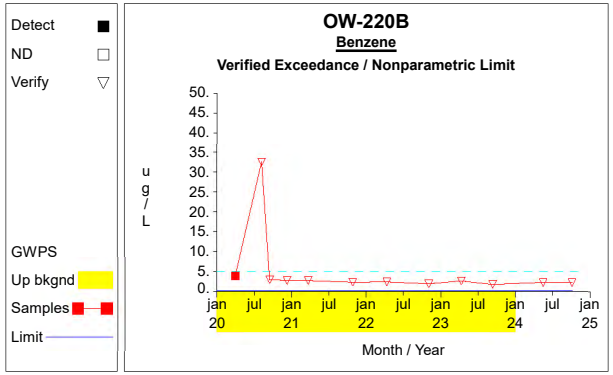
Graph 275



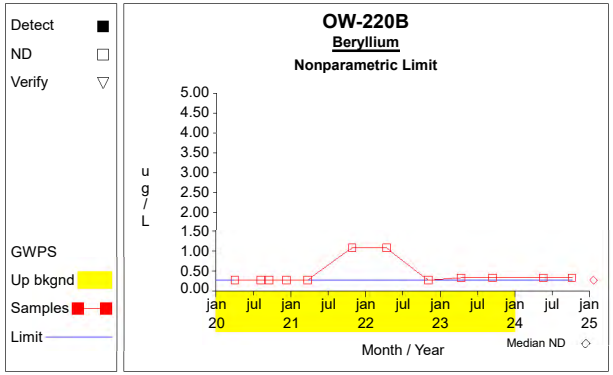
Graph 276



Graph 277

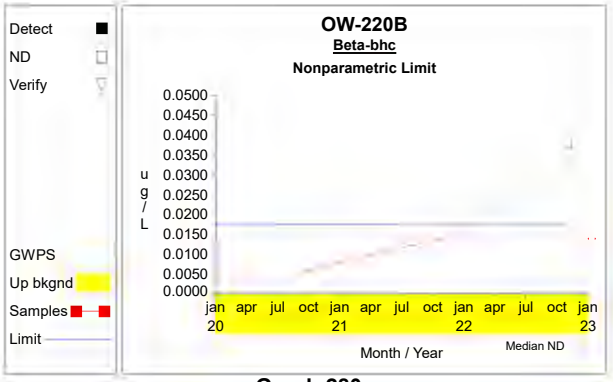


Graph 278

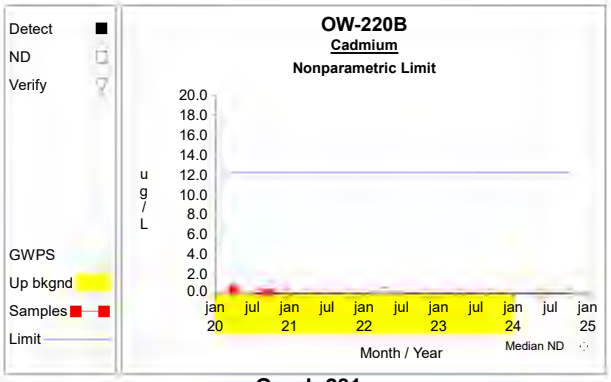


Graph 279

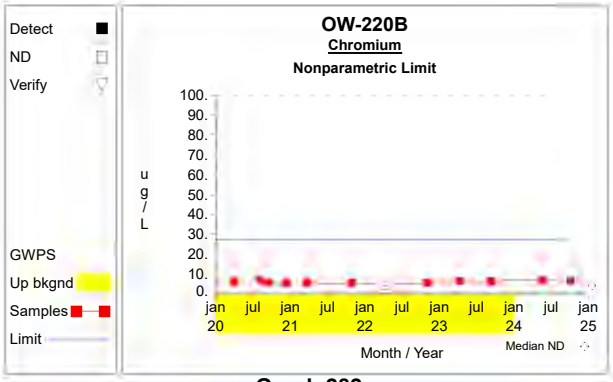
Up vs. Down Prediction Limits



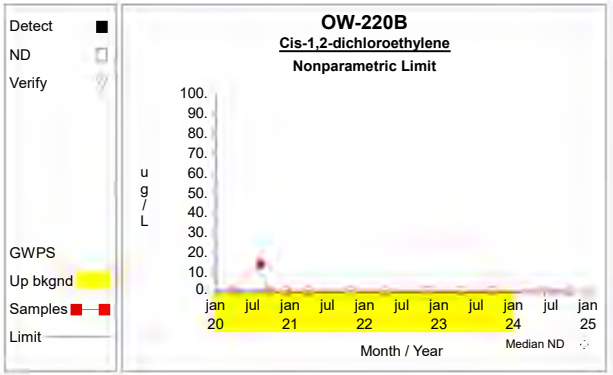
Graph 280



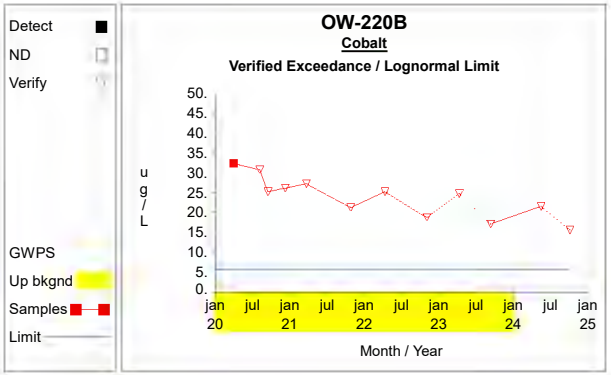
Graph 281



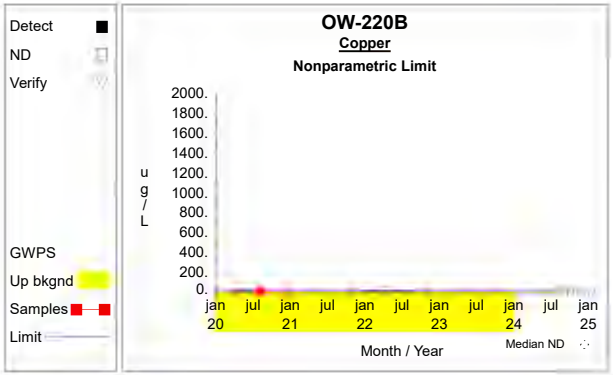
Graph 282



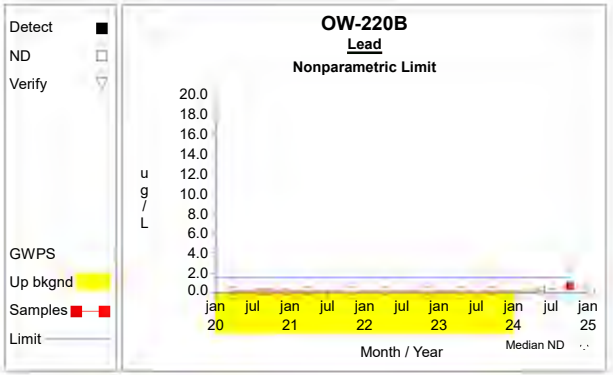
Graph 283



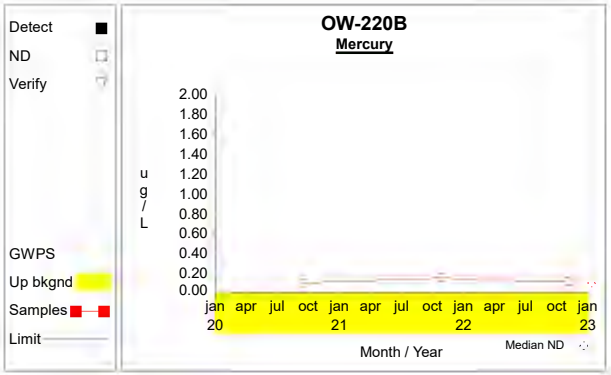
Graph 284



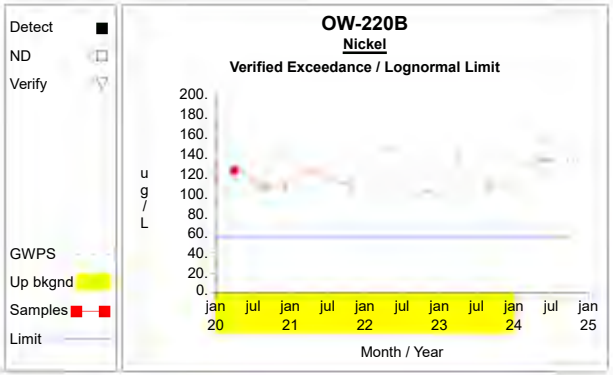
Graph 285



Graph 286

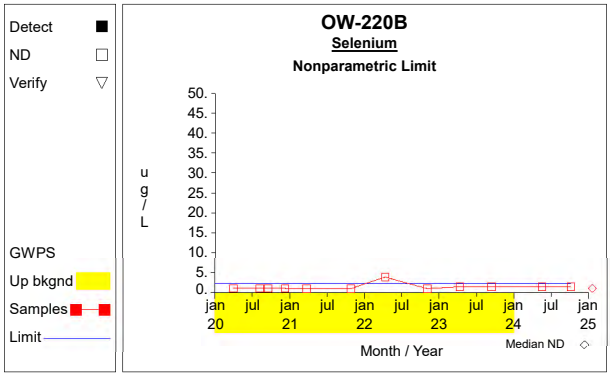


Graph 287

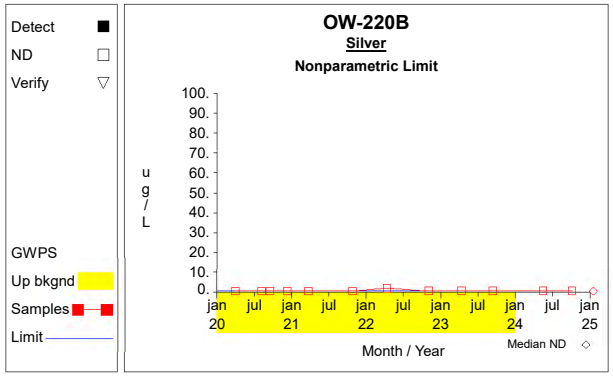


Graph 288

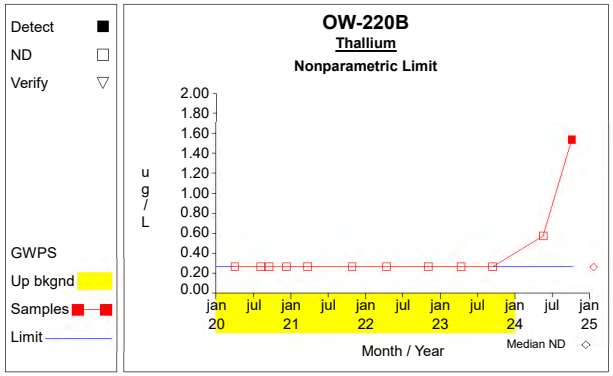
Up vs. Down Prediction Limits



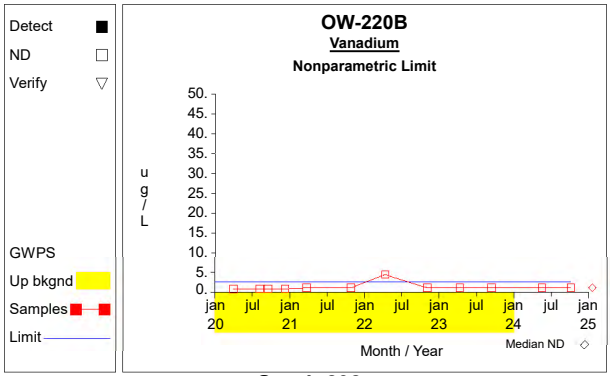
Graph 289



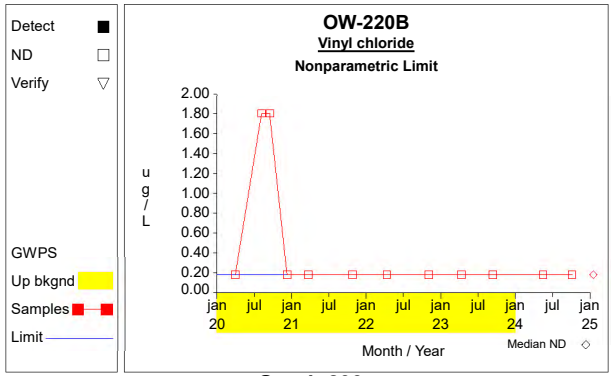
Graph 290



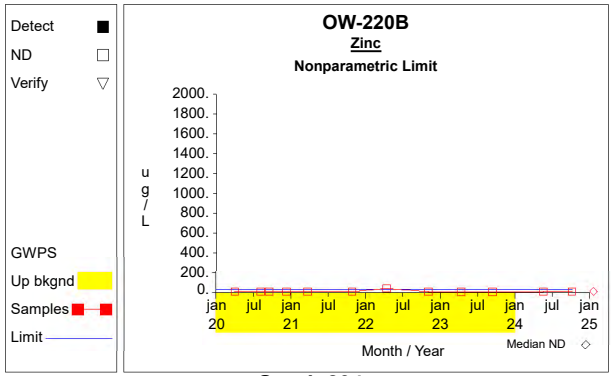
Graph 291



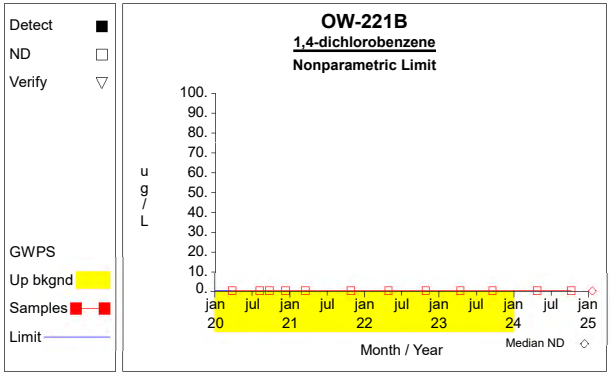
Graph 292



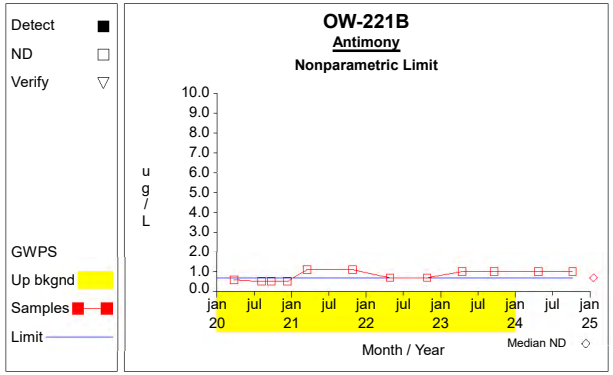
Graph 293



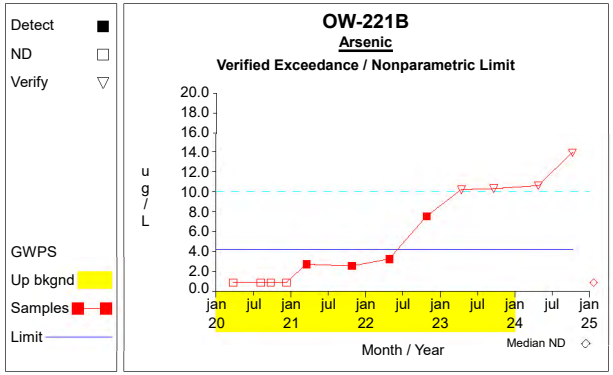
Graph 294



Graph 295

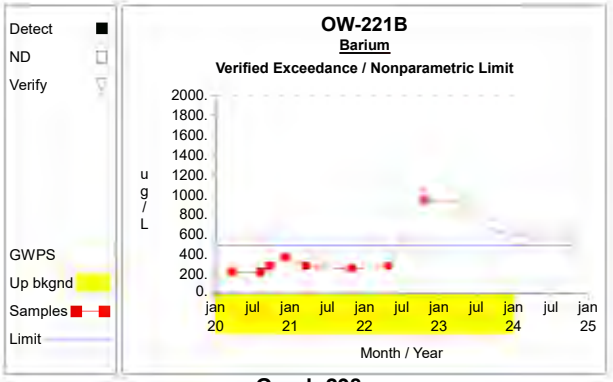


Graph 296

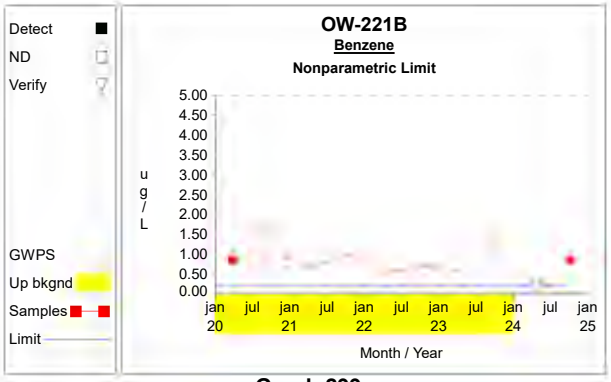


Graph 297

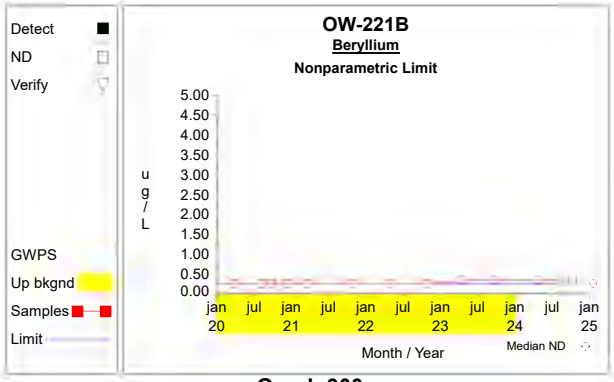
Up vs. Down Prediction Limits



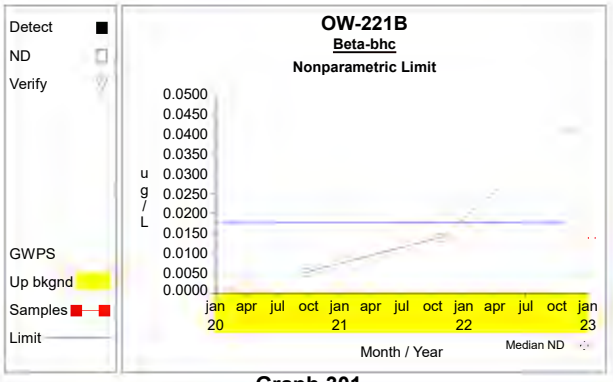
Graph 298



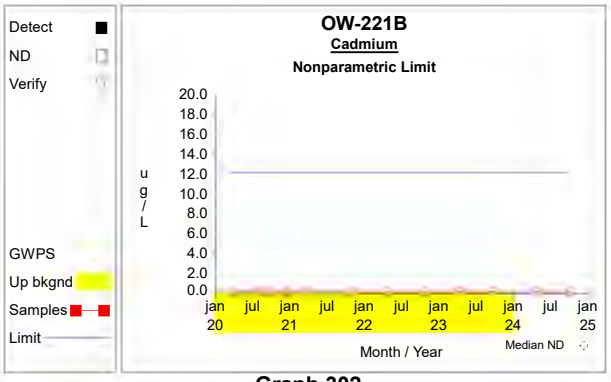
Graph 299



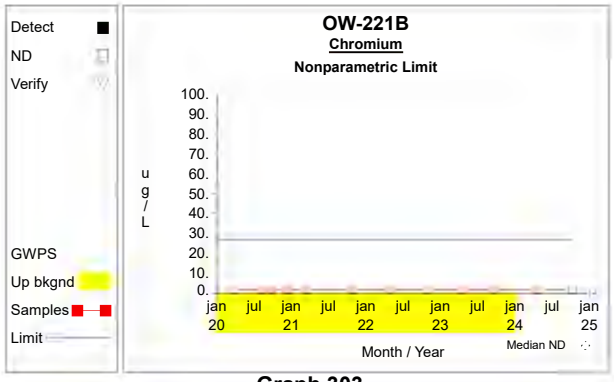
Graph 300



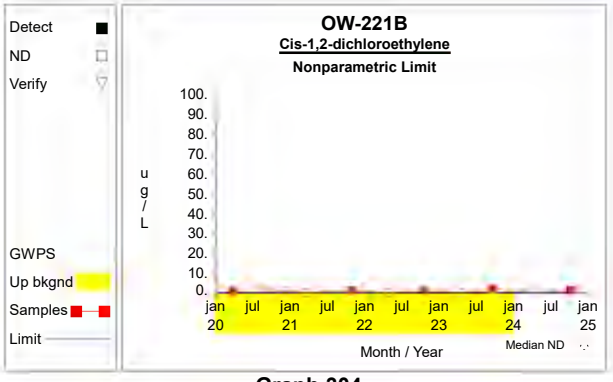
Graph 301



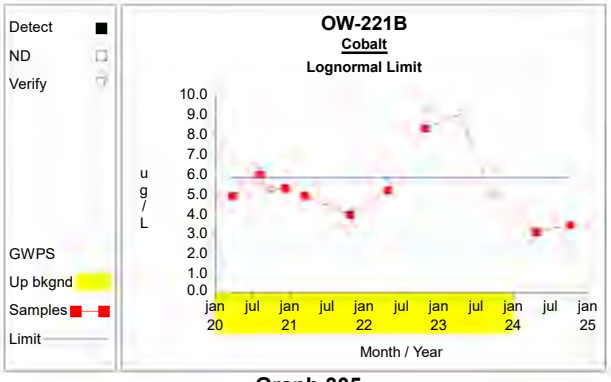
Graph 302



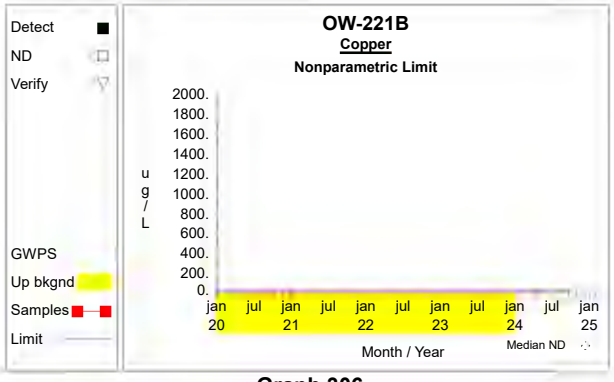
Graph 303



Graph 304

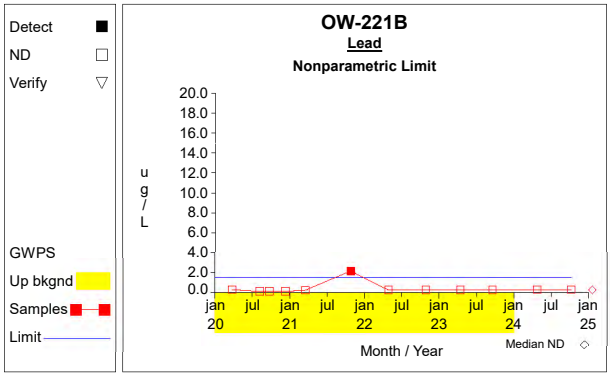


Graph 305

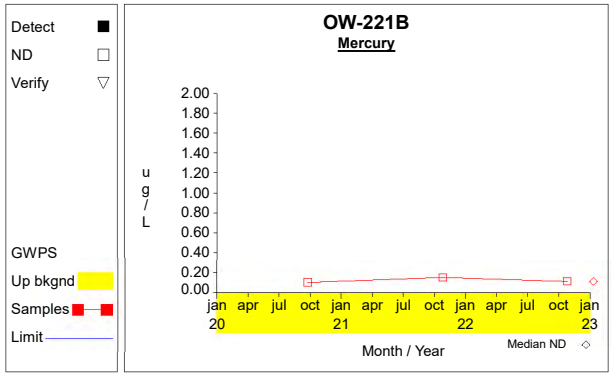


Graph 306

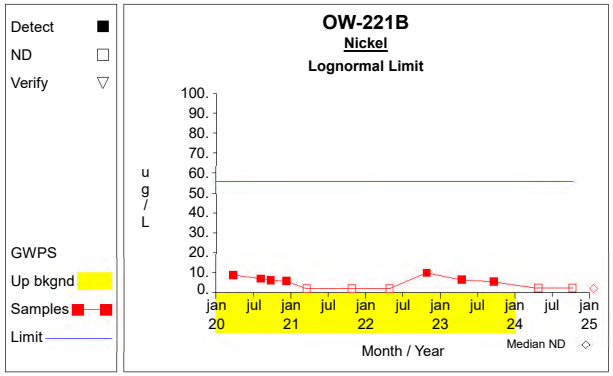
Up vs. Down Prediction Limits



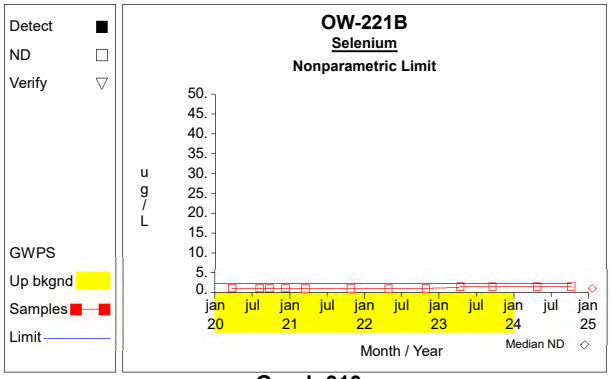
Graph 307



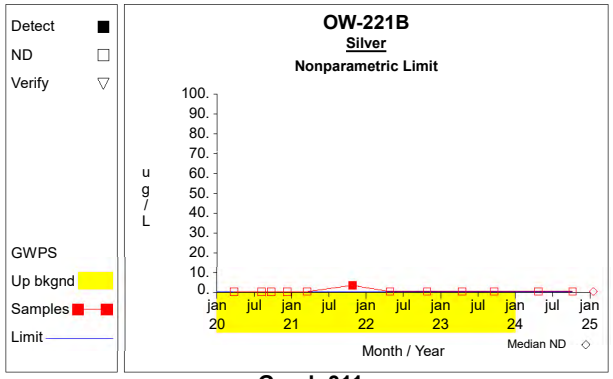
Graph 308



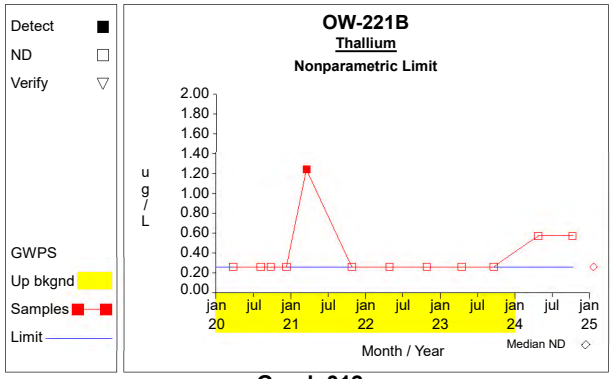
Graph 309



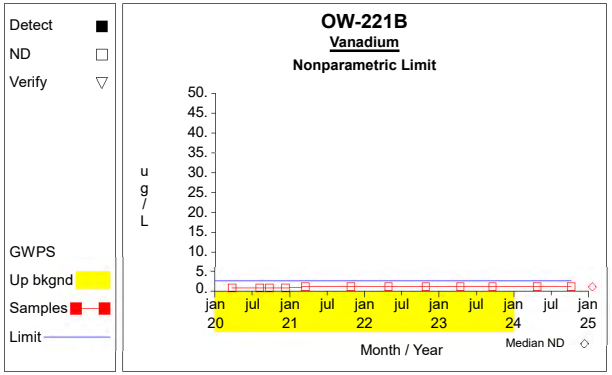
Graph 310



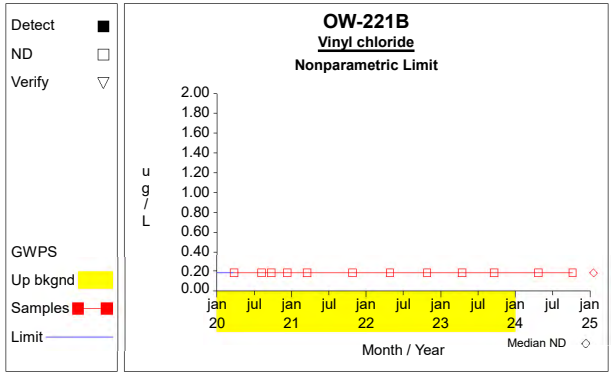
Graph 311



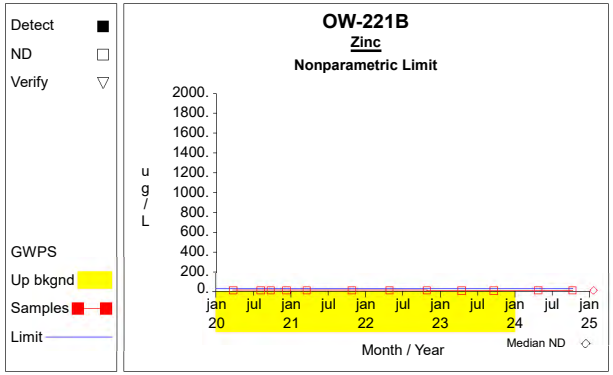
Graph 312



Graph 313

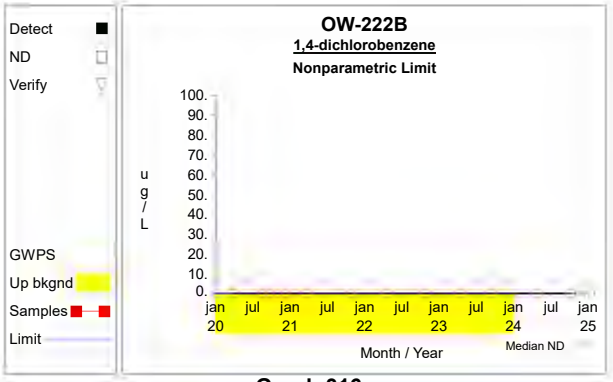


Graph 314

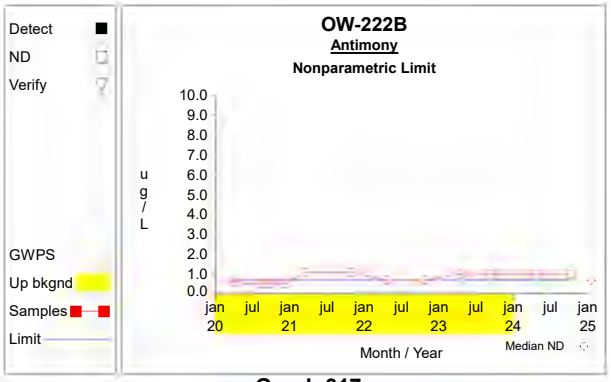


Graph 315

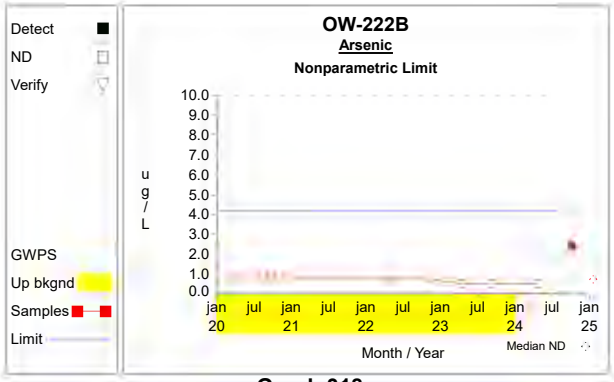
Up vs. Down Prediction Limits



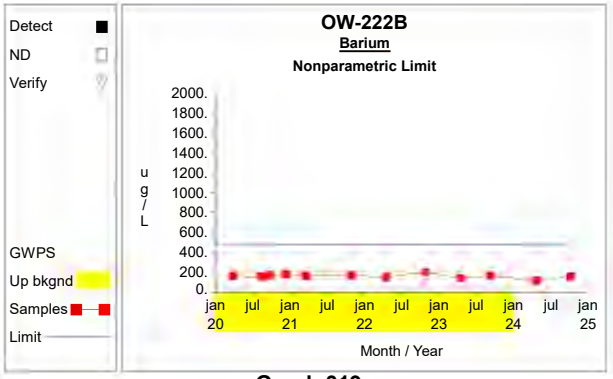
Graph 316



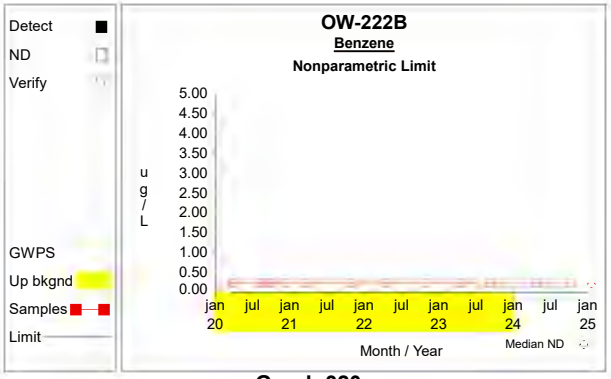
Graph 317



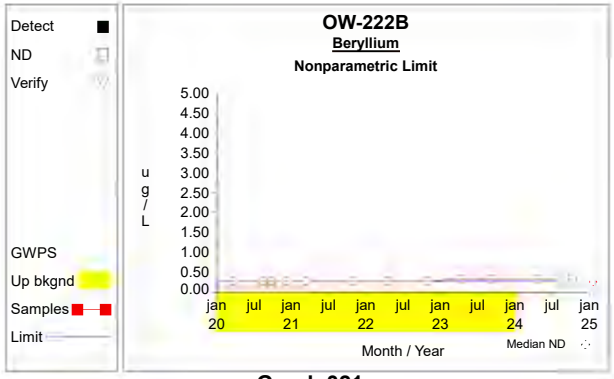
Graph 318



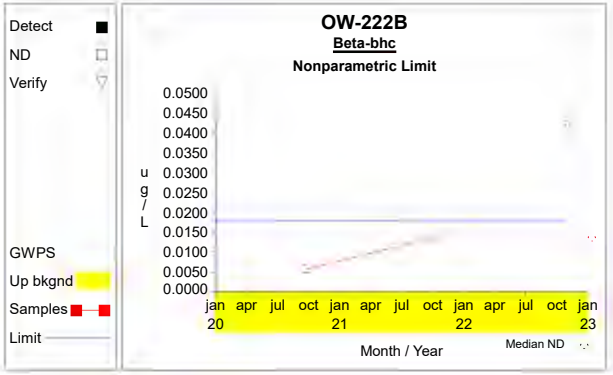
Graph 319



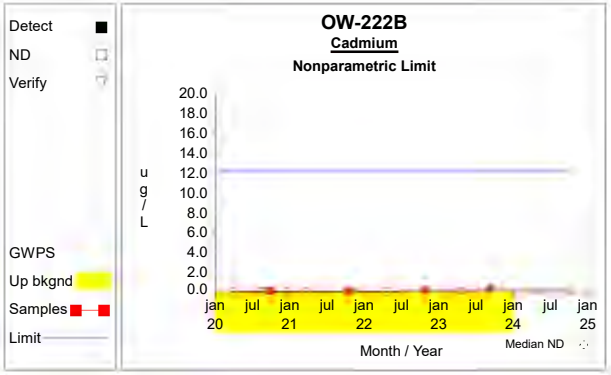
Graph 320



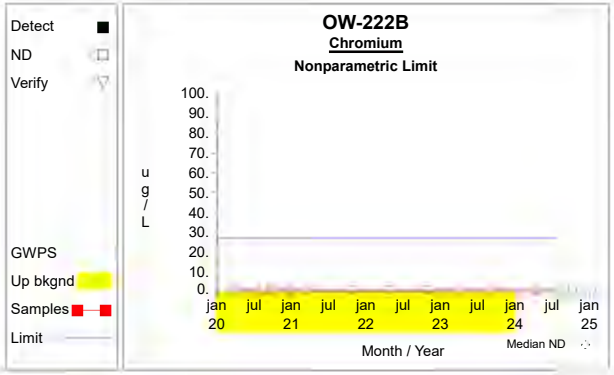
Graph 321



Graph 322

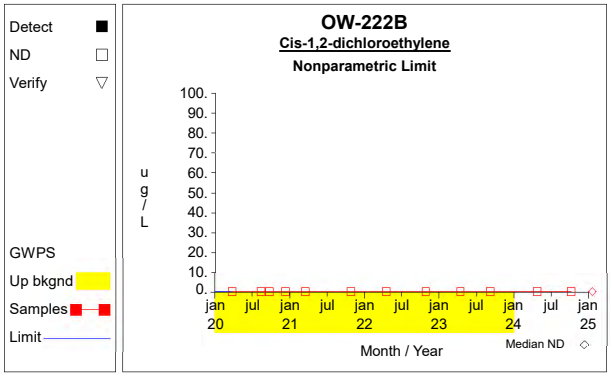


Graph 323

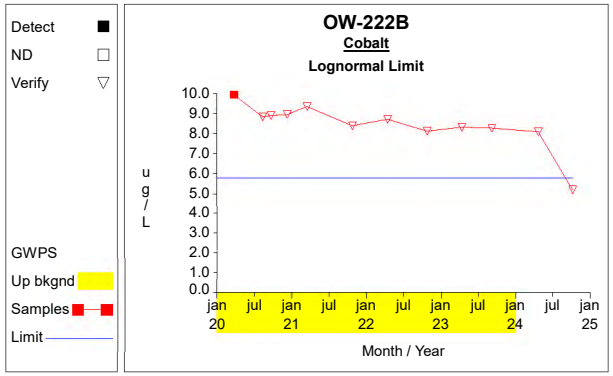


Graph 324

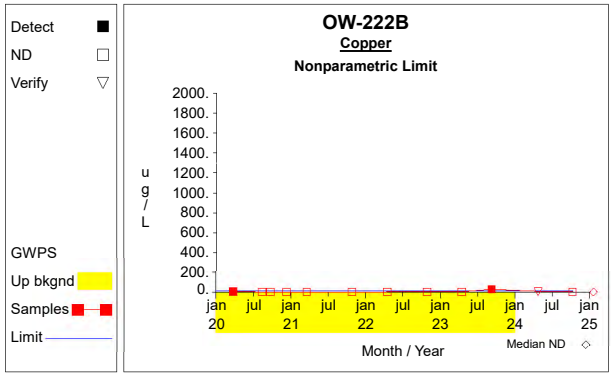
Up vs. Down Prediction Limits



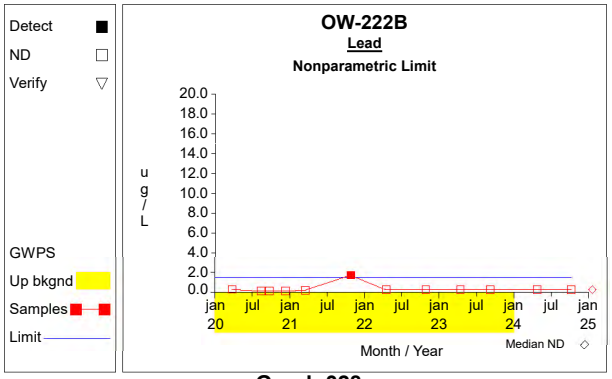
Graph 325



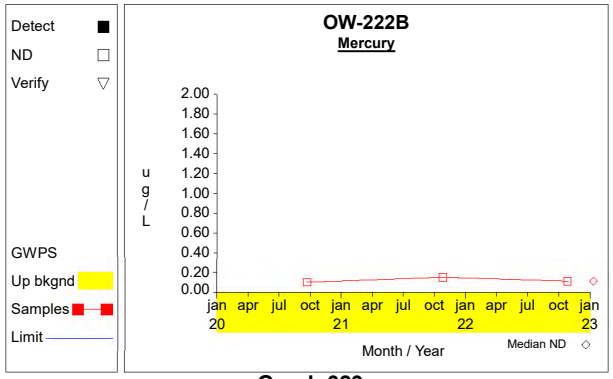
Graph 326



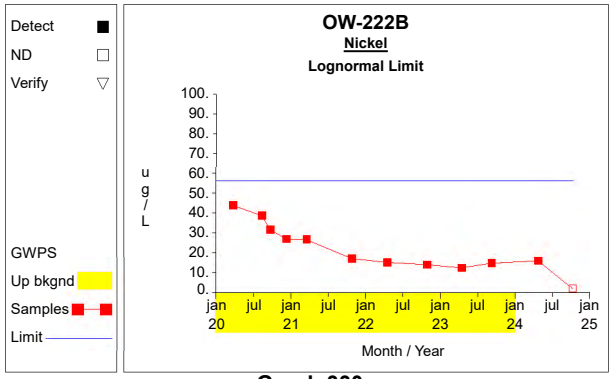
Graph 327



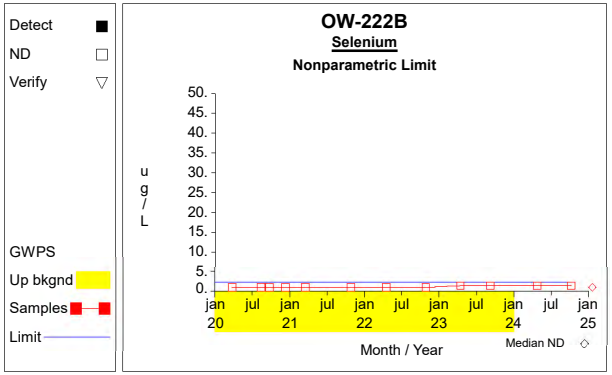
Graph 328



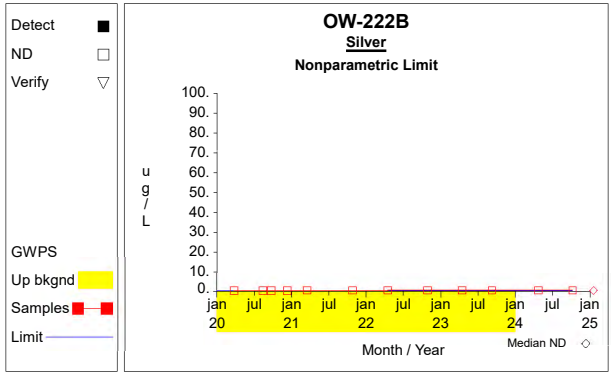
Graph 329



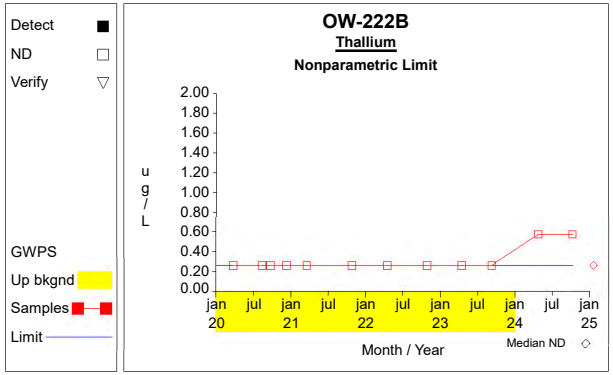
Graph 330



Graph 331

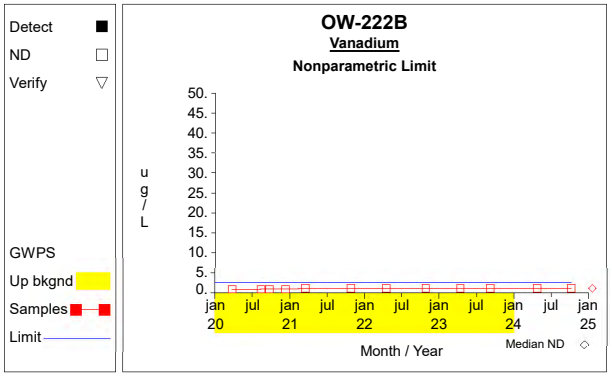


Graph 332

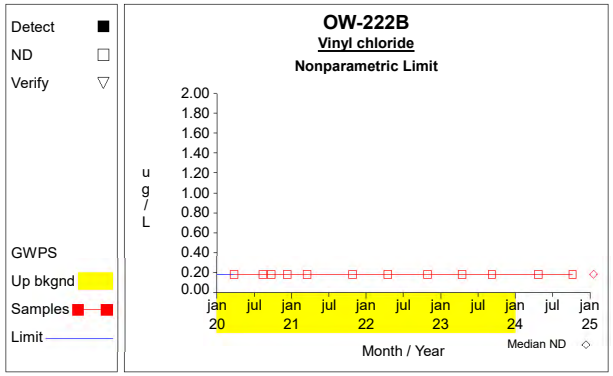


Graph 333

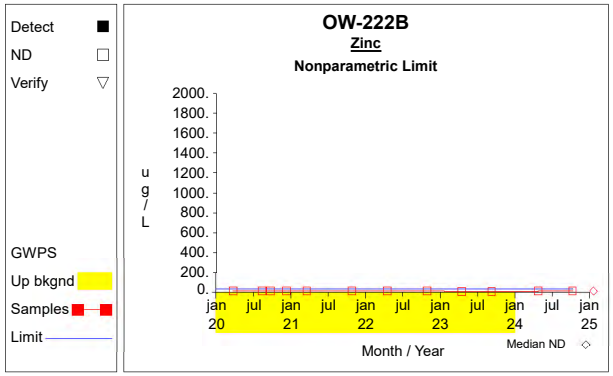
Up vs. Down Prediction Limits



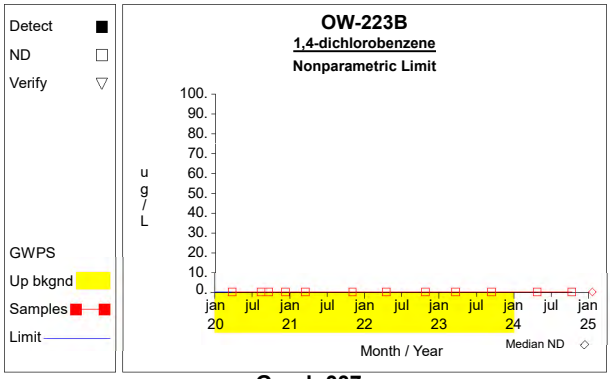
Graph 334



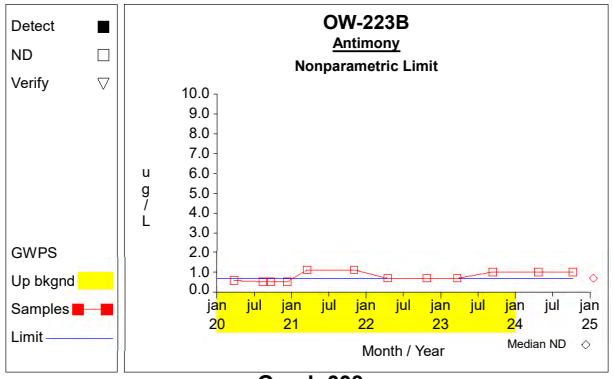
Graph 335



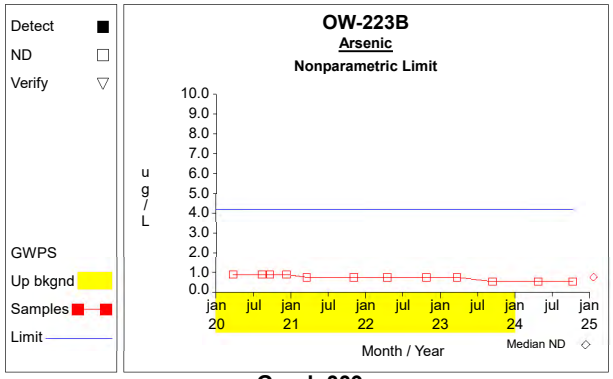
Graph 336



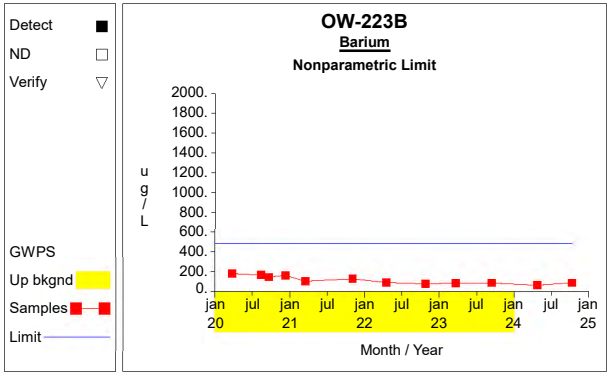
Graph 337



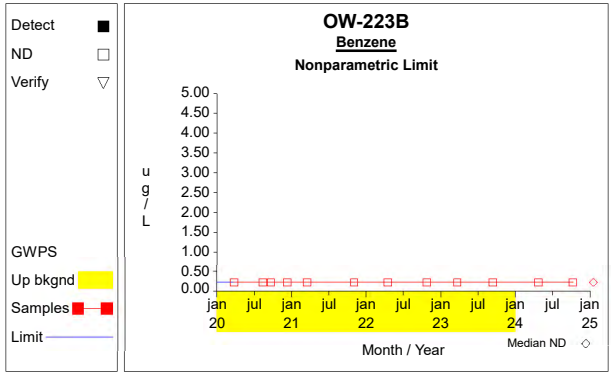
Graph 338



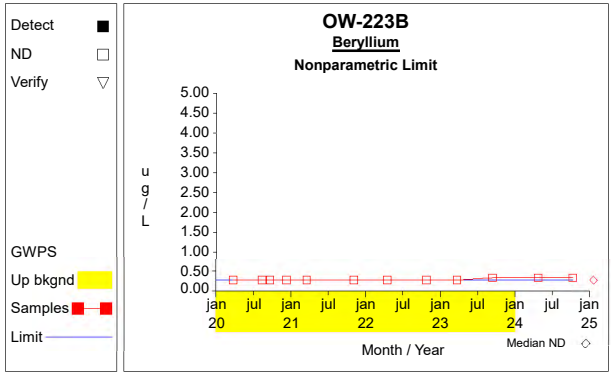
Graph 339



Graph 340

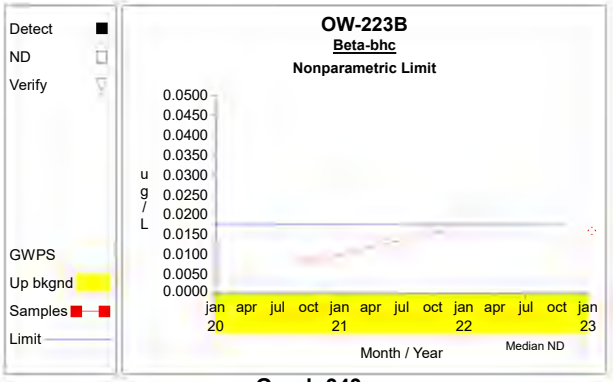


Graph 341

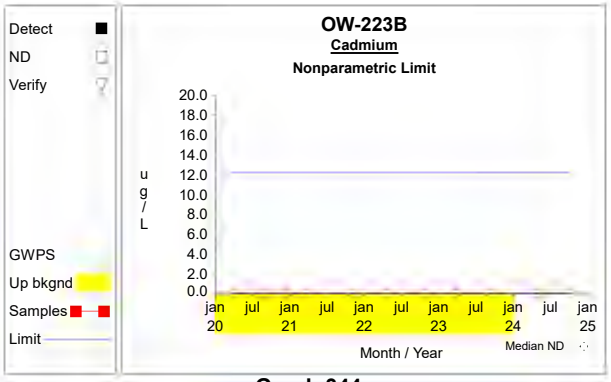


Graph 342

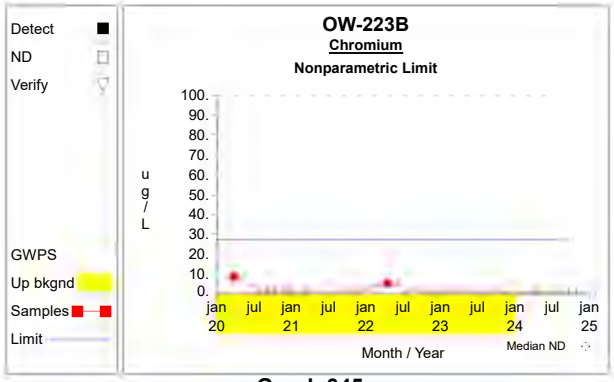
Up vs. Down Prediction Limits



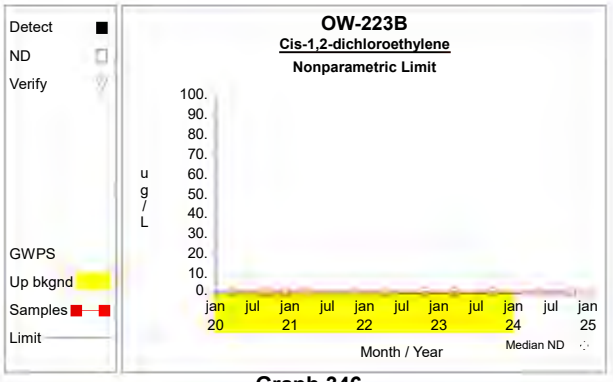
Graph 343



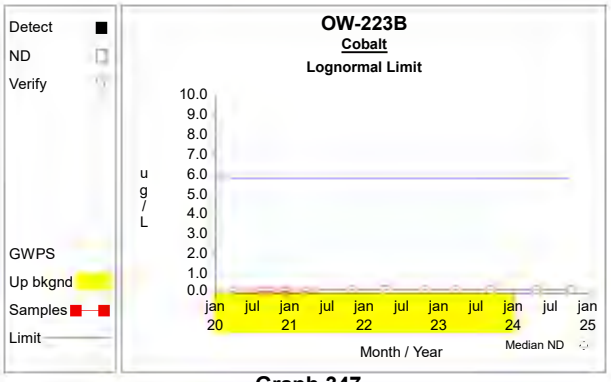
Graph 344



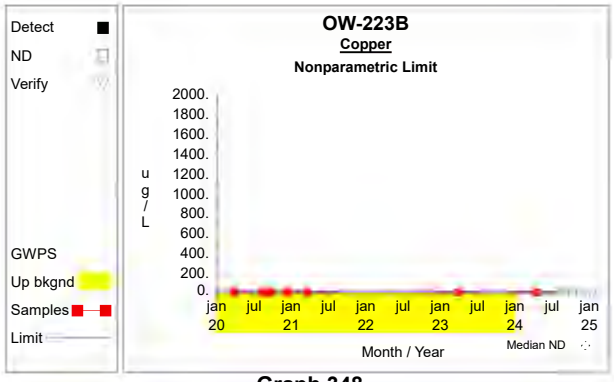
Graph 345



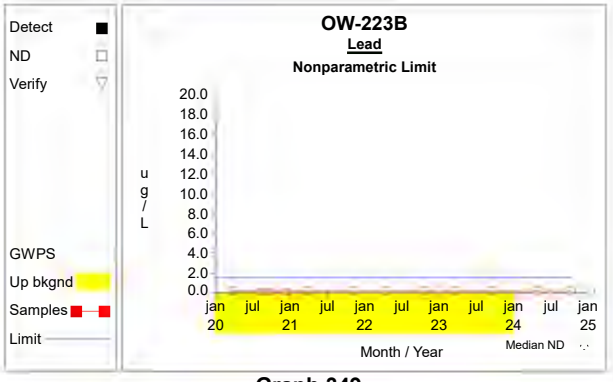
Graph 346



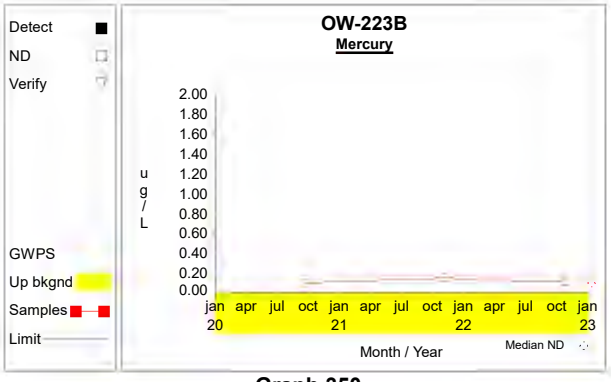
Graph 347



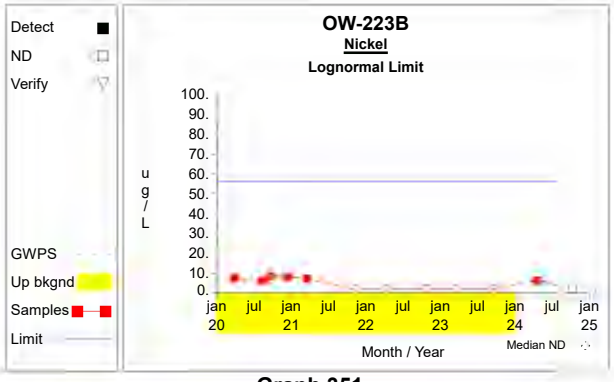
Graph 348



Graph 349

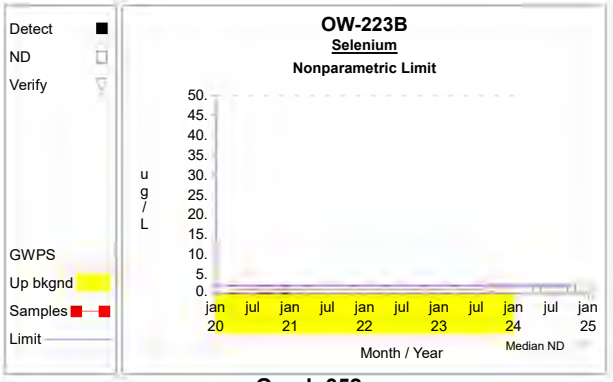


Graph 350

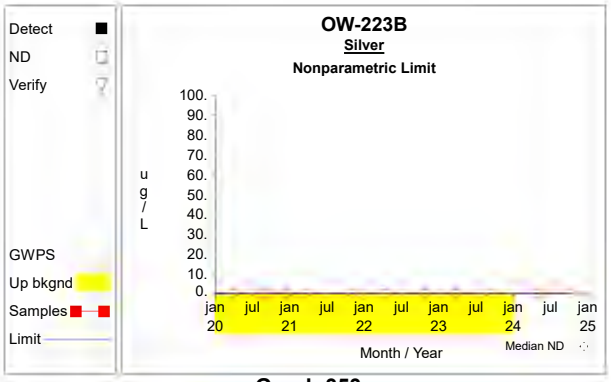


Graph 351

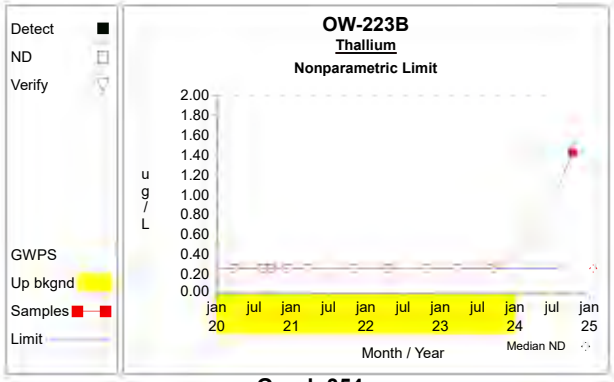
Up vs. Down Prediction Limits



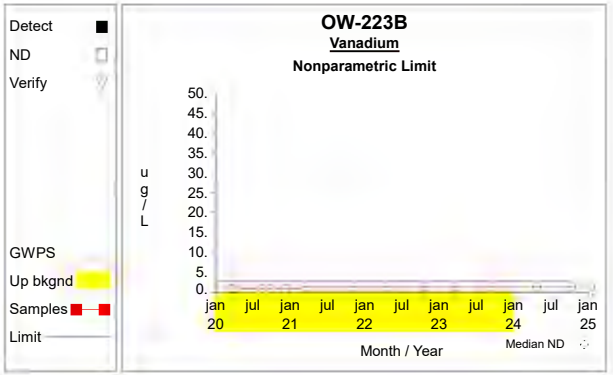
Graph 352



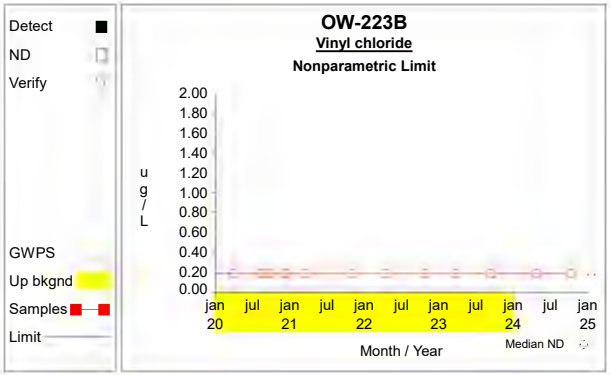
Graph 353



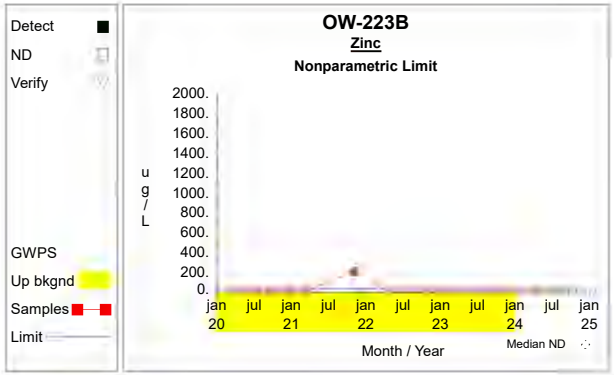
Graph 354



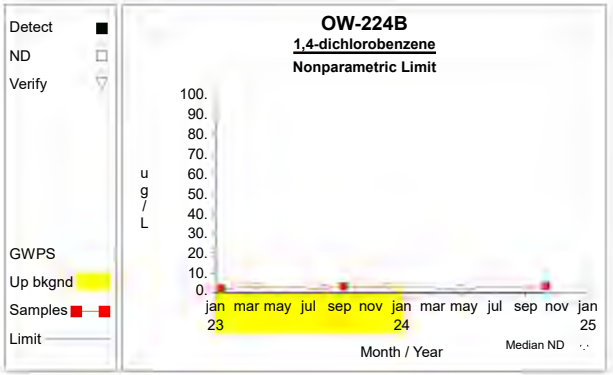
Graph 355



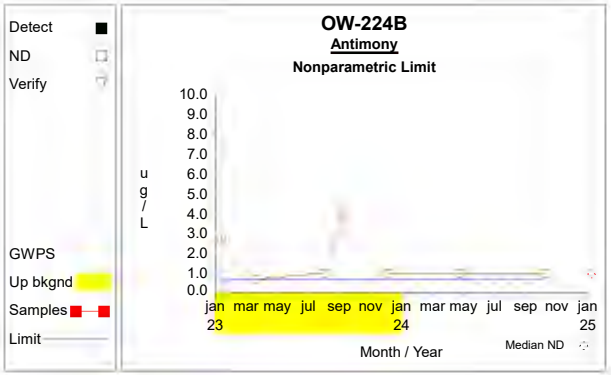
Graph 356



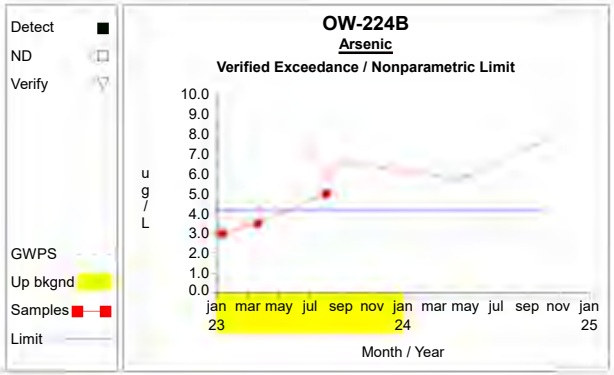
Graph 357



Graph 358

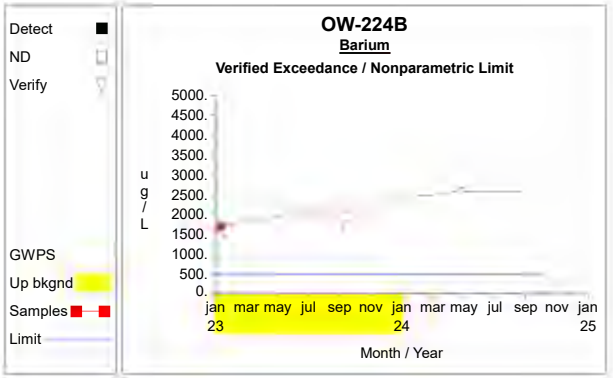


Graph 359

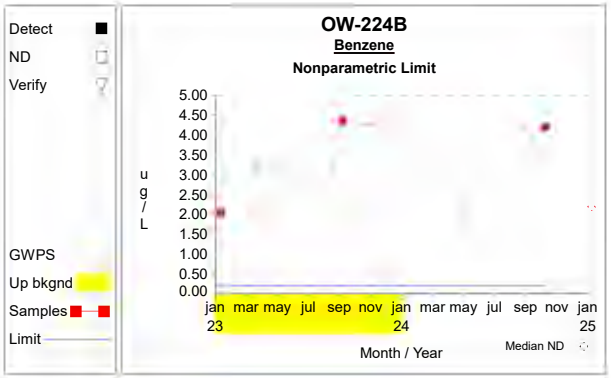


Graph 360

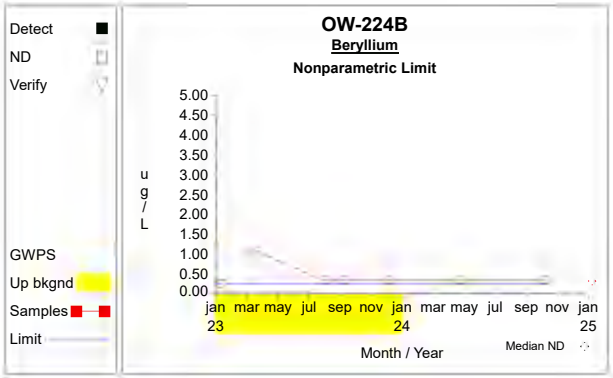
Up vs. Down Prediction Limits



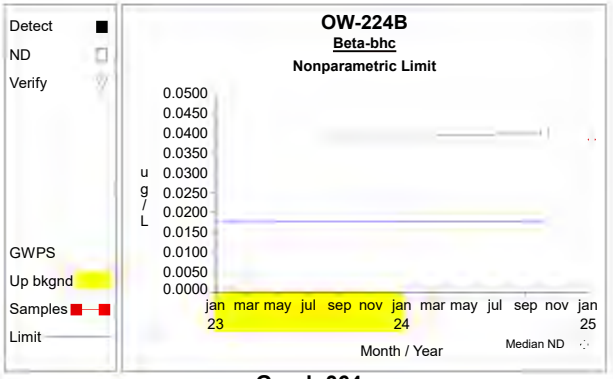
Graph 361



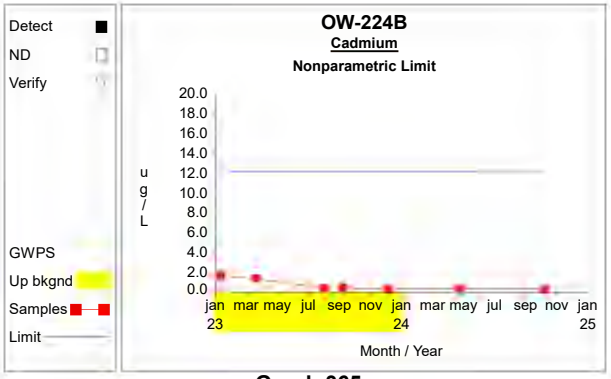
Graph 362



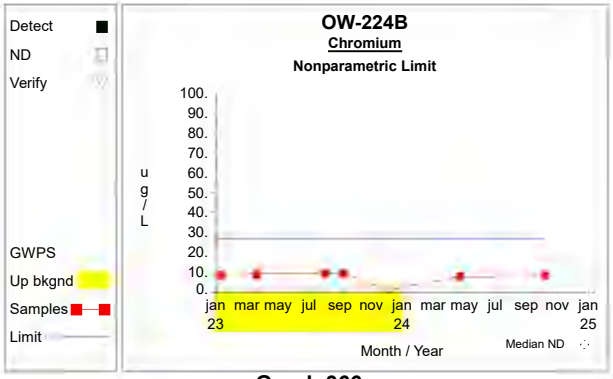
Graph 363



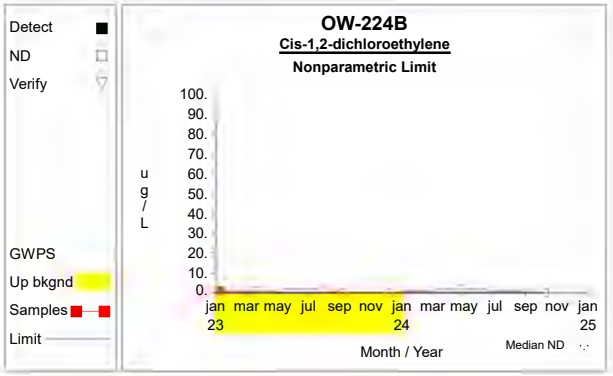
Graph 364



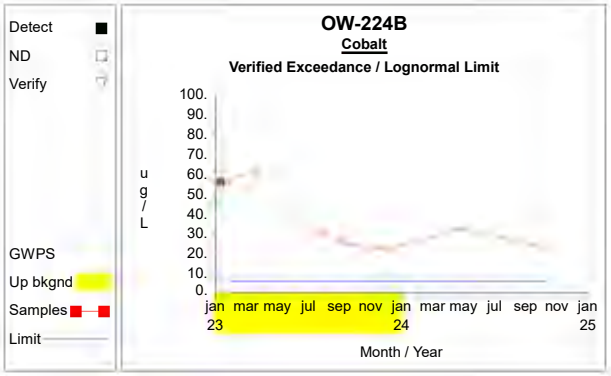
Graph 365



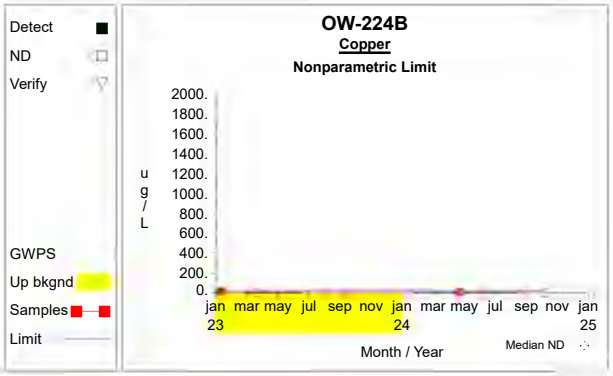
Graph 366



Graph 367

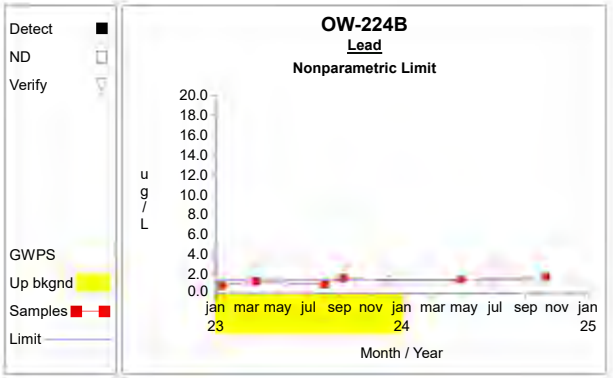


Graph 368

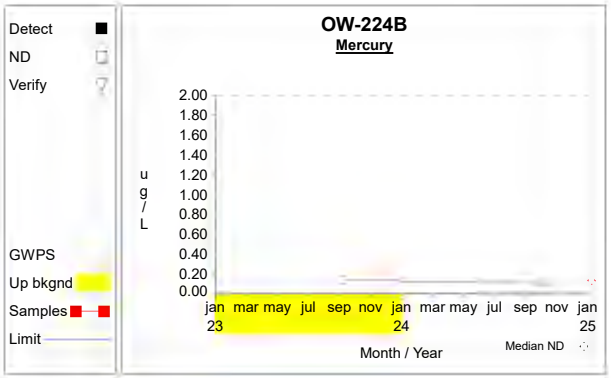


Graph 369

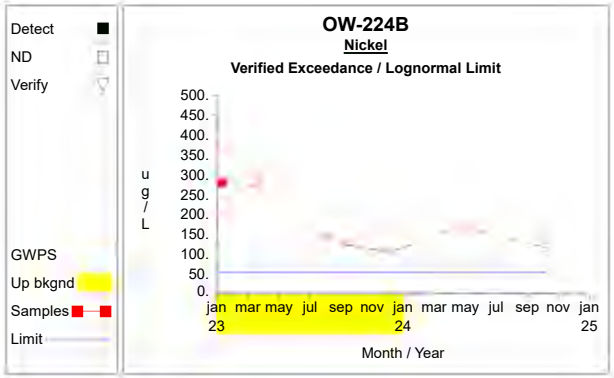
Up vs. Down Prediction Limits



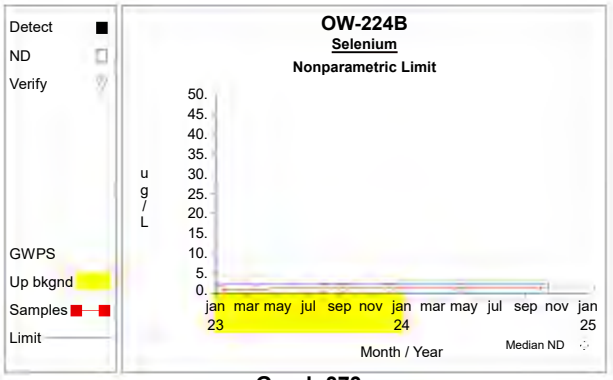
Graph 370



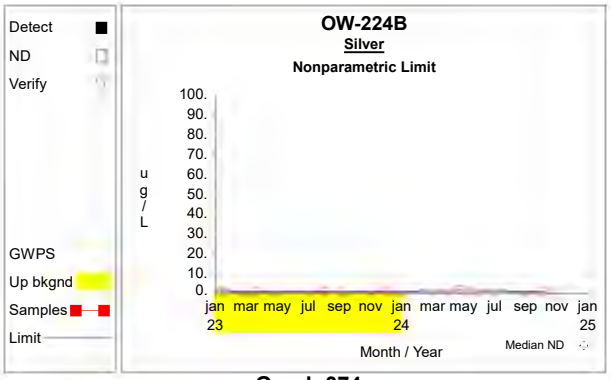
Graph 371



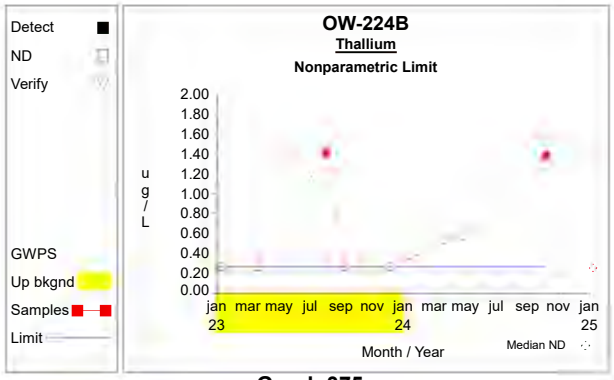
Graph 372



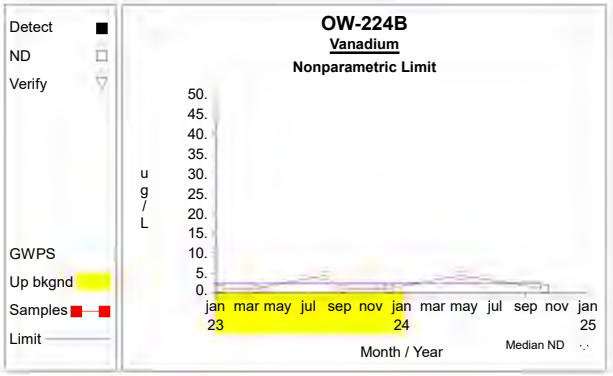
Graph 373



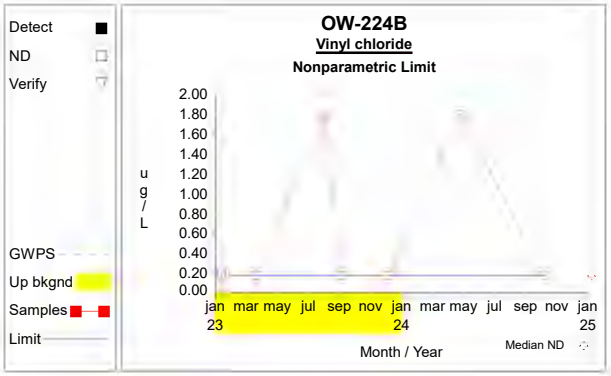
Graph 374



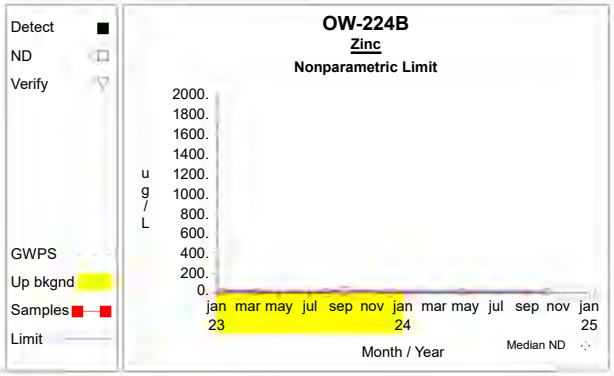
Graph 375



Graph 376

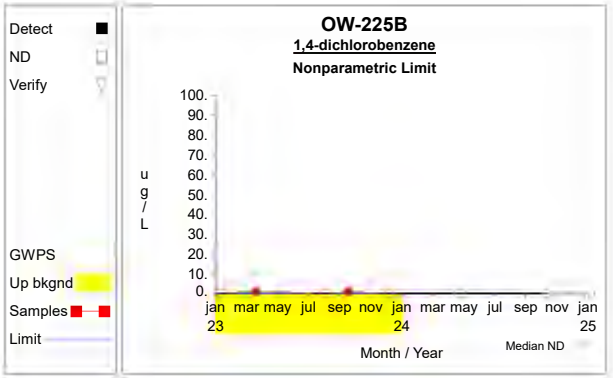


Graph 377

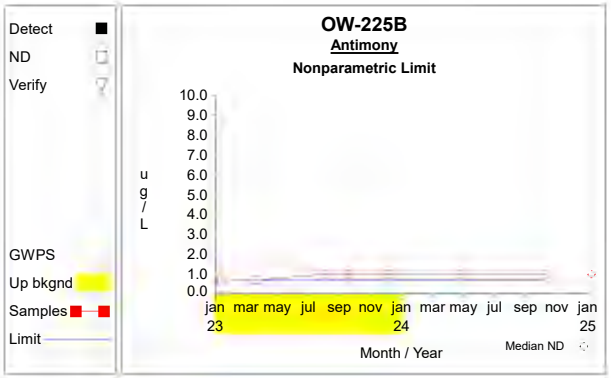


Graph 378

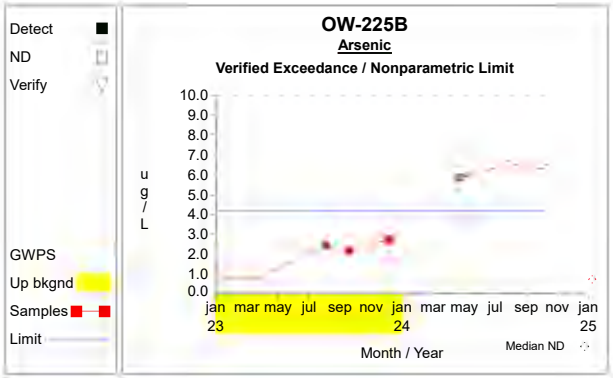
Up vs. Down Prediction Limits



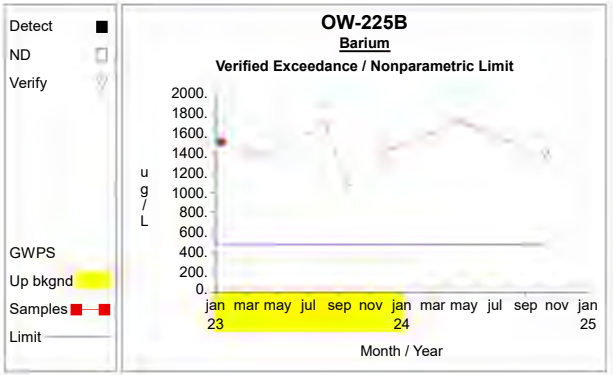
Graph 379



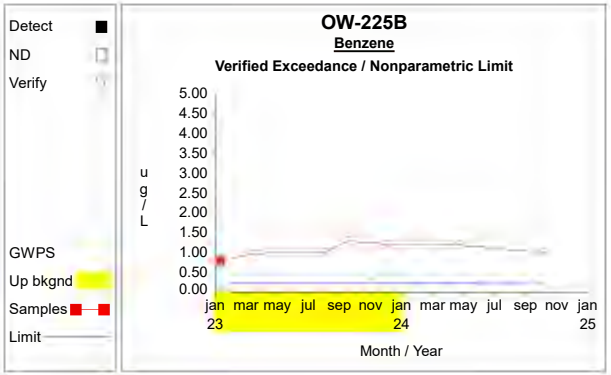
Graph 380



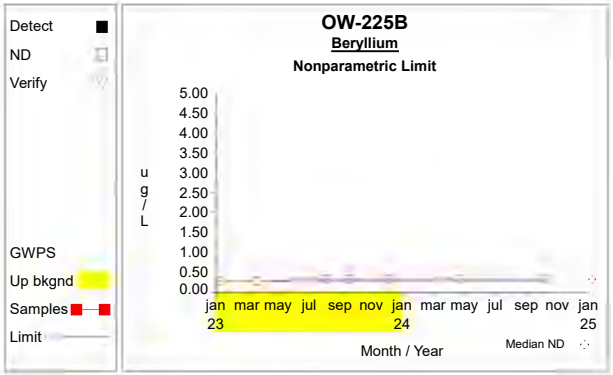
Graph 381



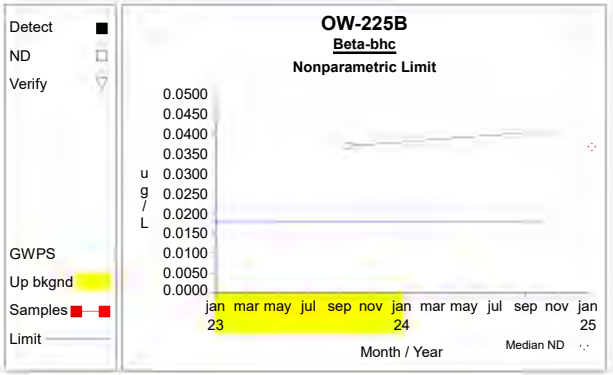
Graph 382



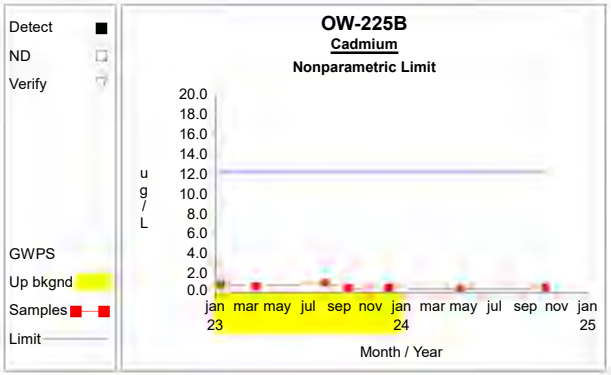
Graph 383



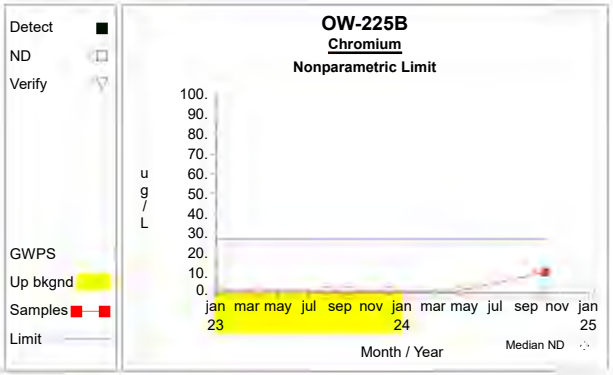
Graph 384



Graph 385

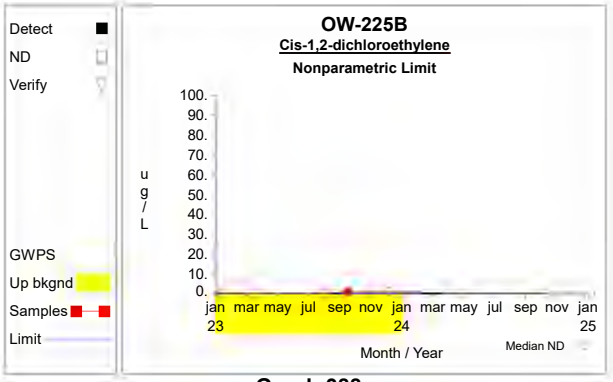


Graph 386

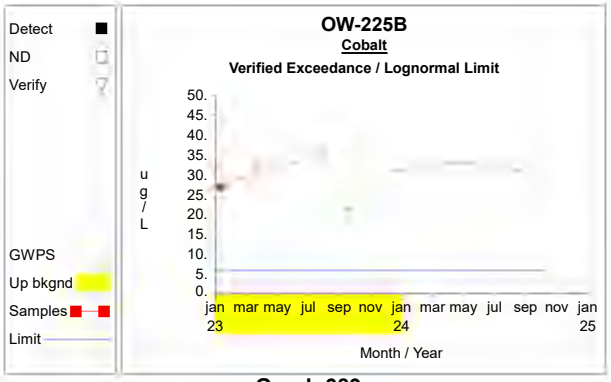


Graph 387

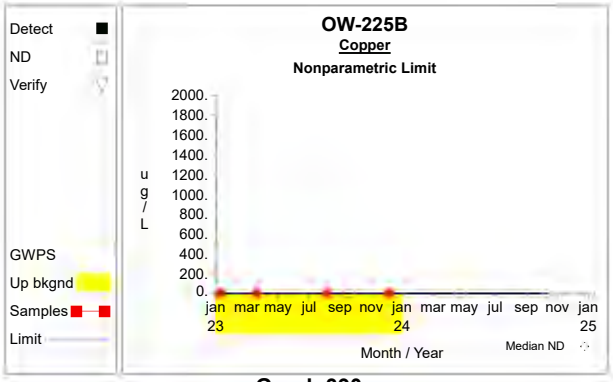
Up vs. Down Prediction Limits



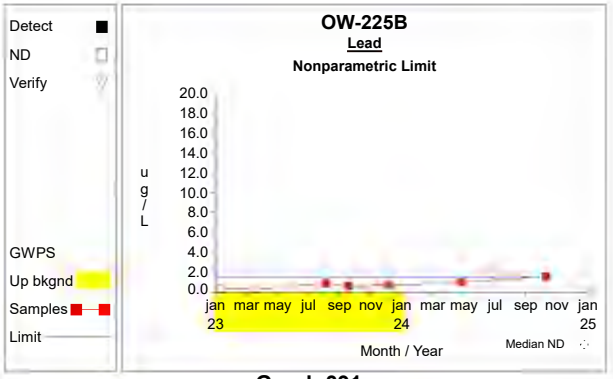
Graph 388



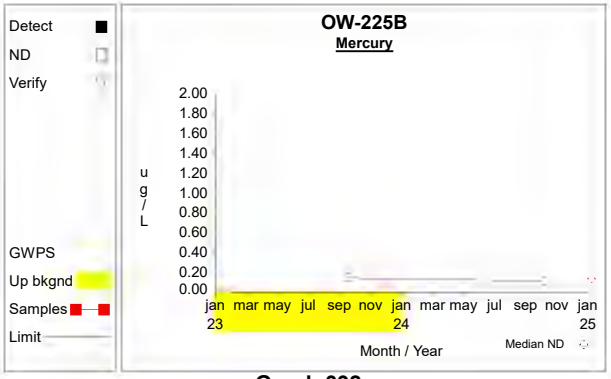
Graph 389



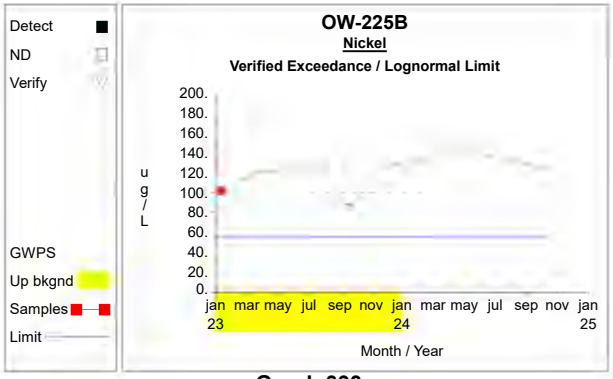
Graph 390



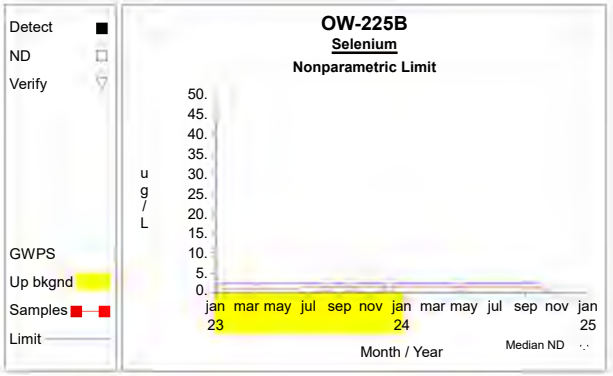
Graph 391



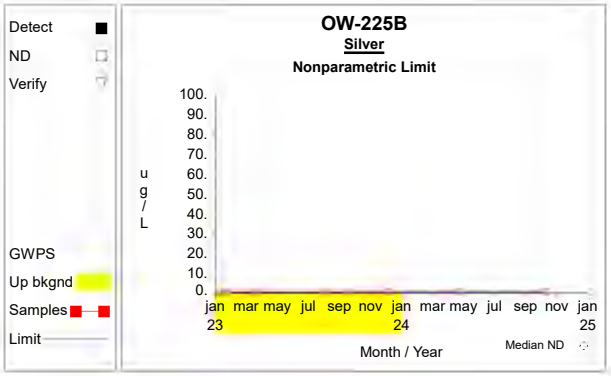
Graph 392



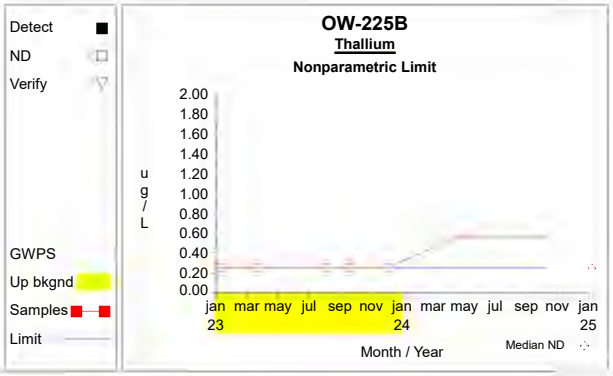
Graph 393



Graph 394

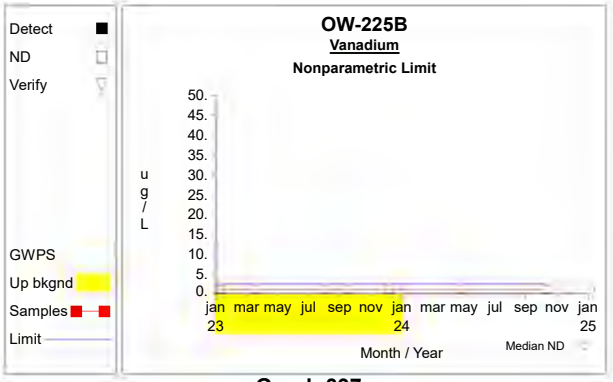


Graph 395

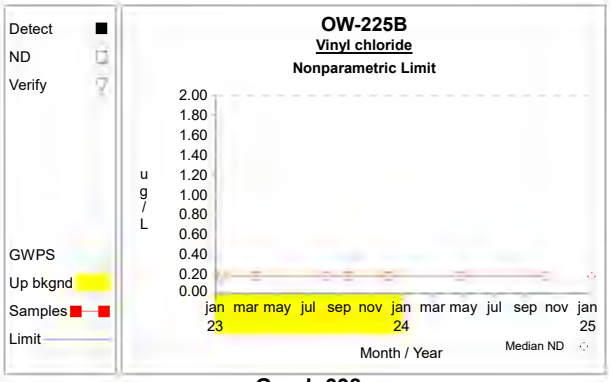


Graph 396

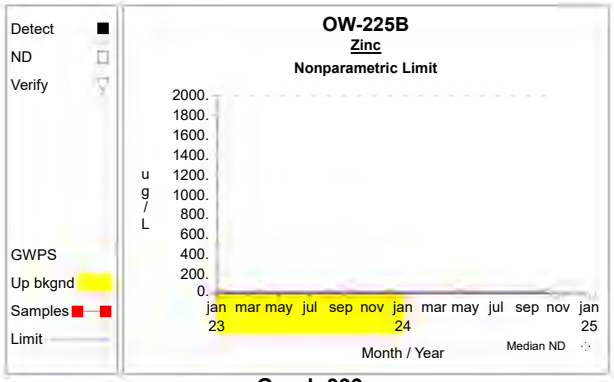
Up vs. Down Prediction Limits



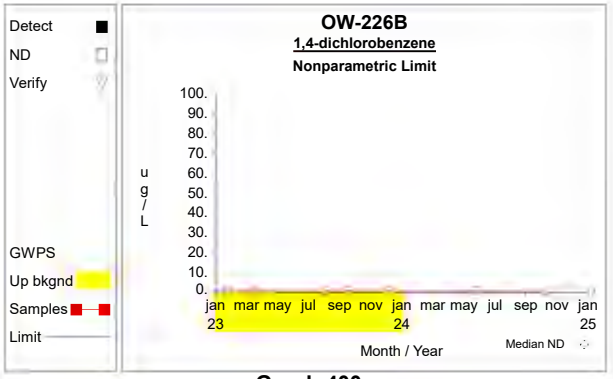
Graph 397



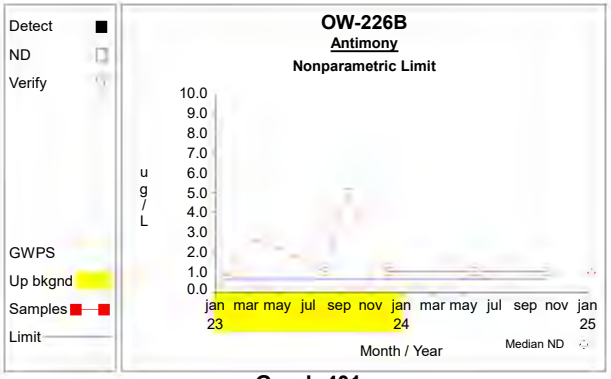
Graph 398



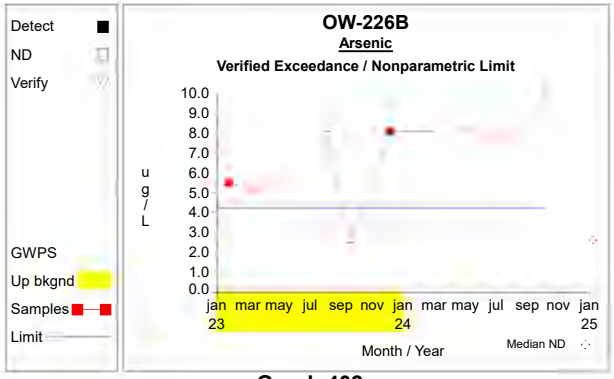
Graph 399



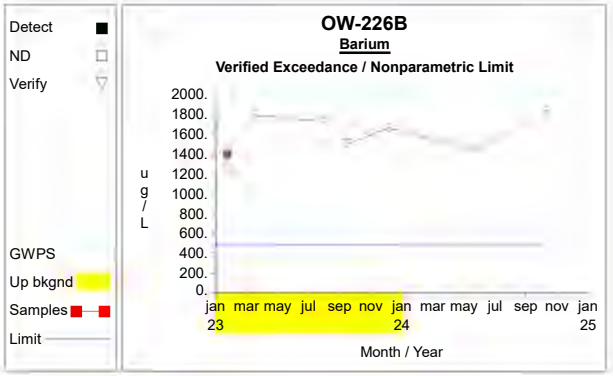
Graph 400



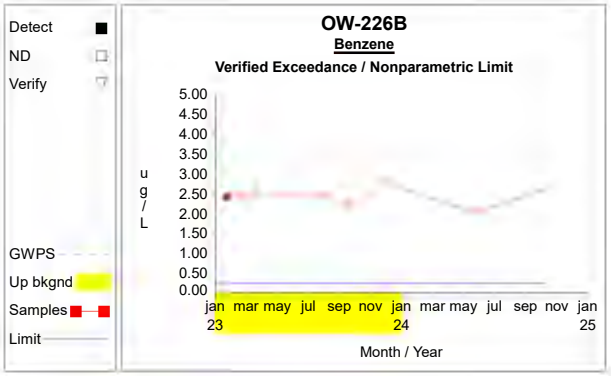
Graph 401



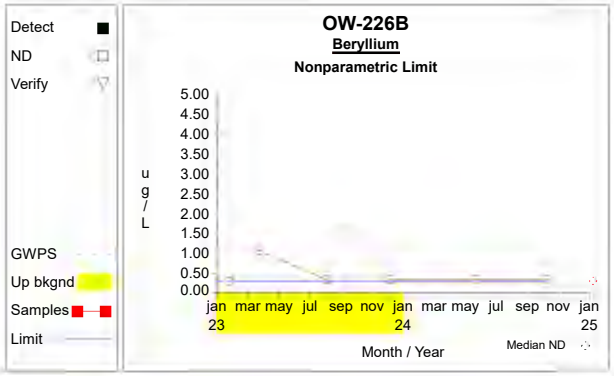
Graph 402



Graph 403

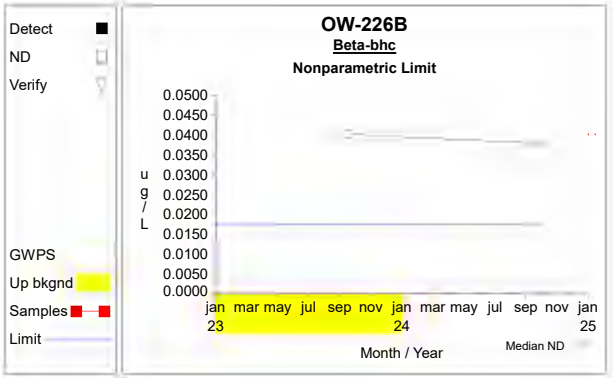


Graph 404

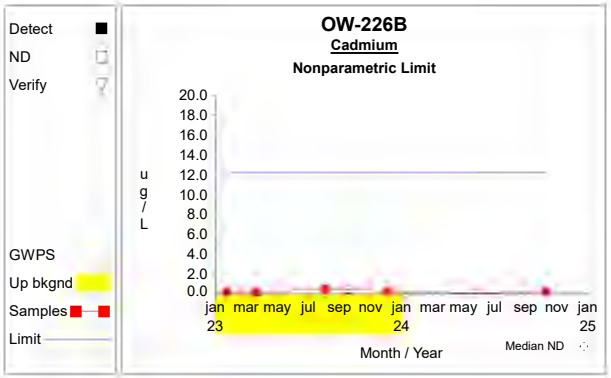


Graph 405

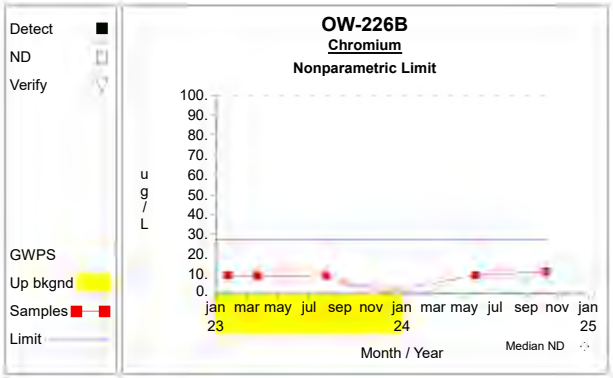
Up vs. Down Prediction Limits



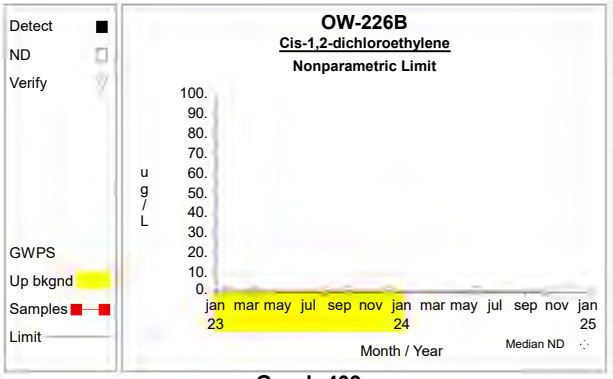
Graph 406



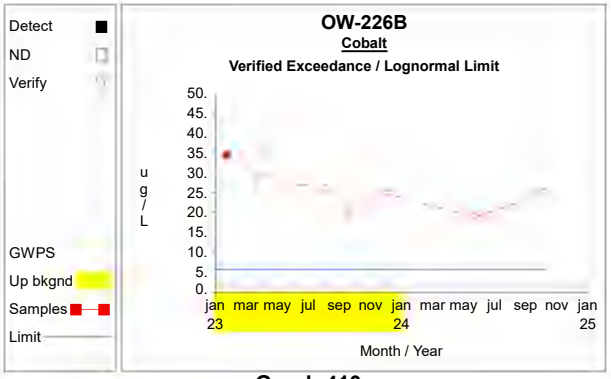
Graph 407



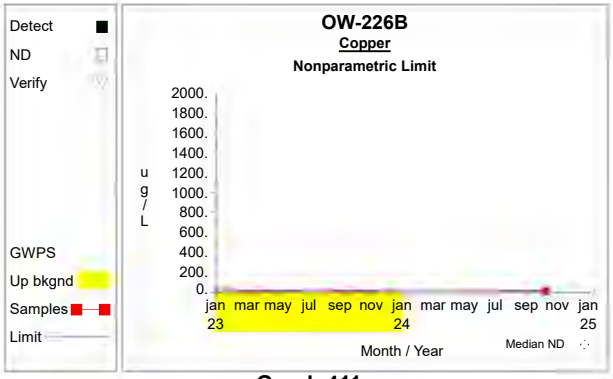
Graph 408



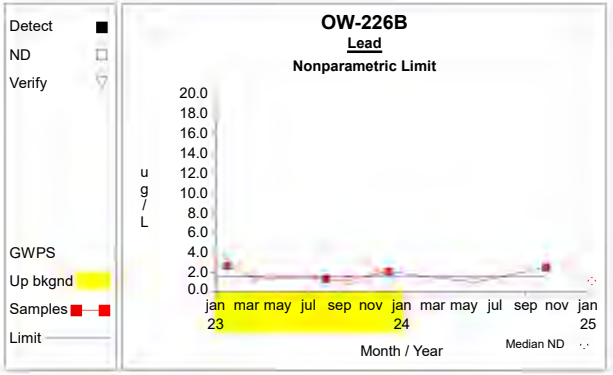
Graph 409



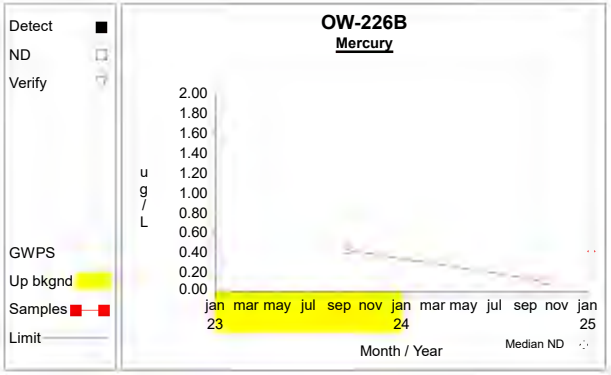
Graph 410



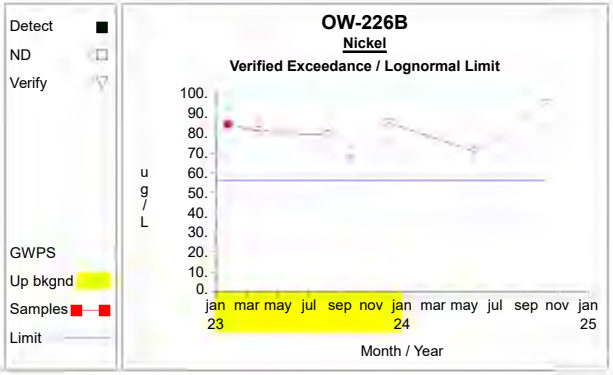
Graph 411



Graph 412

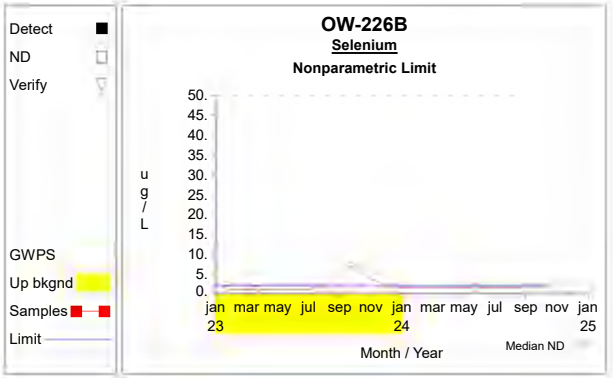


Graph 413

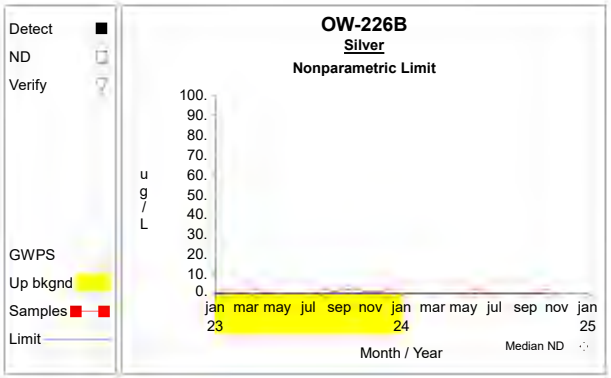


Graph 414

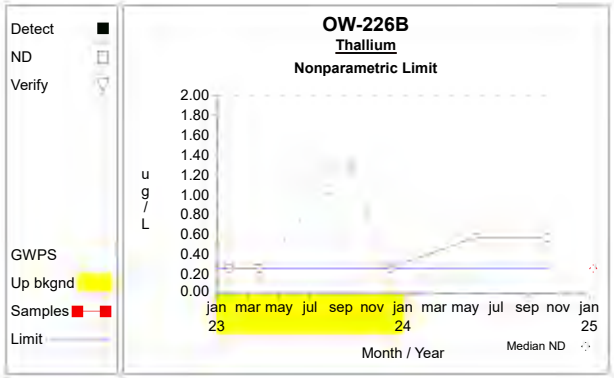
Up vs. Down Prediction Limits



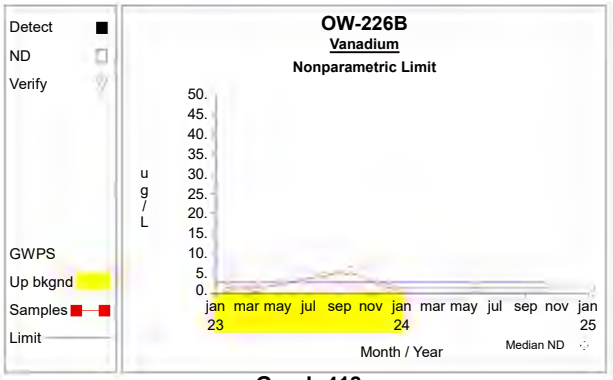
Graph 415



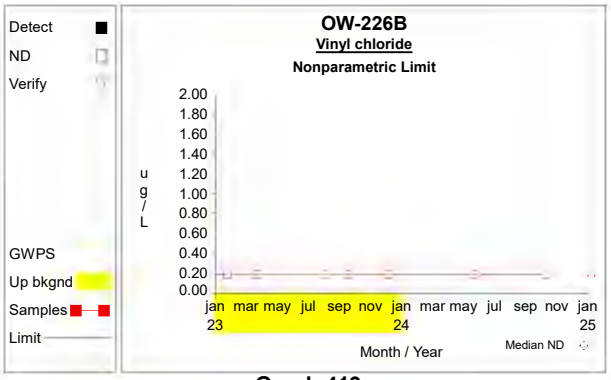
Graph 416



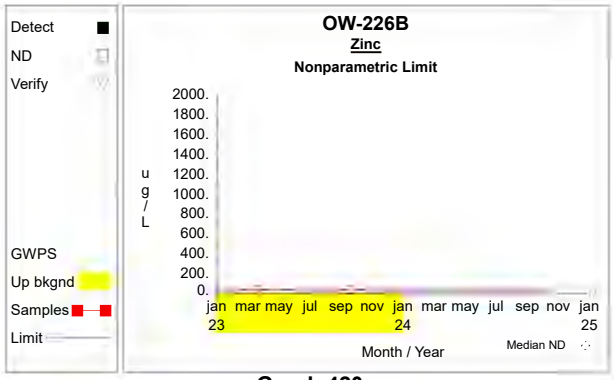
Graph 417



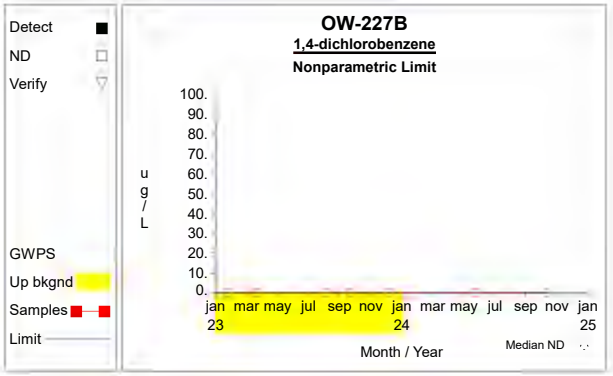
Graph 418



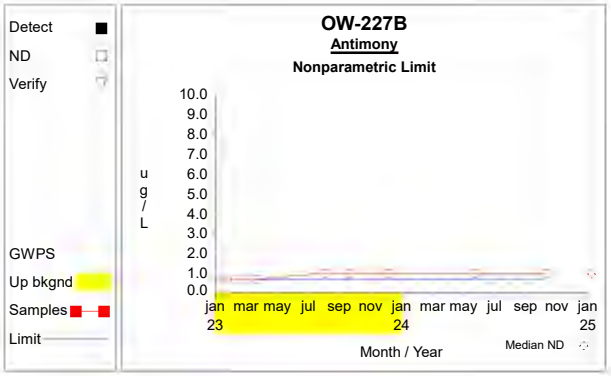
Graph 419



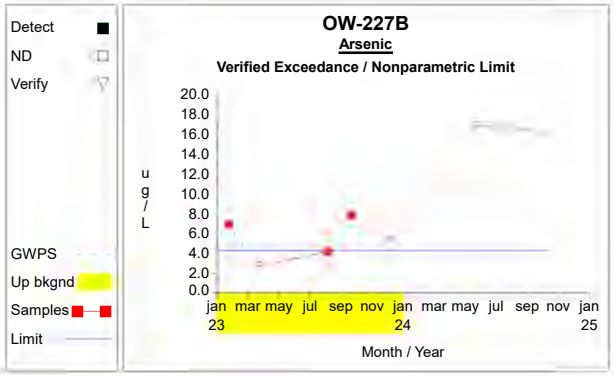
Graph 420



Graph 421

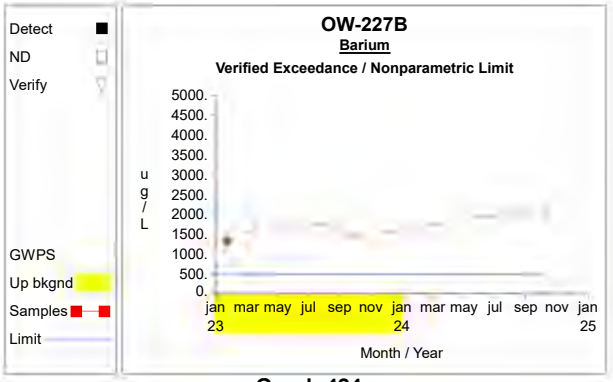


Graph 422

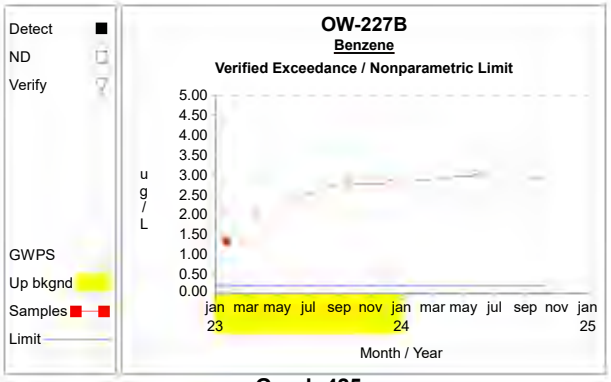


Graph 423

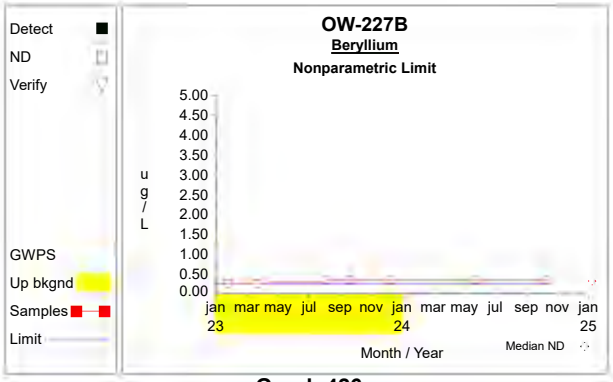
Up vs. Down Prediction Limits



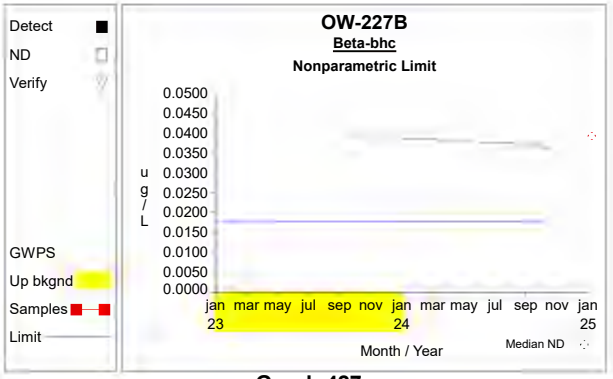
Graph 424



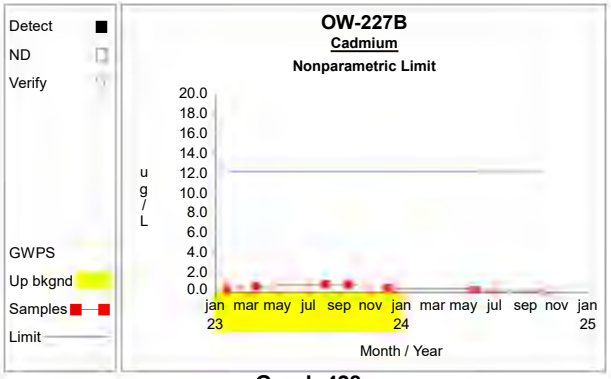
Graph 425



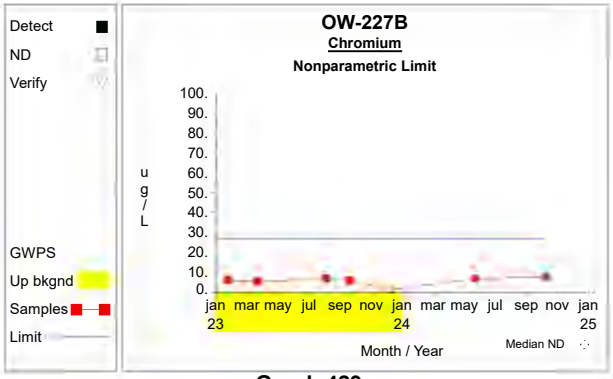
Graph 426



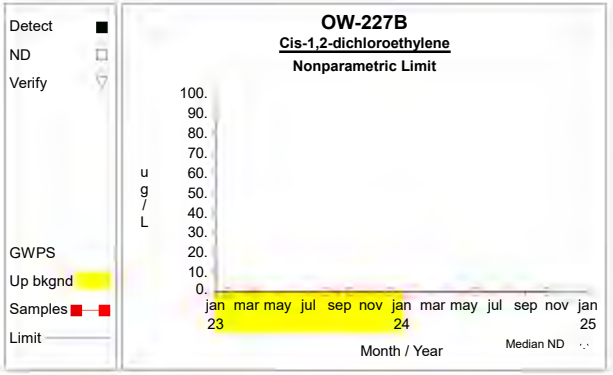
Graph 427



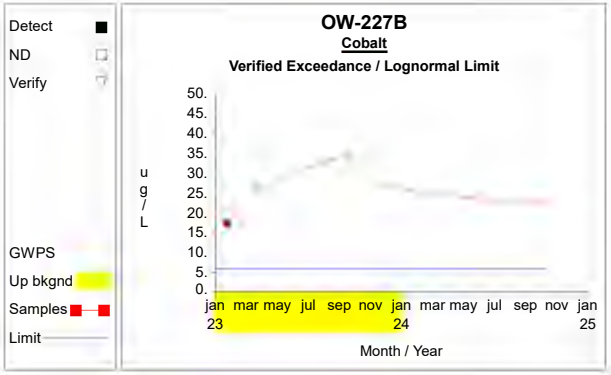
Graph 428



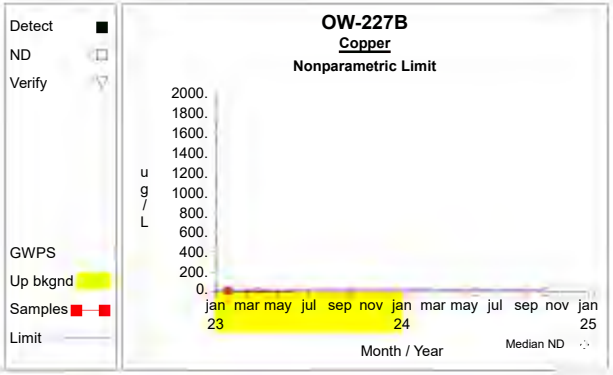
Graph 429



Graph 430

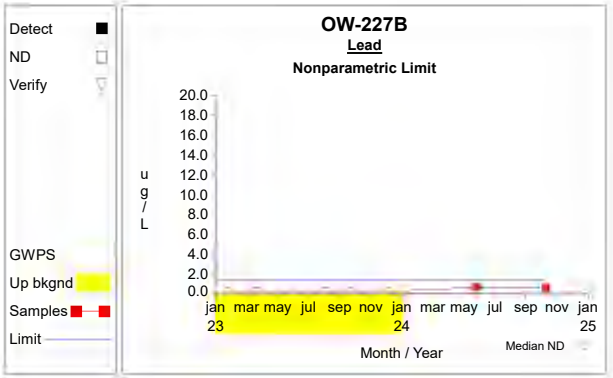


Graph 431

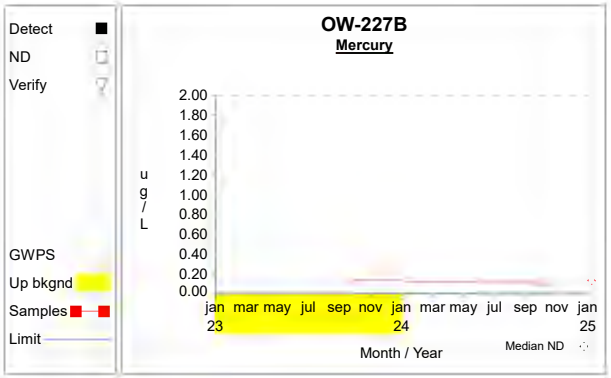


Graph 432

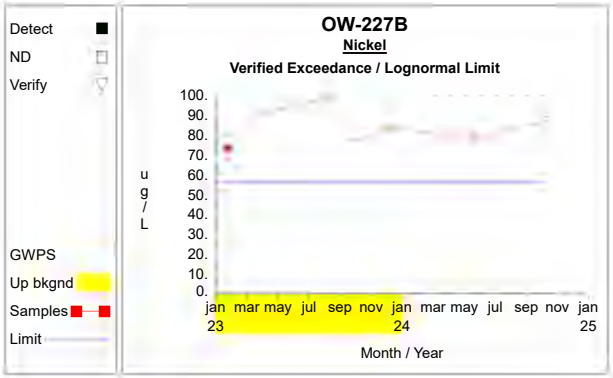
Up vs. Down Prediction Limits



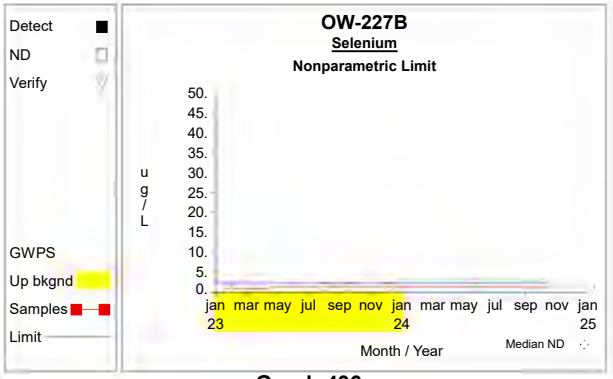
Graph 433



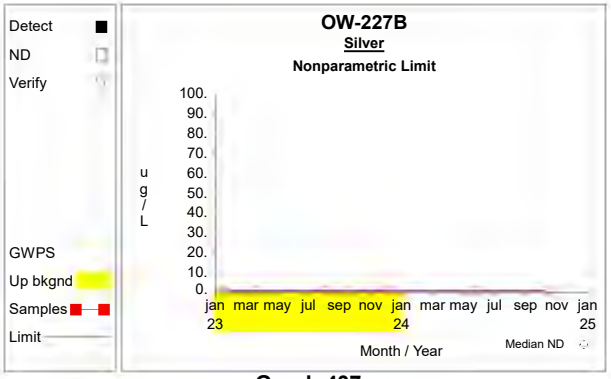
Graph 434



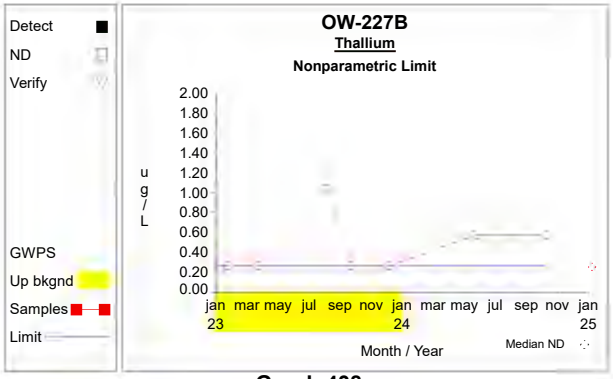
Graph 435



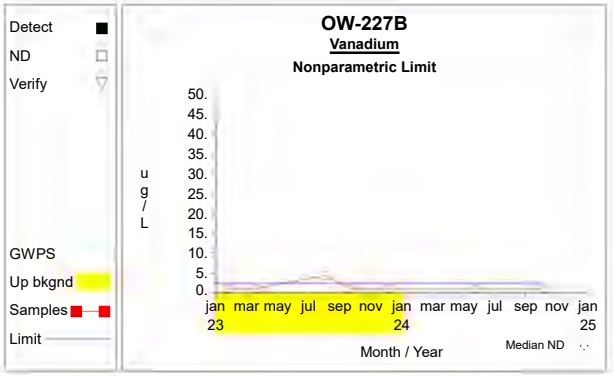
Graph 436



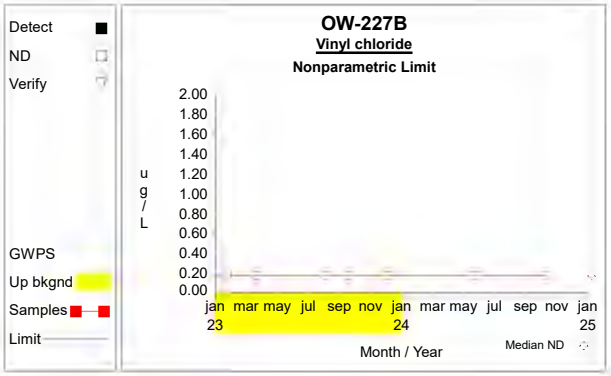
Graph 437



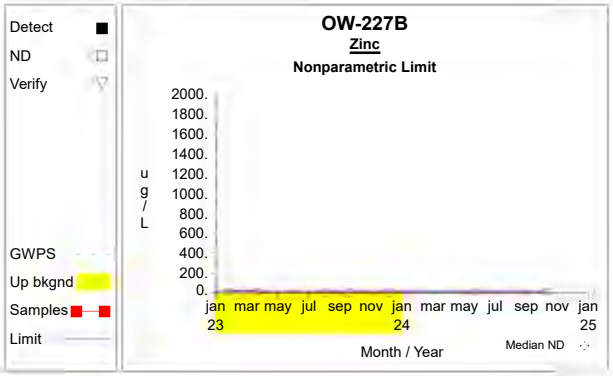
Graph 438



Graph 439

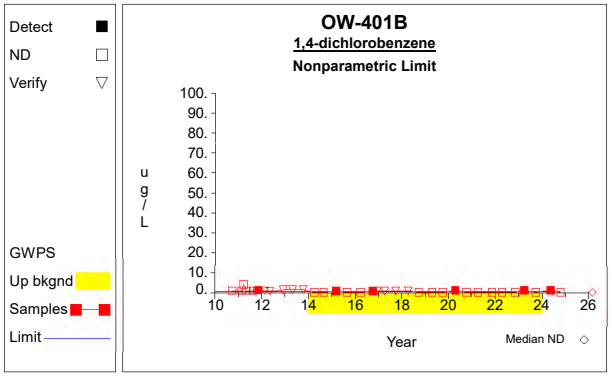


Graph 440

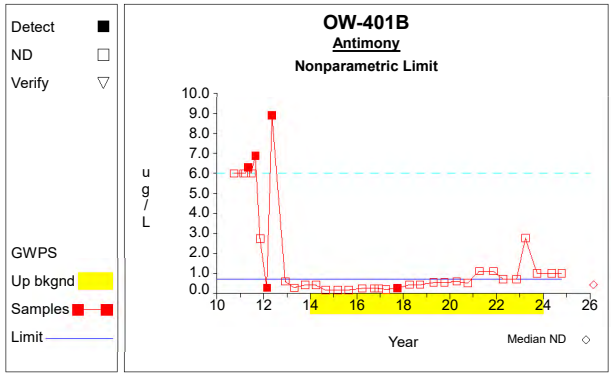


Graph 441

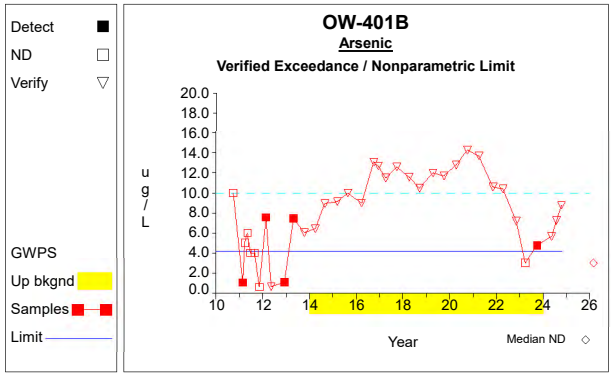
Up vs. Down Prediction Limits



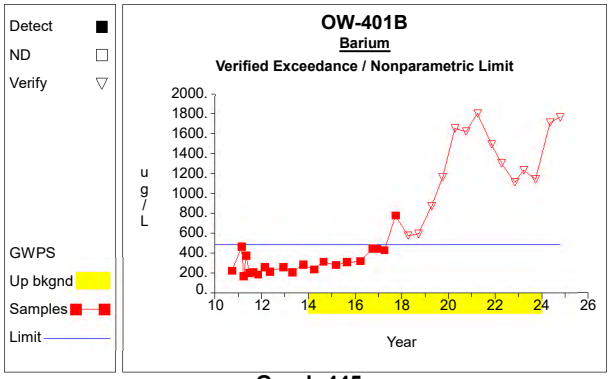
Graph 442



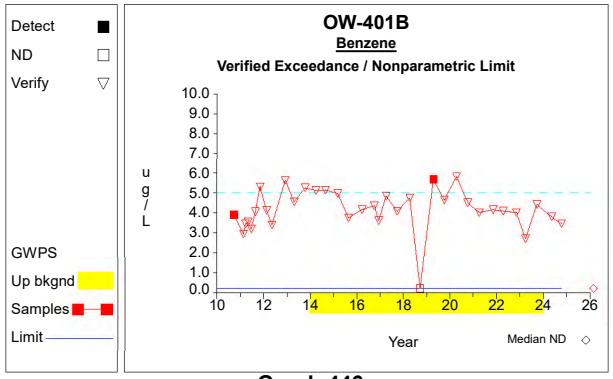
Graph 443



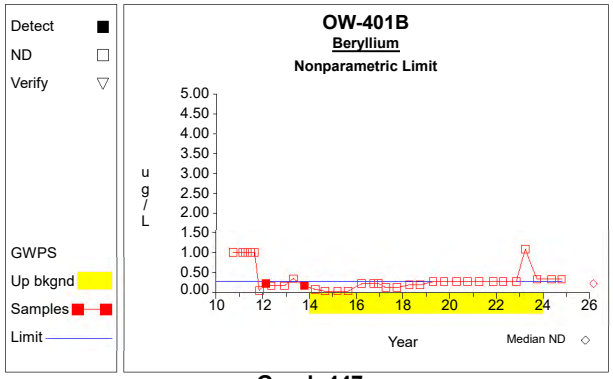
Graph 444



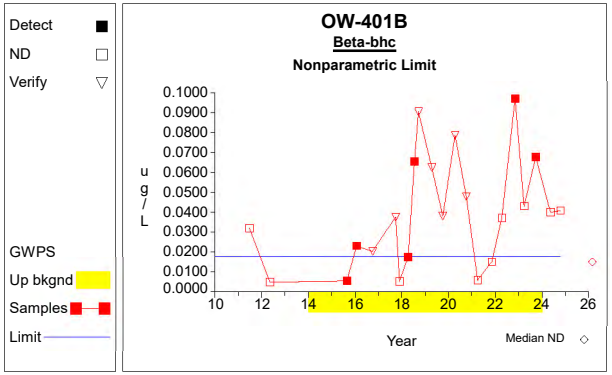
Graph 445



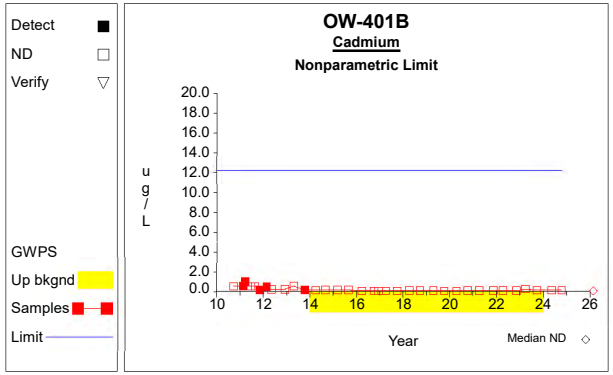
Graph 446



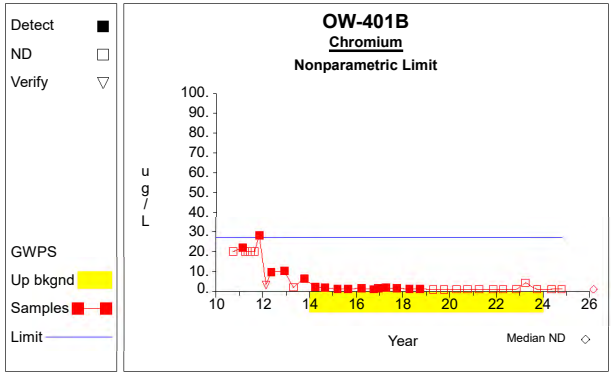
Graph 447



Graph 448

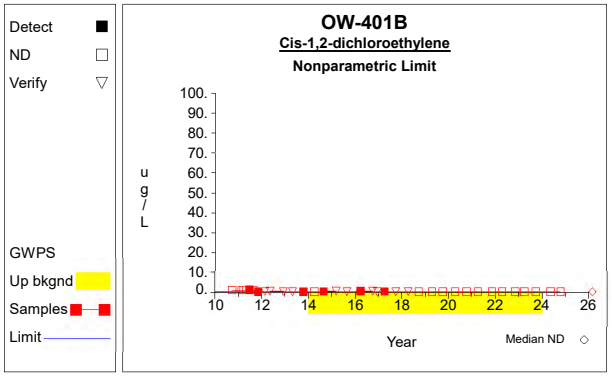


Graph 449

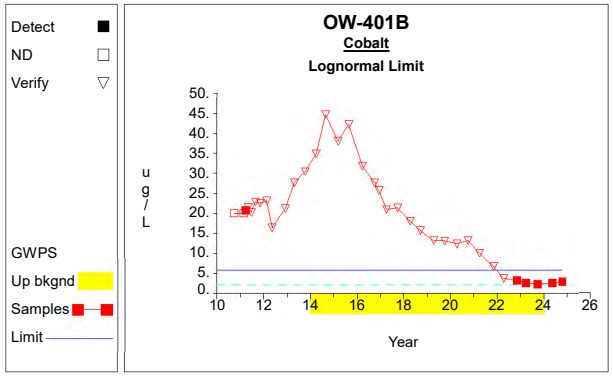


Graph 450

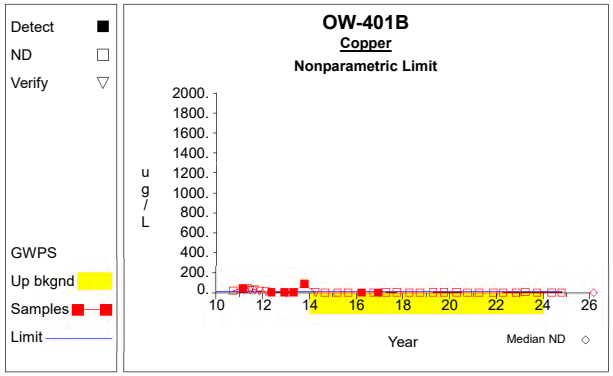
Up vs. Down Prediction Limits



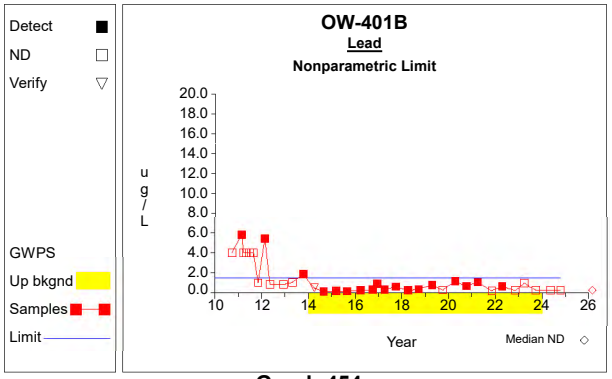
Graph 451



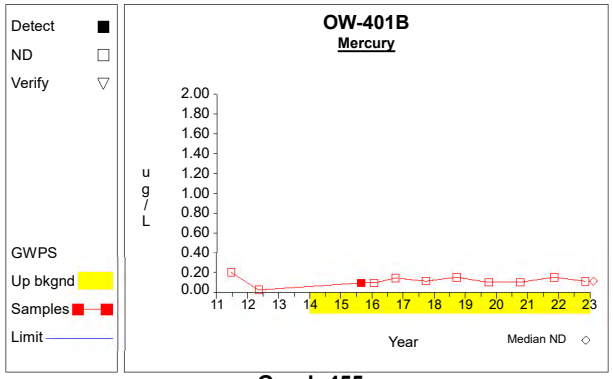
Graph 452



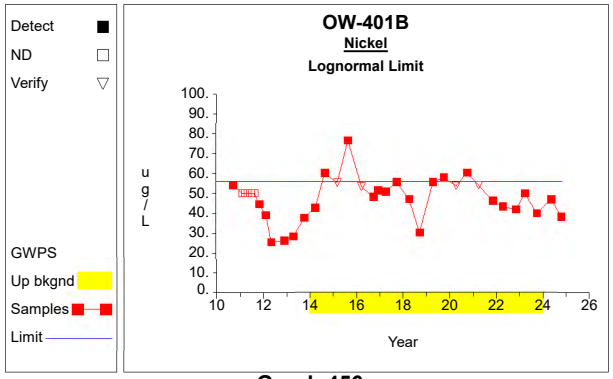
Graph 453



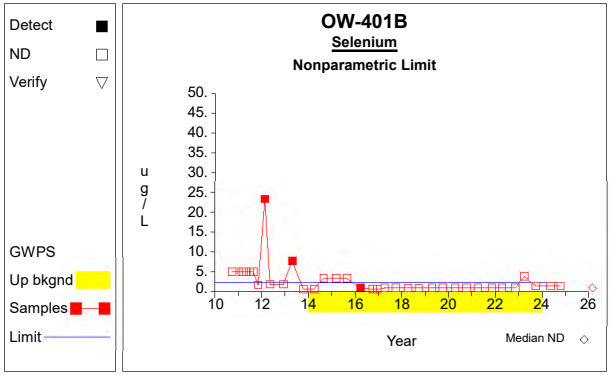
Graph 454



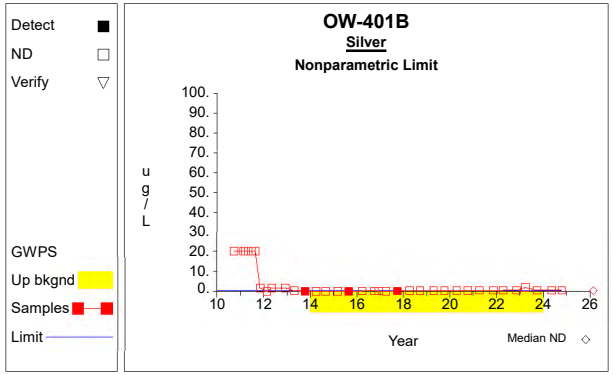
Graph 455



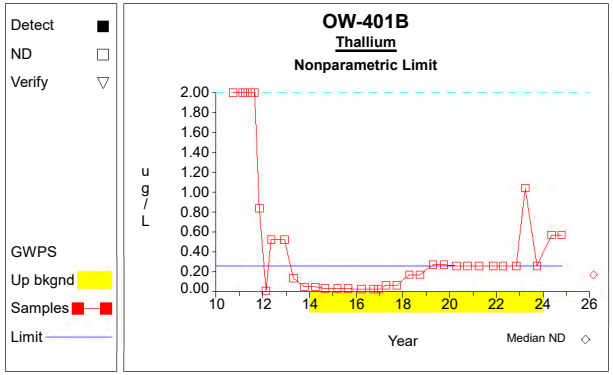
Graph 456



Graph 457

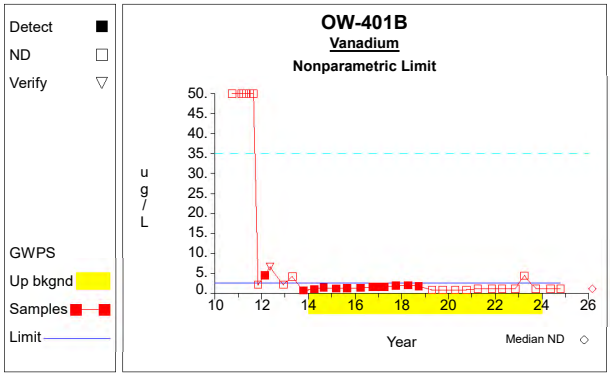


Graph 458

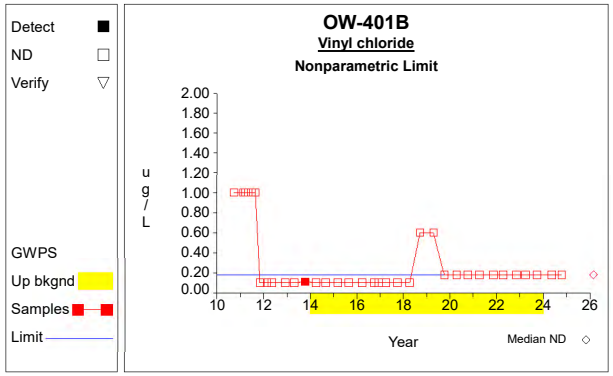


Graph 459

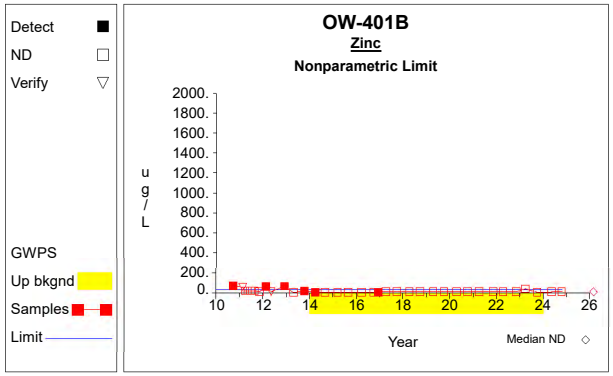
Up vs. Down Prediction Limits



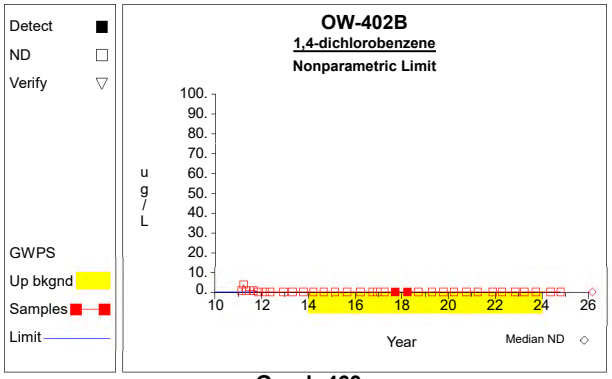
Graph 460



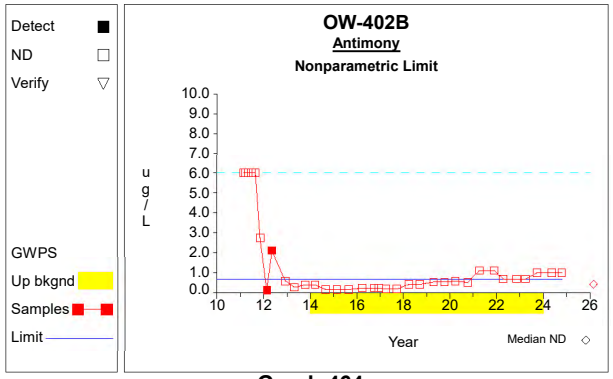
Graph 461



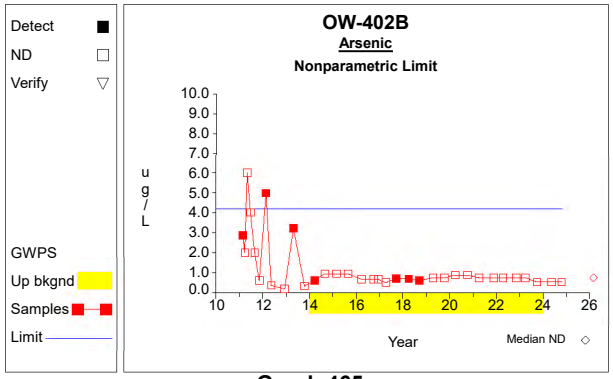
Graph 462



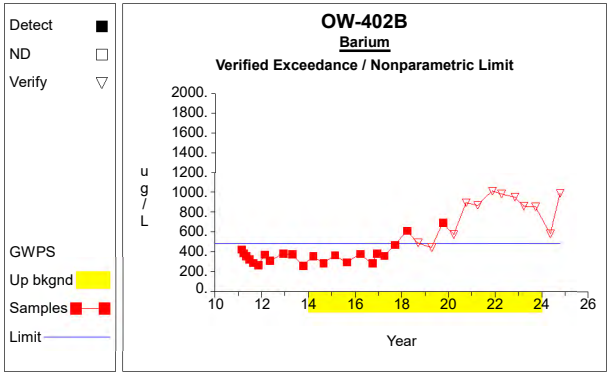
Graph 463



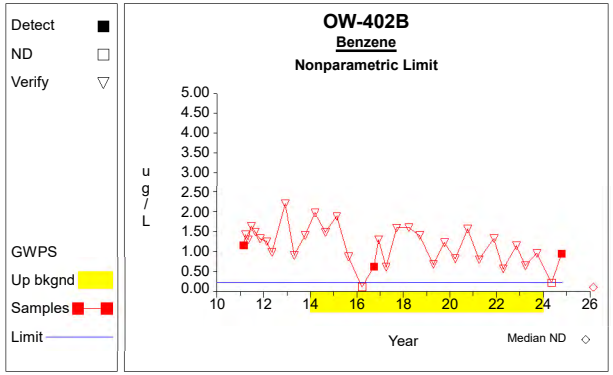
Graph 464



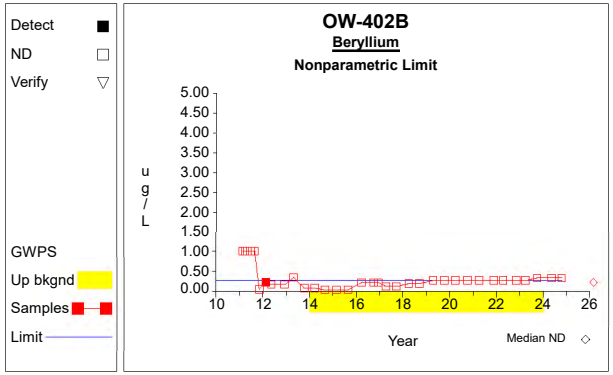
Graph 465



Graph 466

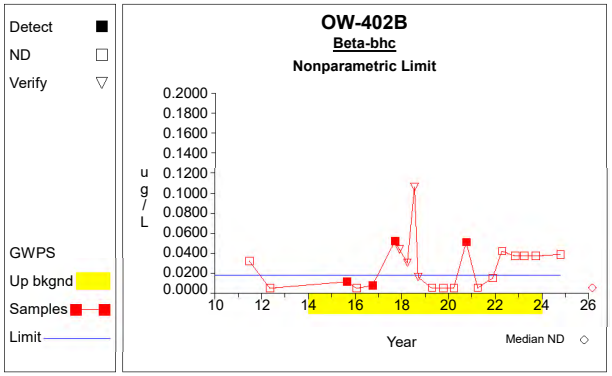


Graph 467

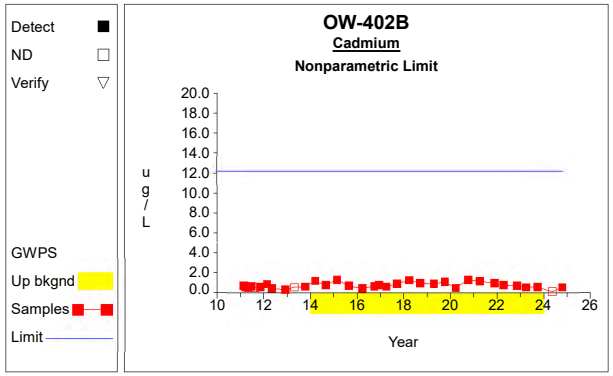


Graph 468

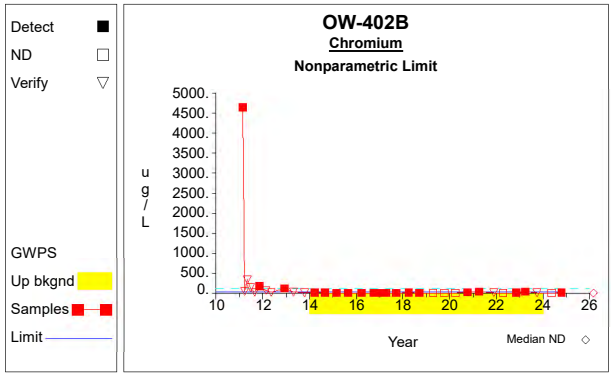
Up vs. Down Prediction Limits



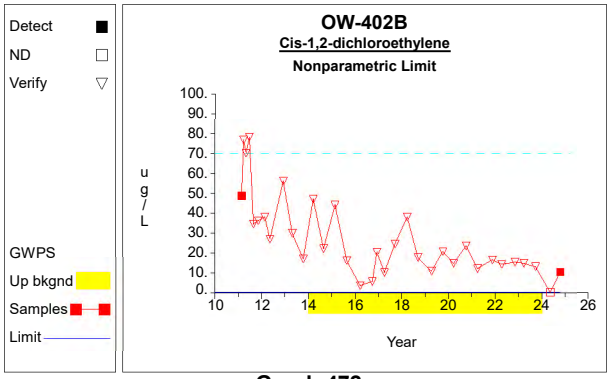
Graph 469



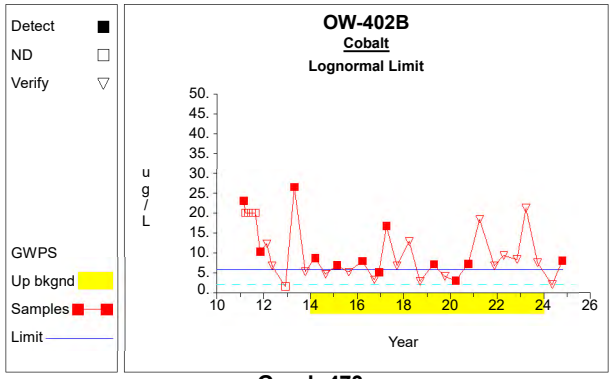
Graph 470



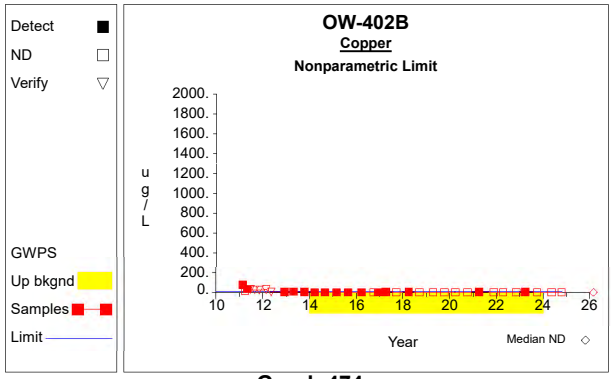
Graph 471



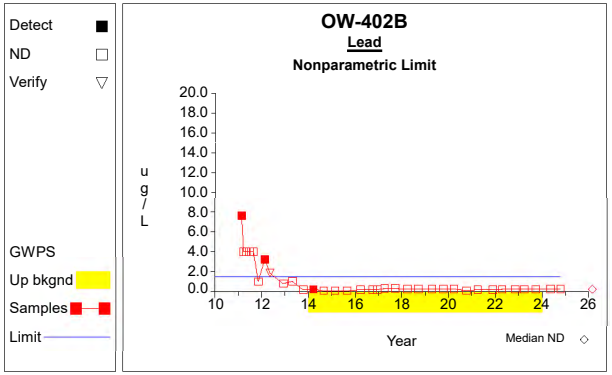
Graph 472



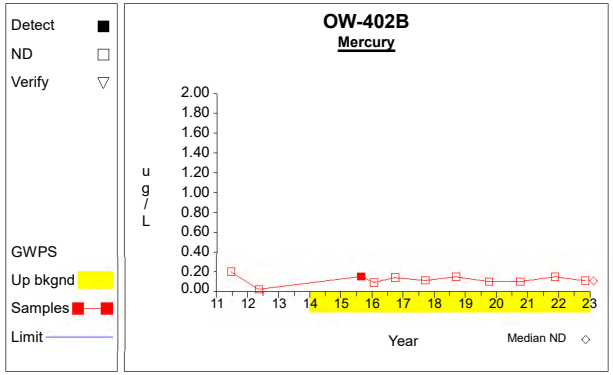
Graph 473



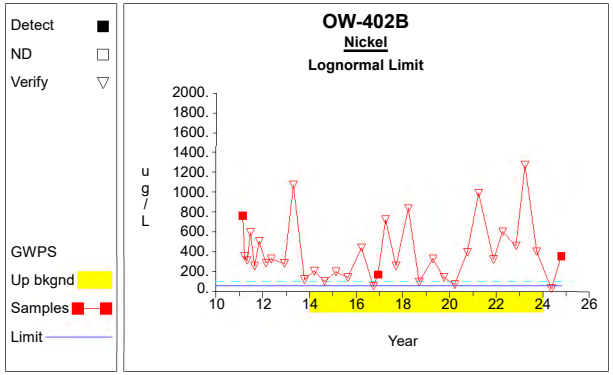
Graph 474



Graph 475

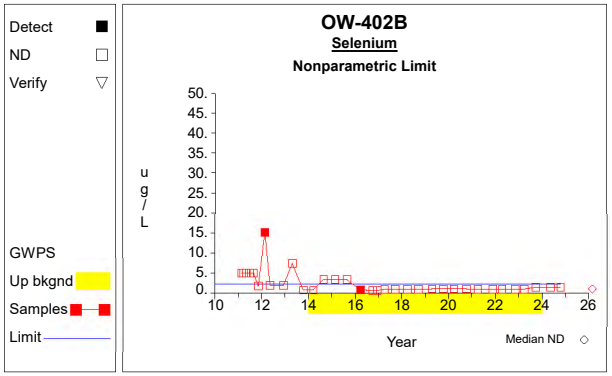


Graph 476

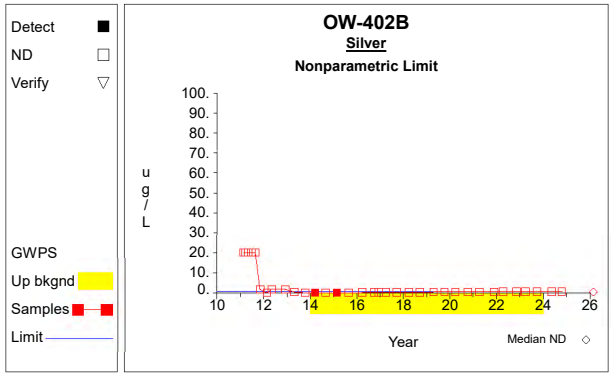


Graph 477

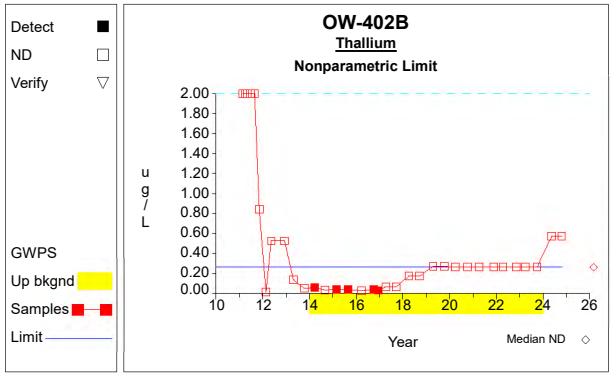
Up vs. Down Prediction Limits



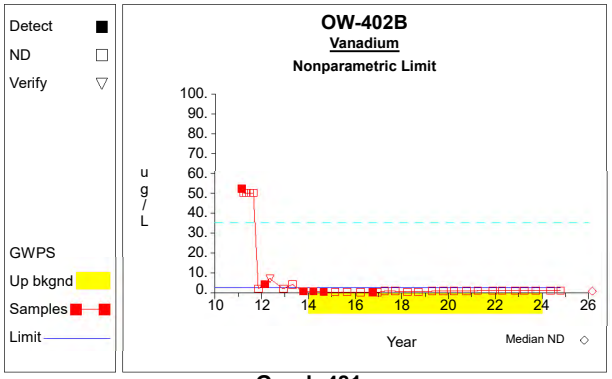
Graph 478



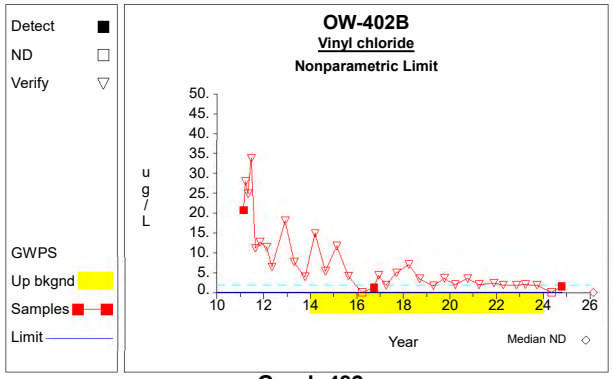
Graph 479



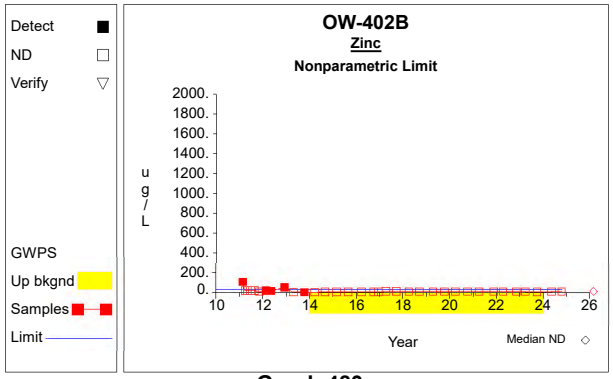
Graph 480



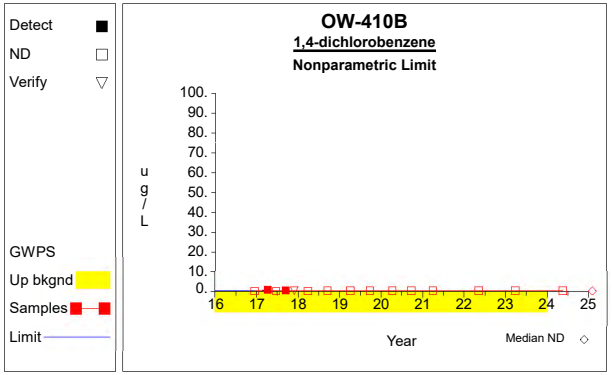
Graph 481



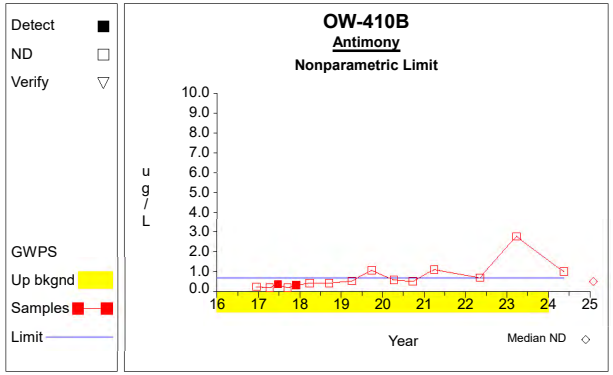
Graph 482



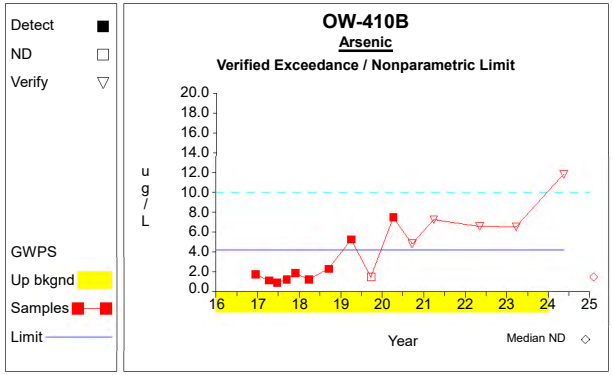
Graph 483



Graph 484

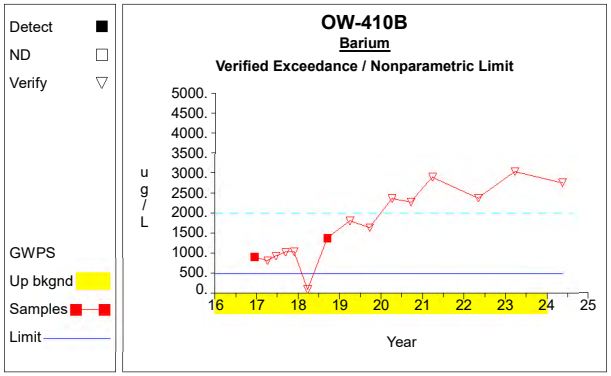


Graph 485

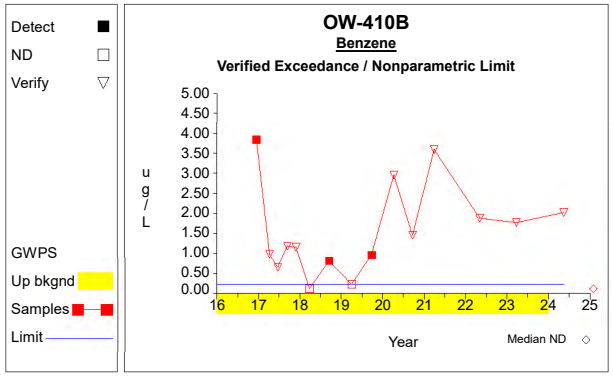


Graph 486

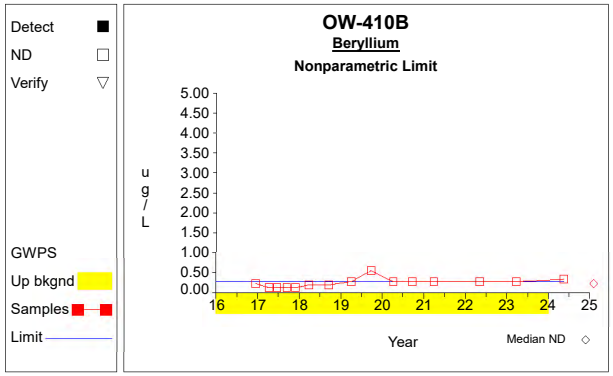
Up vs. Down Prediction Limits



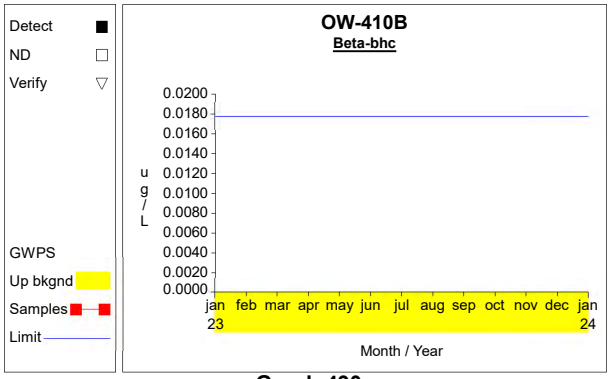
Graph 487



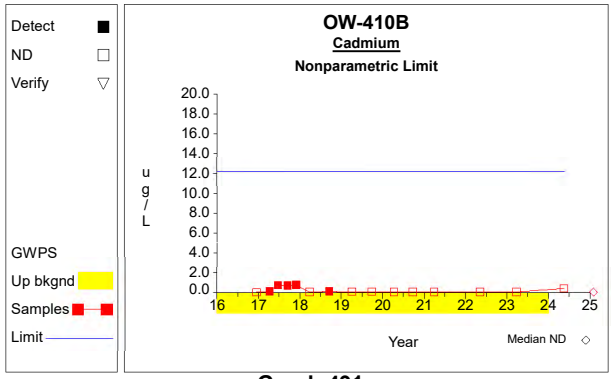
Graph 488



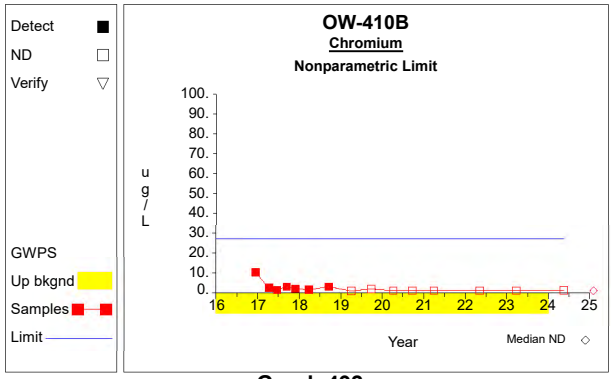
Graph 489



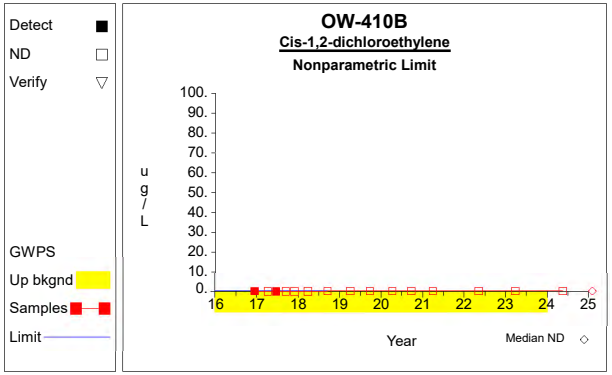
Graph 490



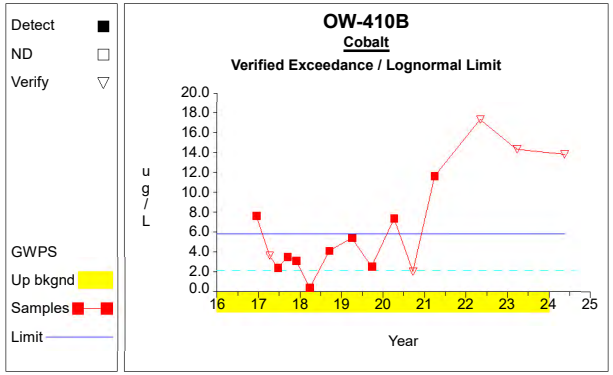
Graph 491



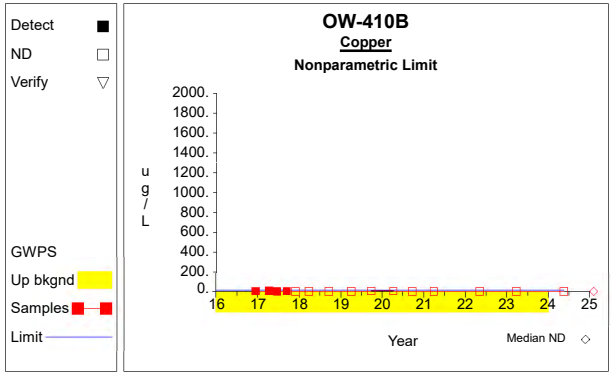
Graph 492



Graph 493

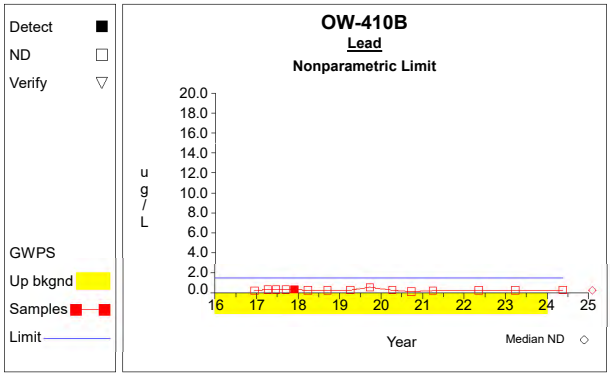


Graph 494

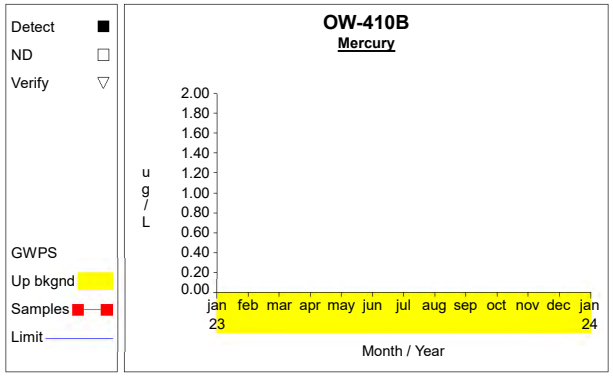


Graph 495

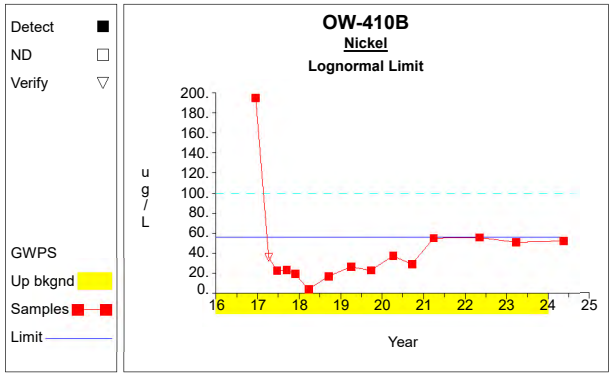
Up vs. Down Prediction Limits



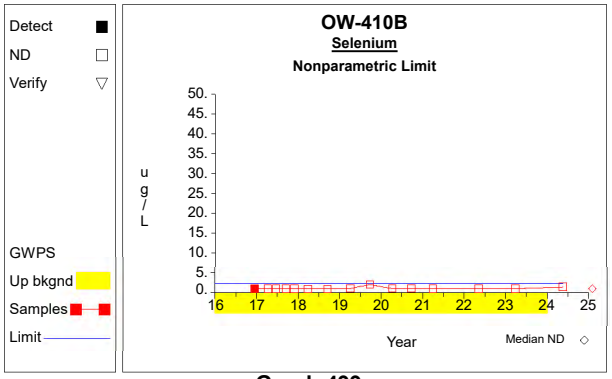
Graph 496



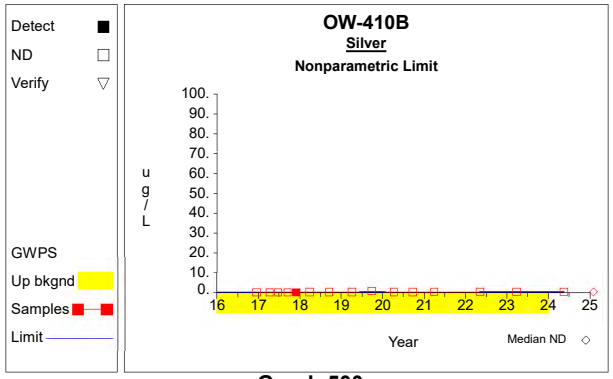
Graph 497



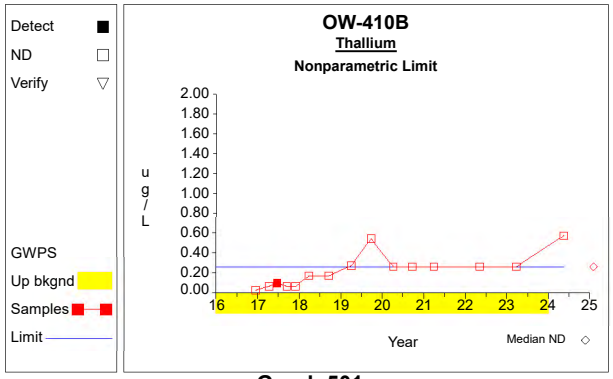
Graph 498



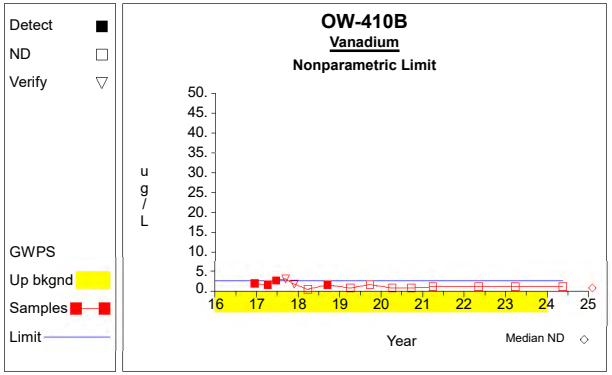
Graph 499



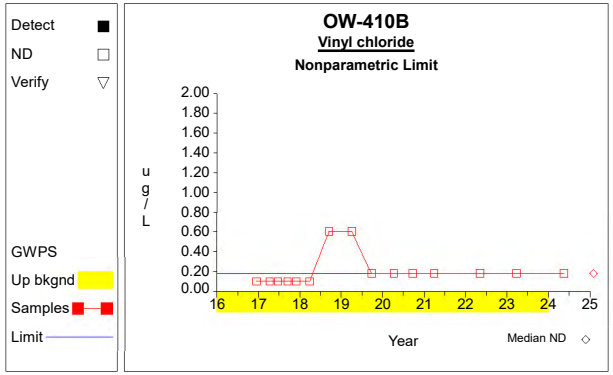
Graph 500



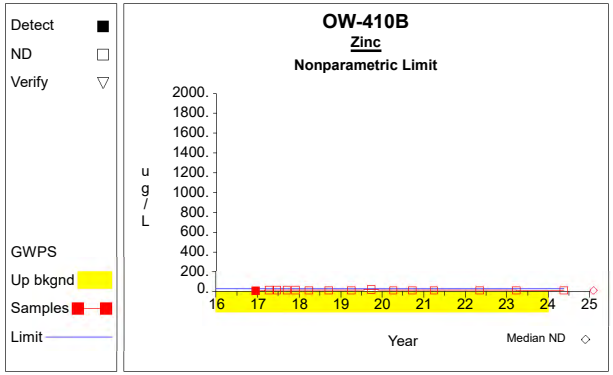
Graph 501



Graph 502

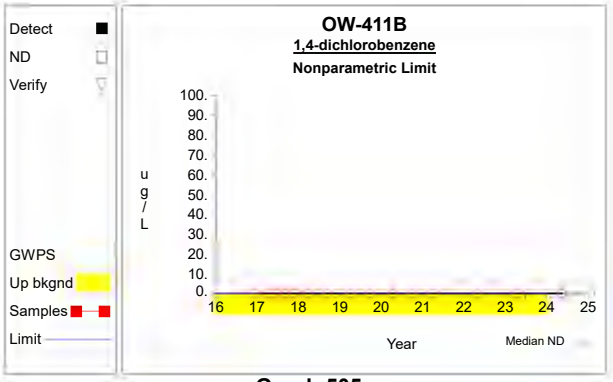


Graph 503

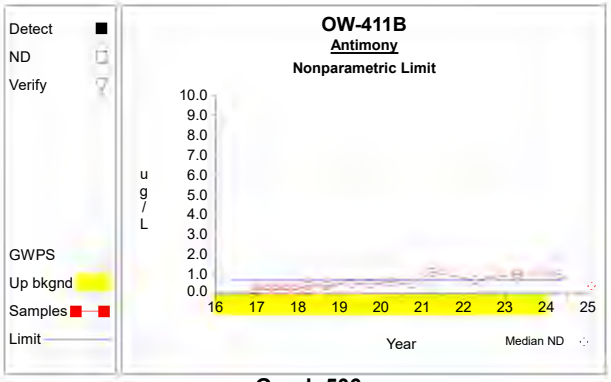


Graph 504

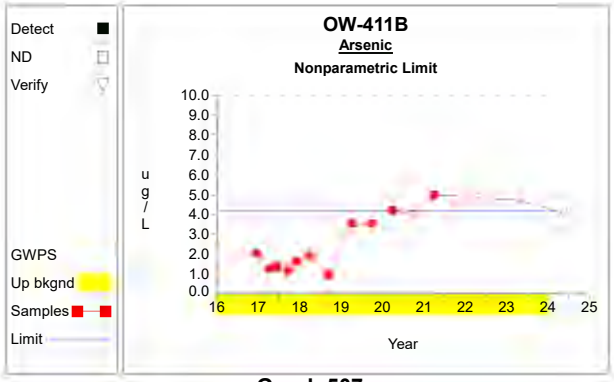
Up vs. Down Prediction Limits



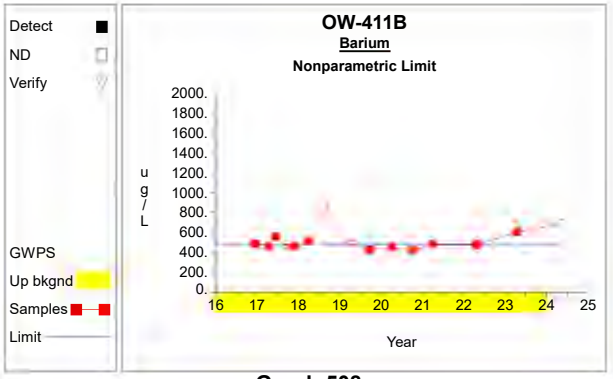
Graph 505



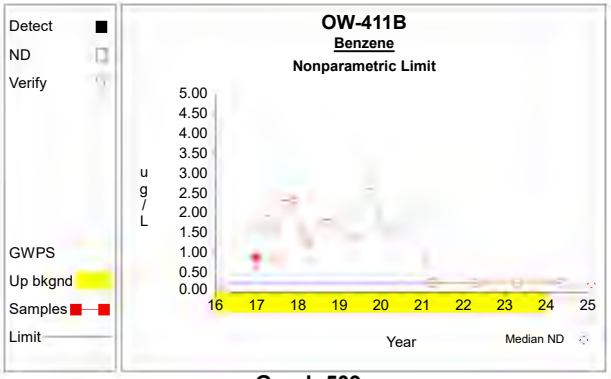
Graph 506



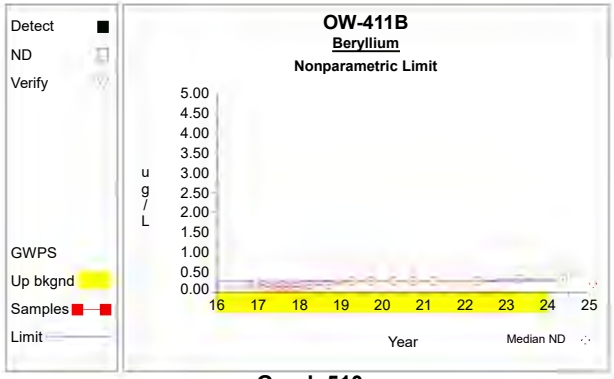
Graph 507



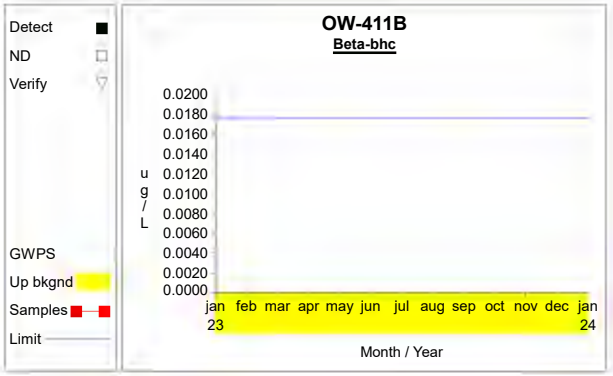
Graph 508



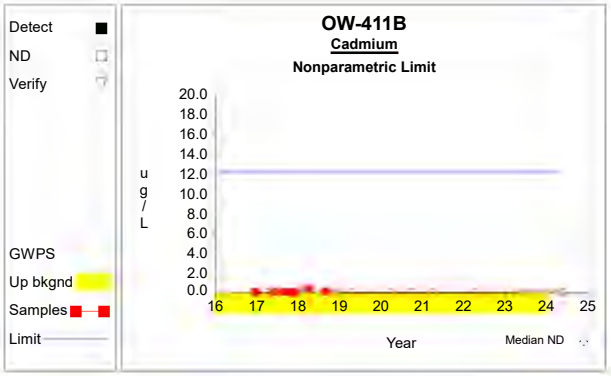
Graph 509



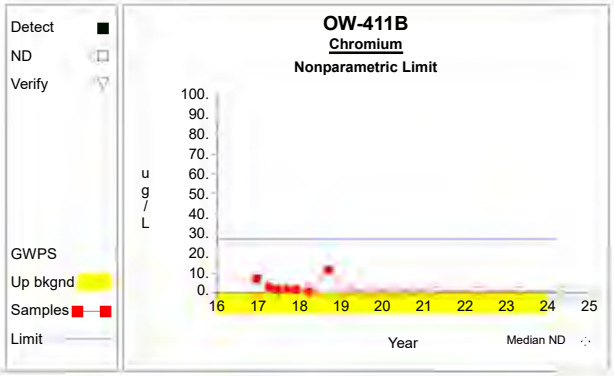
Graph 510



Graph 511

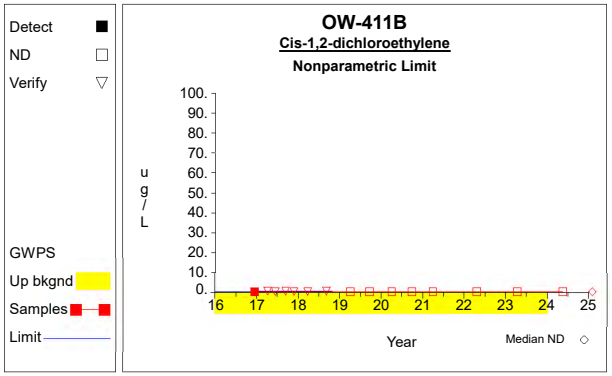


Graph 512

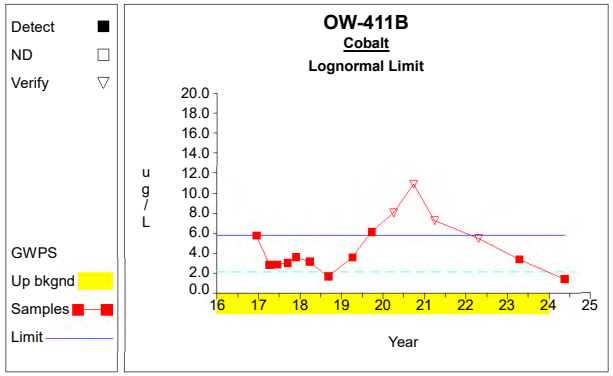


Graph 513

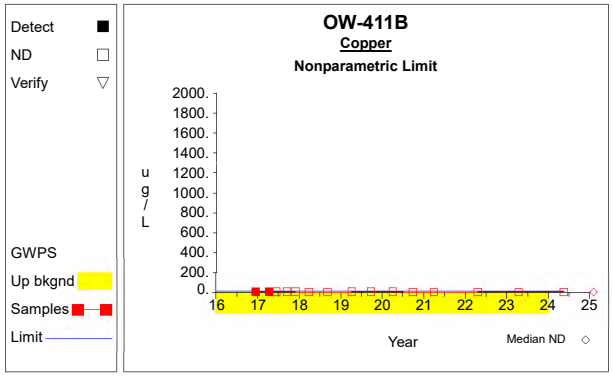
Up vs. Down Prediction Limits



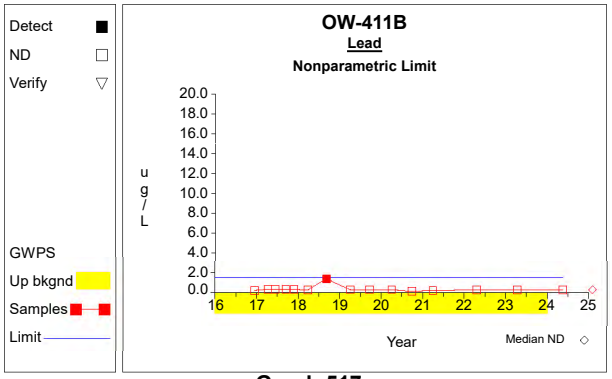
Graph 514



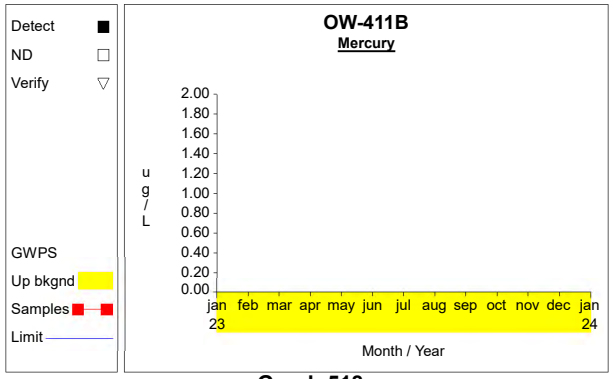
Graph 515



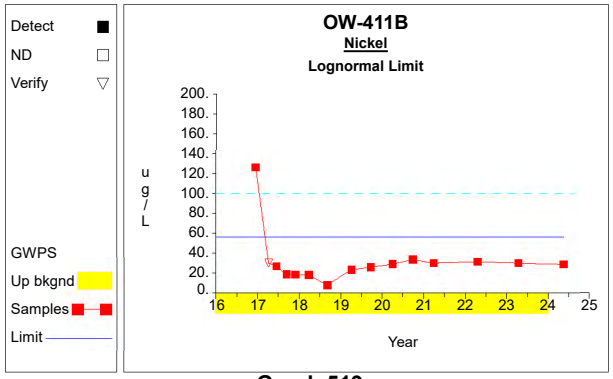
Graph 516



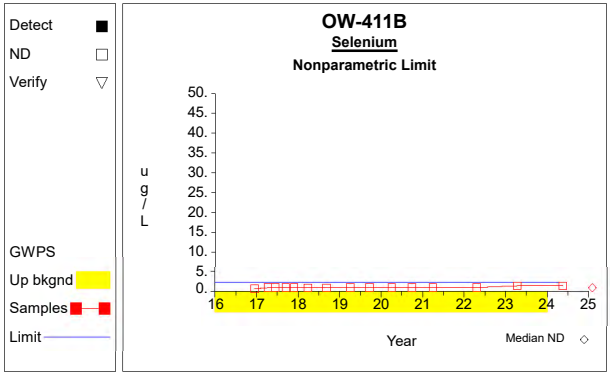
Graph 517



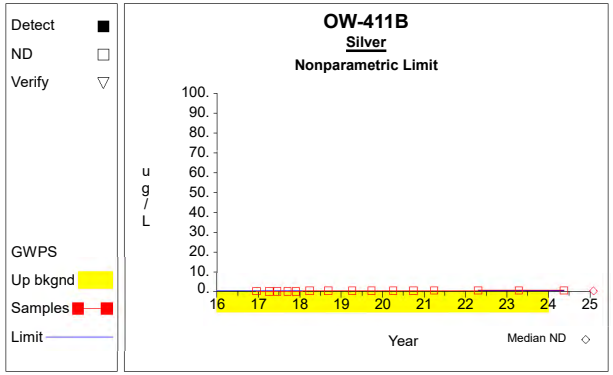
Graph 518



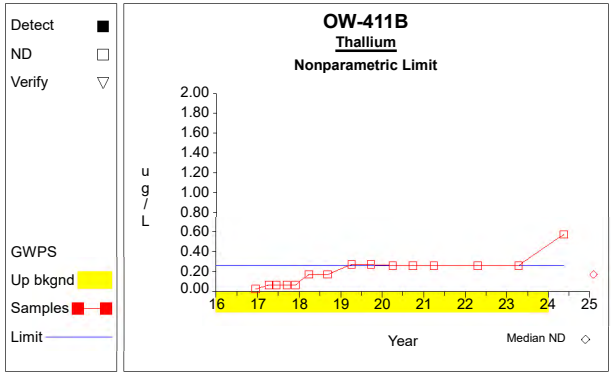
Graph 519



Graph 520

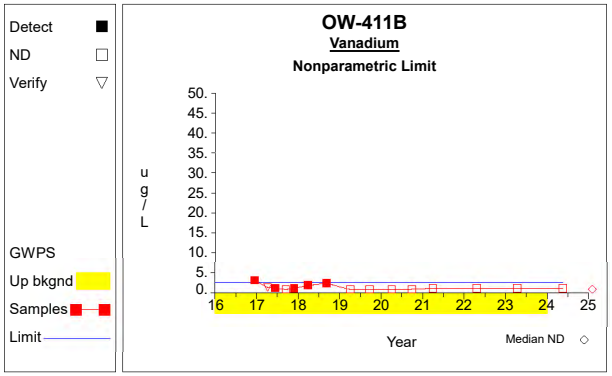


Graph 521

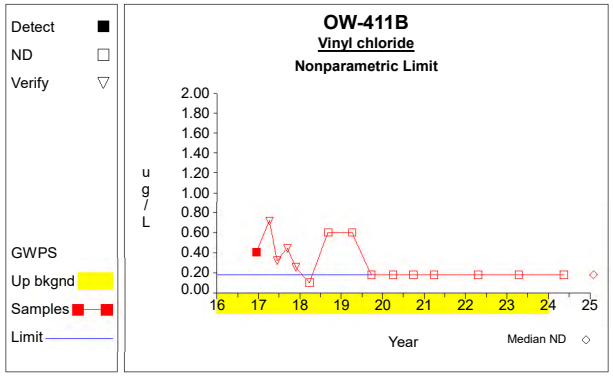


Graph 522

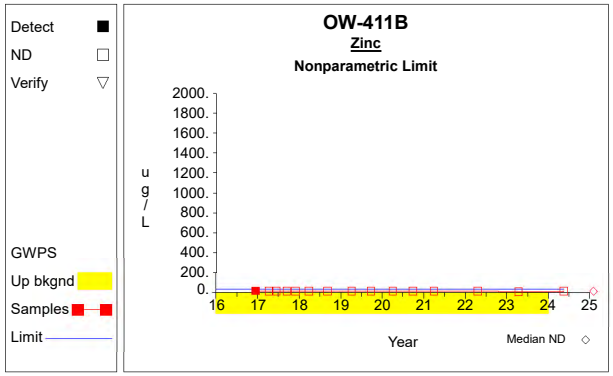
Up vs. Down Prediction Limits



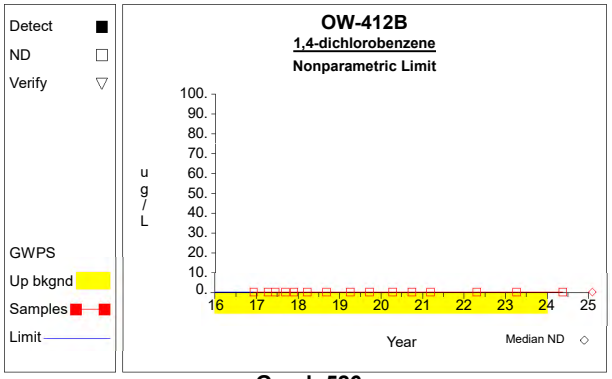
Graph 523



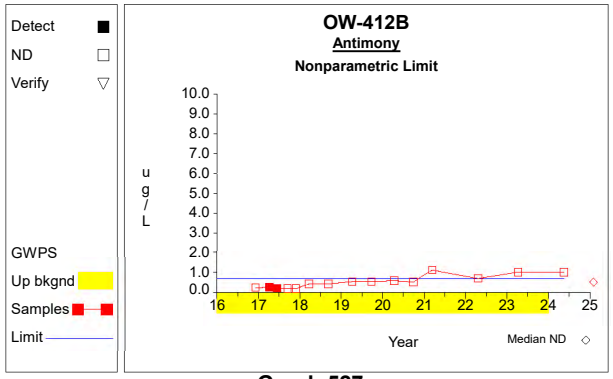
Graph 524



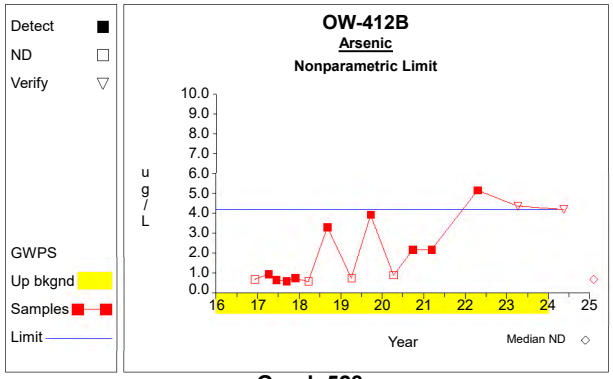
Graph 525



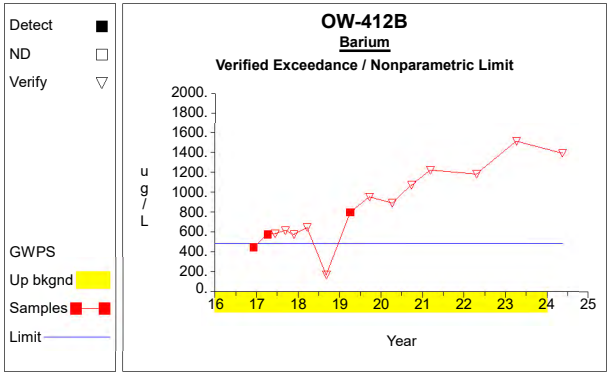
Graph 526



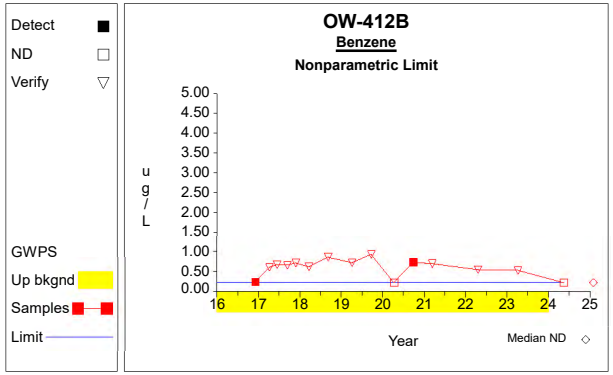
Graph 527



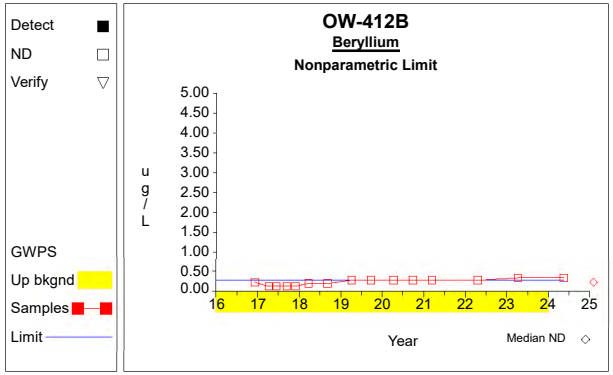
Graph 528



Graph 529

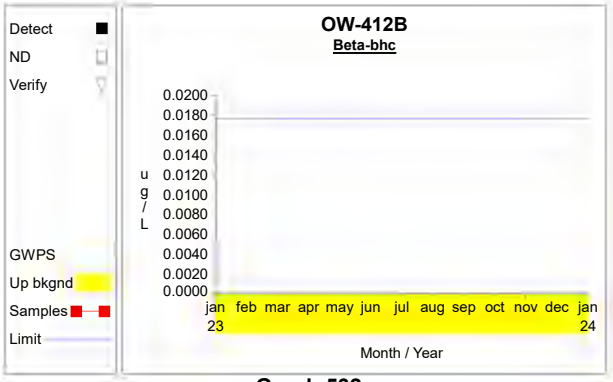


Graph 530

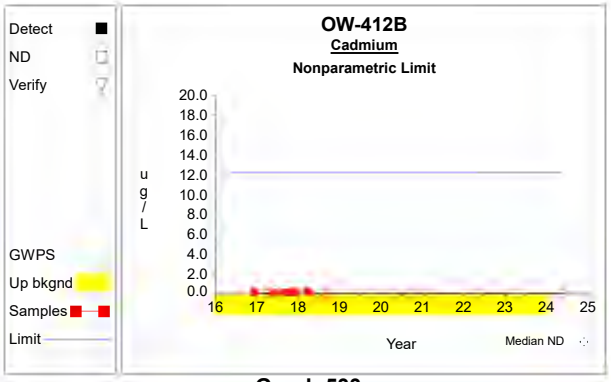


Graph 531

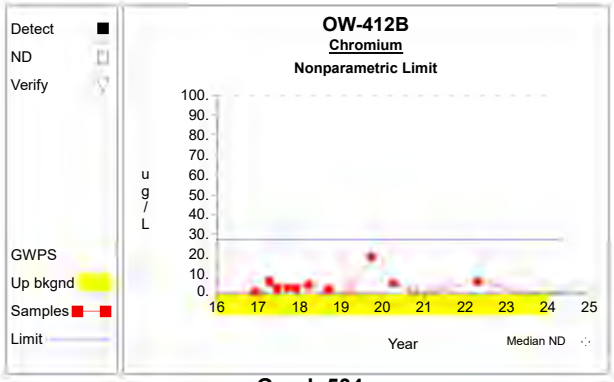
Up vs. Down Prediction Limits



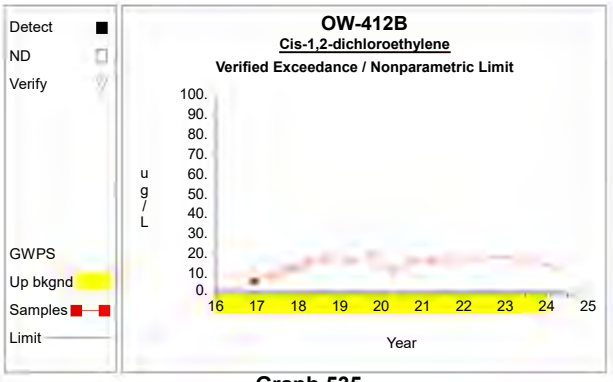
Graph 532



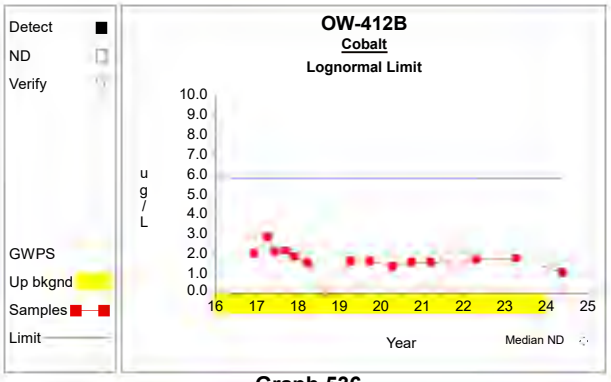
Graph 533



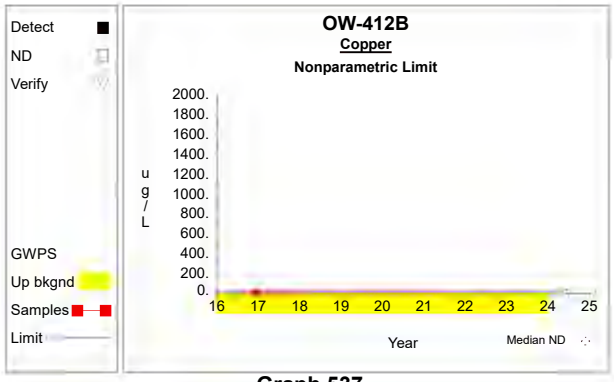
Graph 534



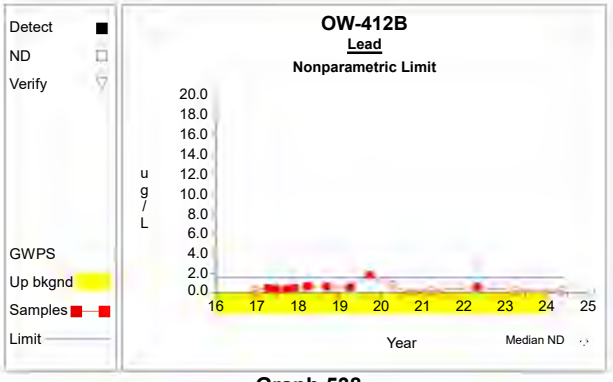
Graph 535



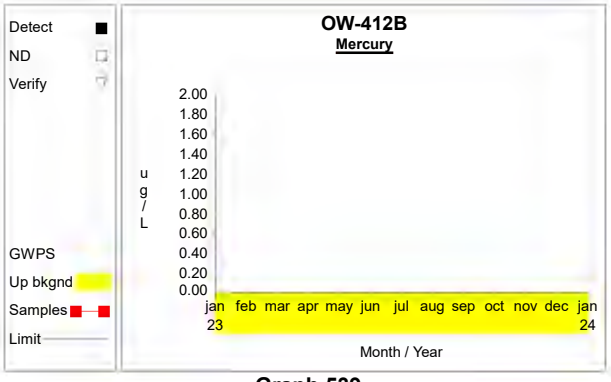
Graph 536



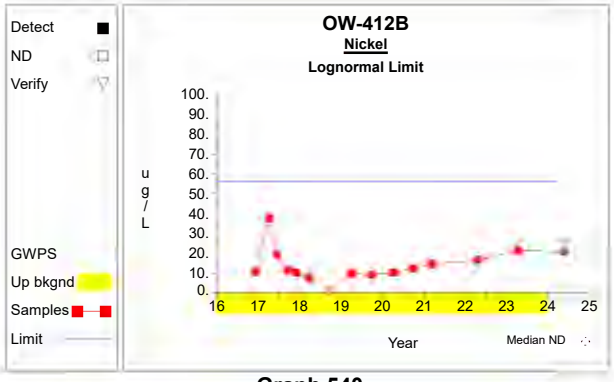
Graph 537



Graph 538

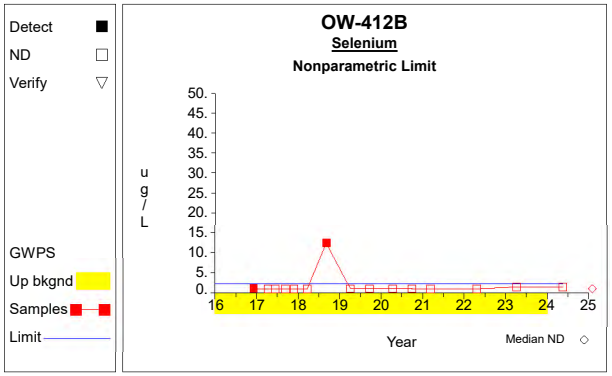


Graph 539

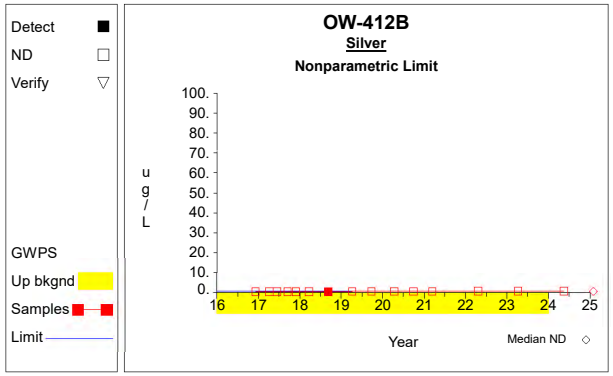


Graph 540

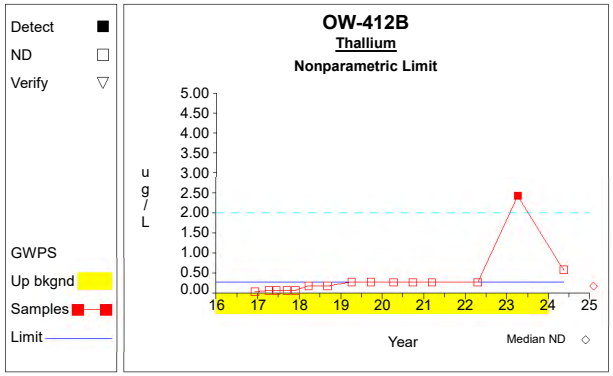
Up vs. Down Prediction Limits



Graph 541



Graph 542



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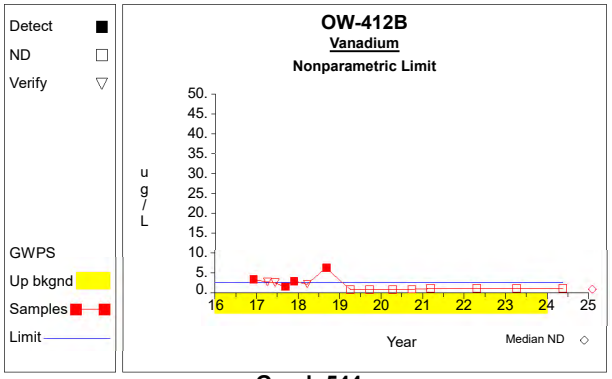

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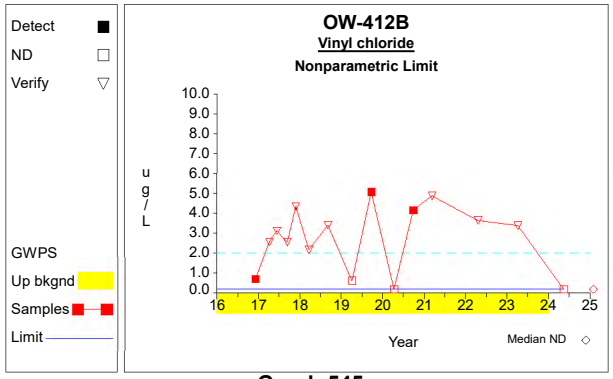
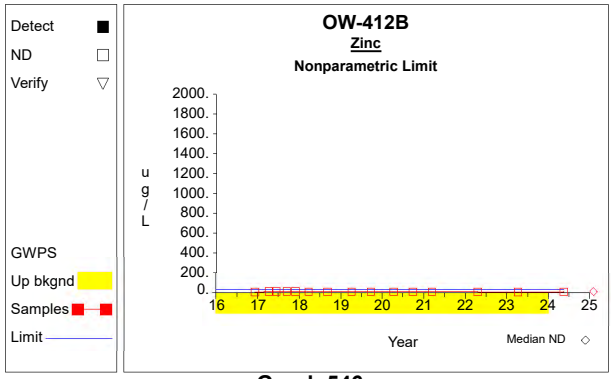
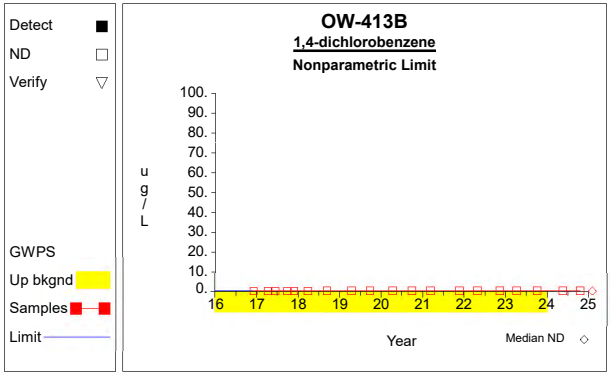


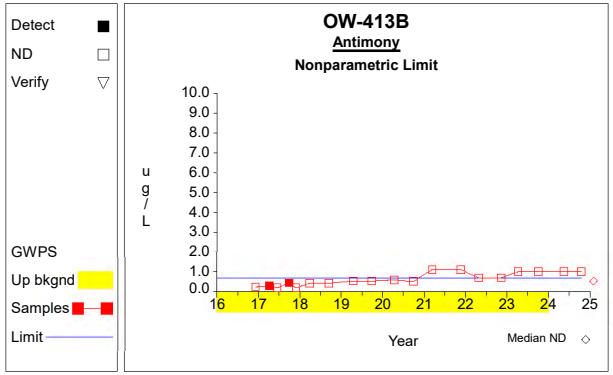
Graph 545



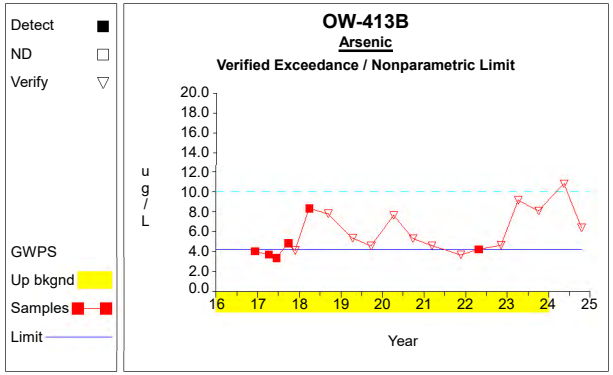
Graph 546



Graph 547

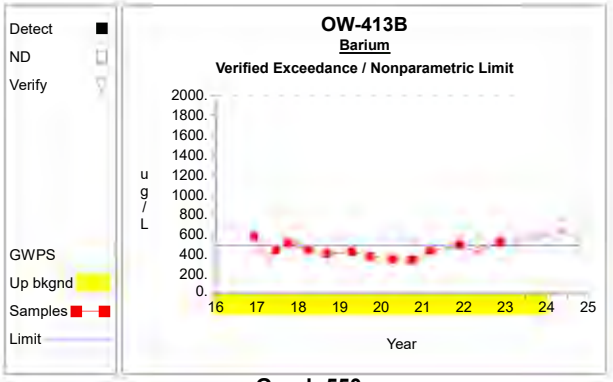


Graph 548

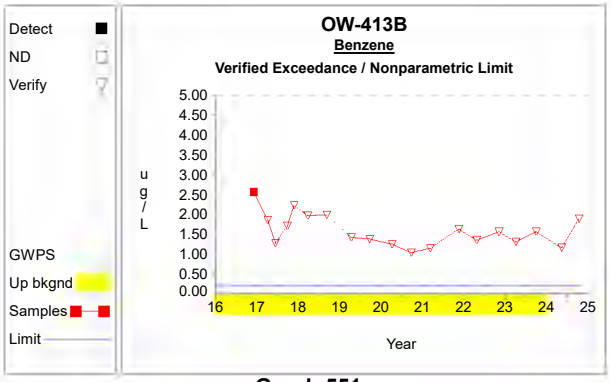


Graph 549

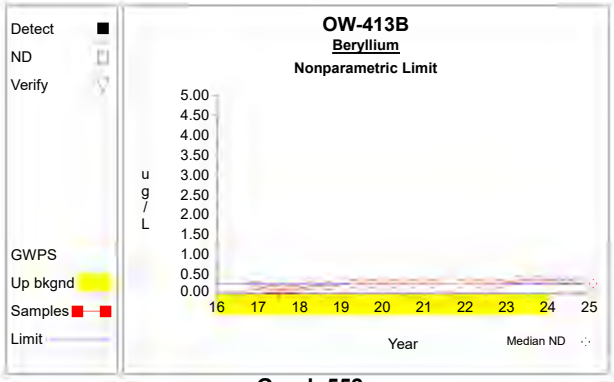
Up vs. Down Prediction Limits



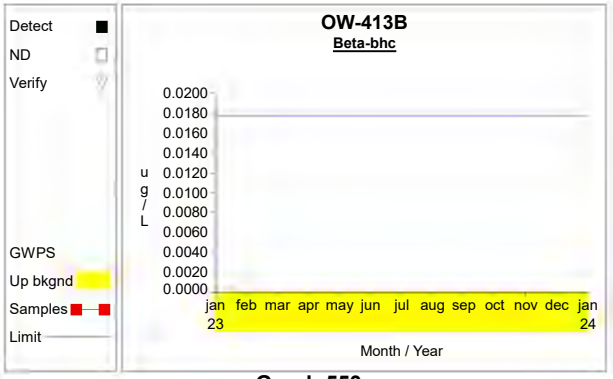
Graph 550



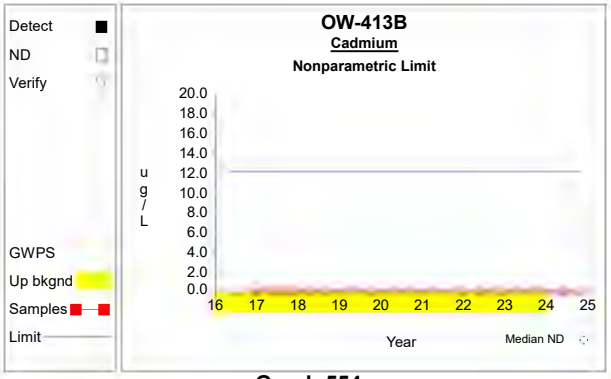
Graph 551



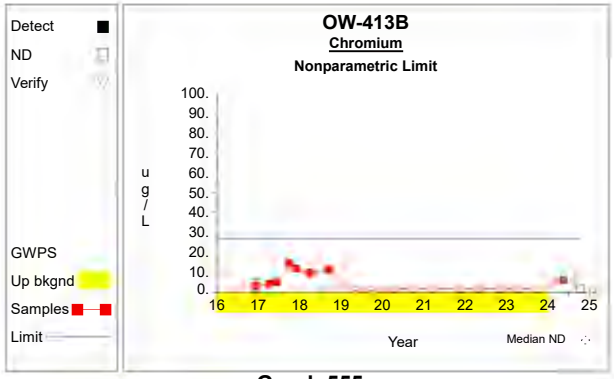
Graph 552



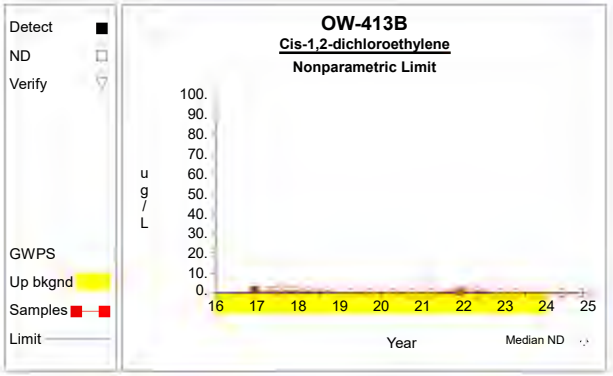
Graph 553



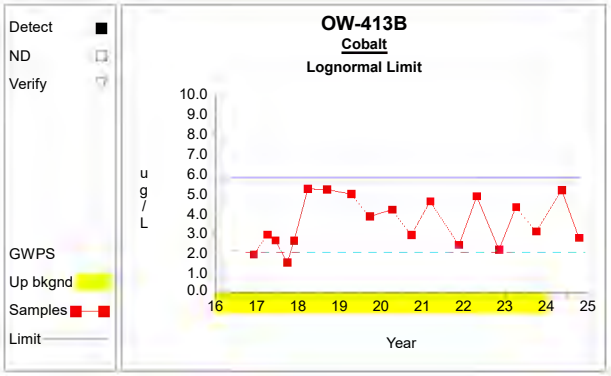
Graph 554



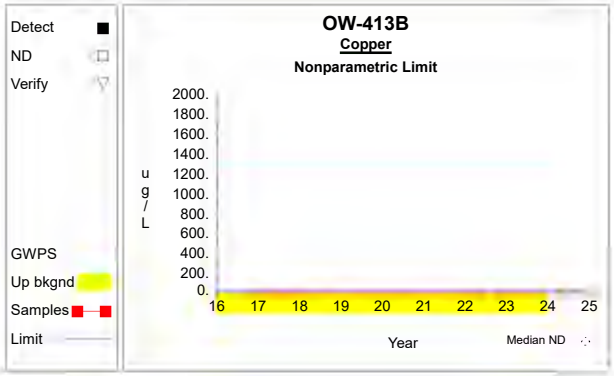
Graph 555



Graph 556

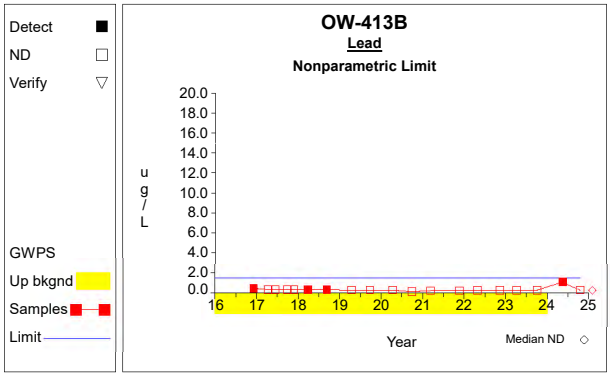


Graph 557

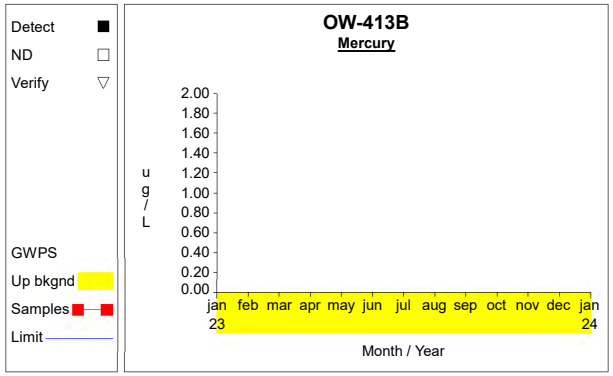


Graph 558

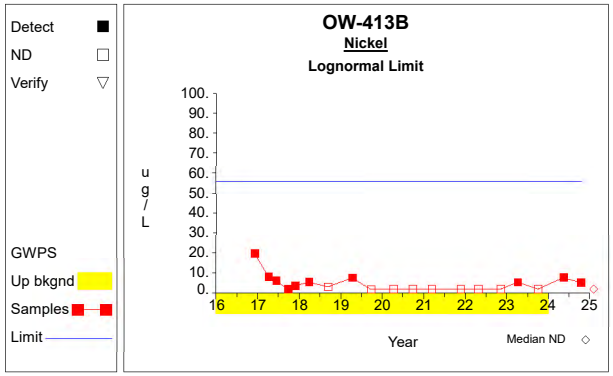
Up vs. Down Prediction Limits



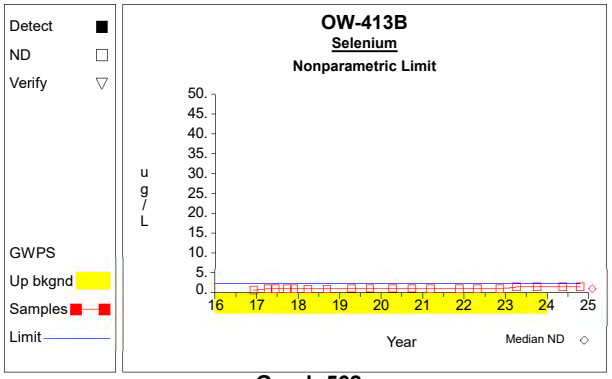
Graph 559



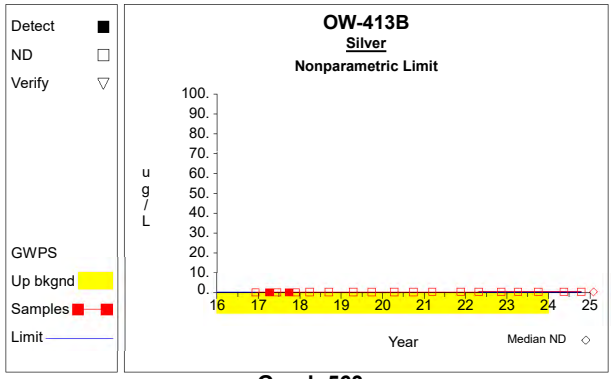
Graph 560



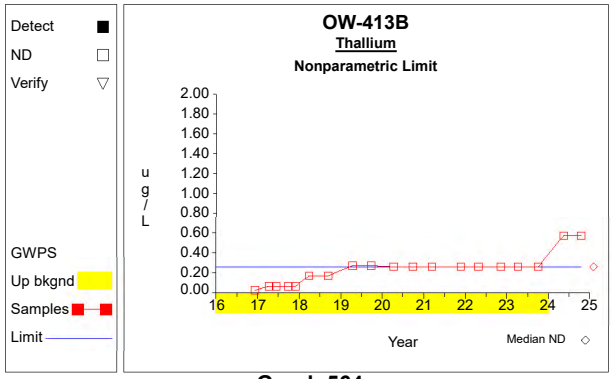
Graph 561



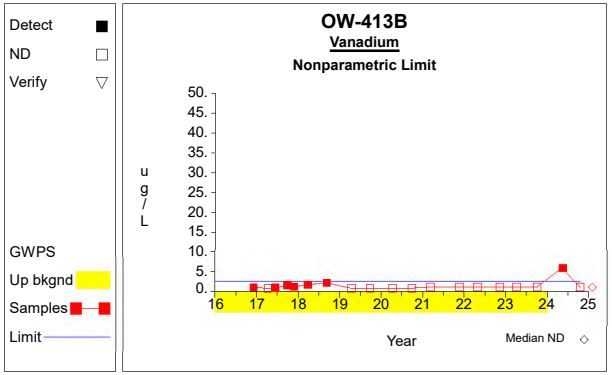
Graph 562



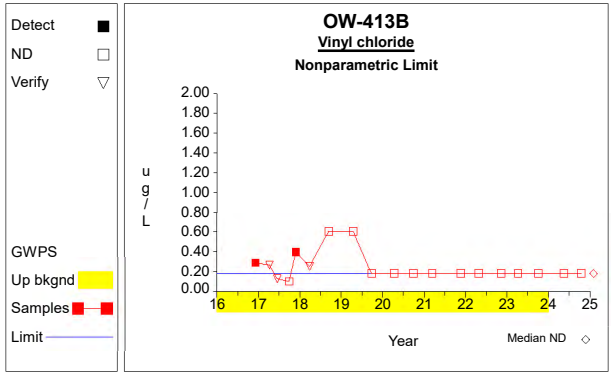
Graph 563



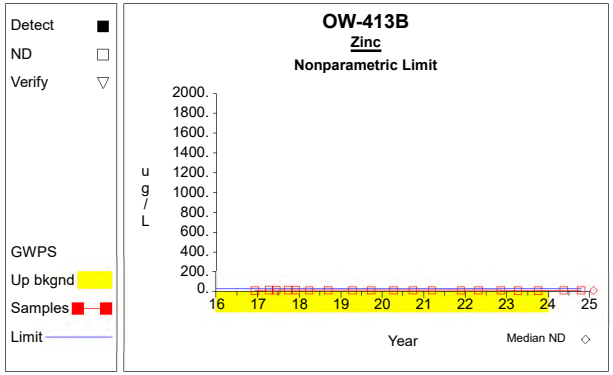
Graph 564



Graph 565

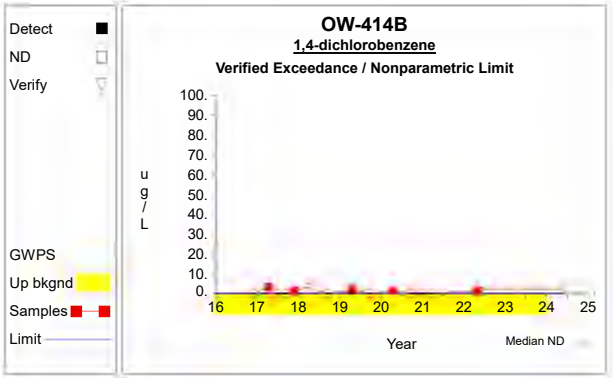


Graph 566

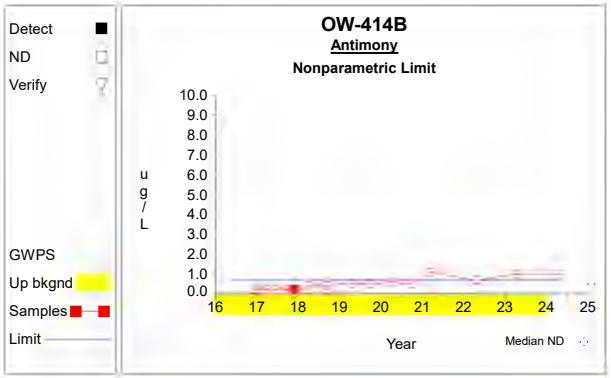


Graph 567

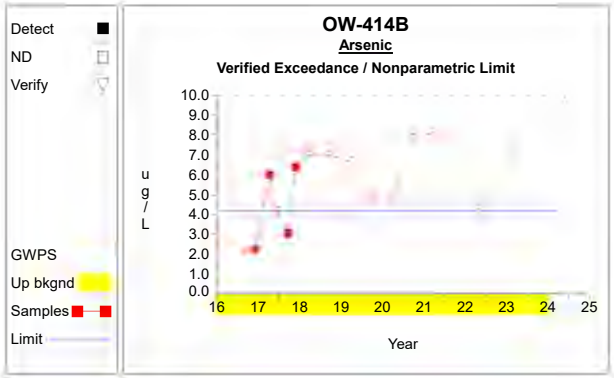
Up vs. Down Prediction Limits



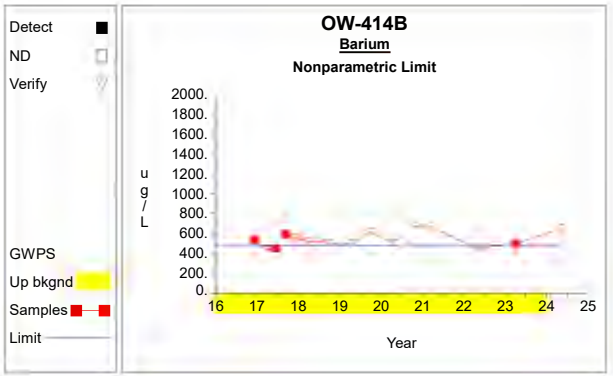
Graph 568



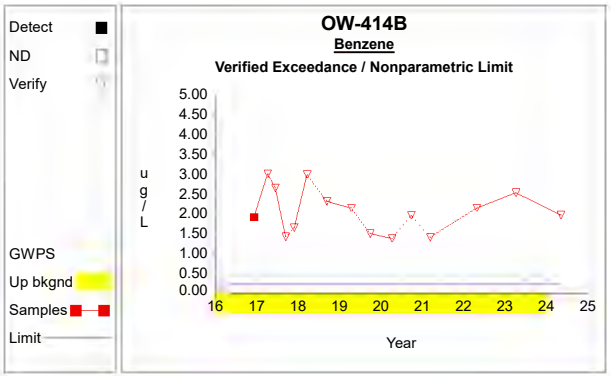
Graph 569



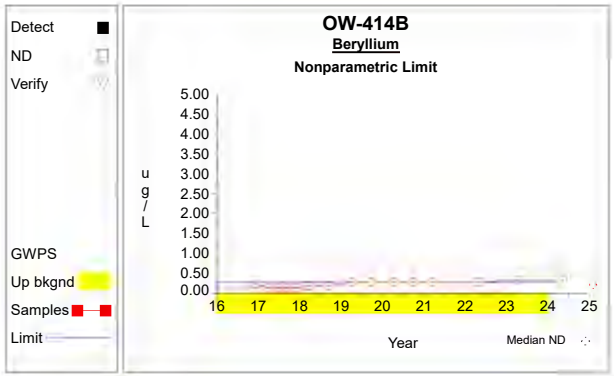
Graph 570



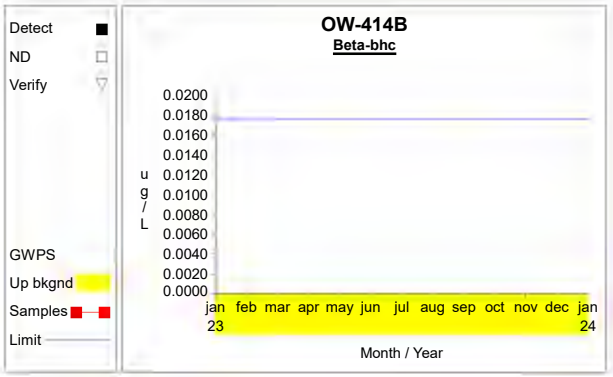
Graph 571



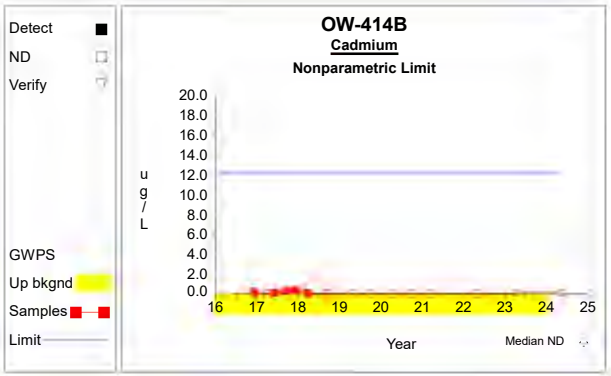
Graph 572



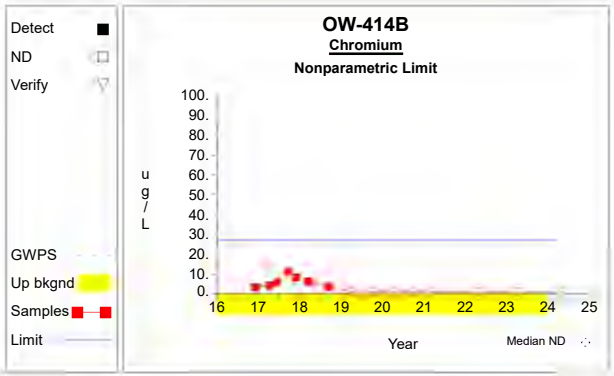
Graph 573



Graph 574

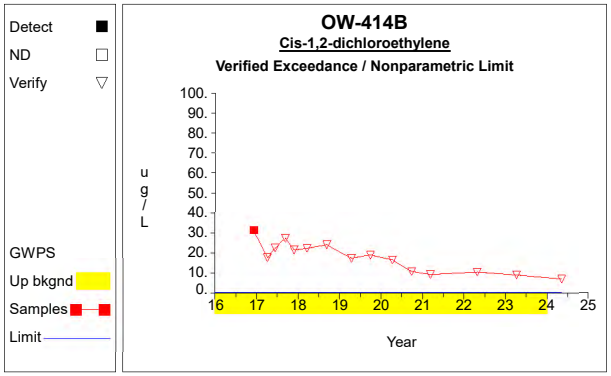


Graph 575

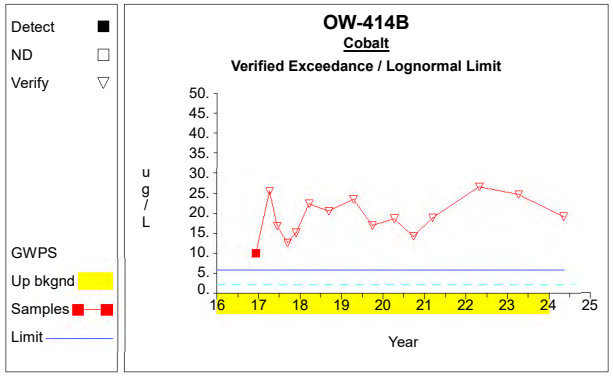


Graph 576

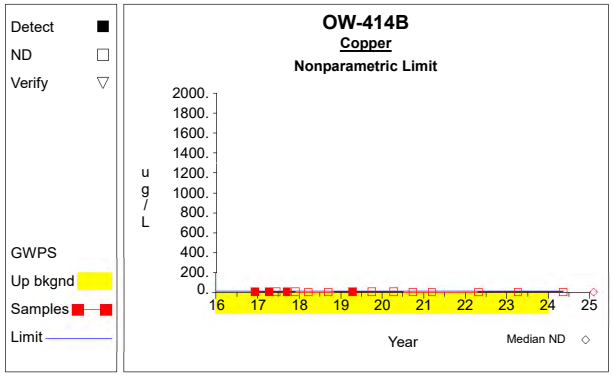
Up vs. Down Prediction Limits



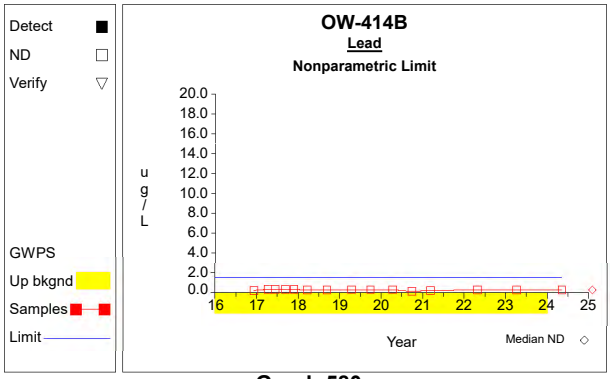
Graph 577



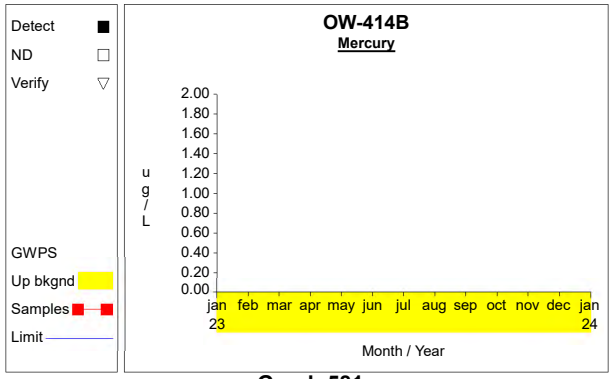
Graph 578



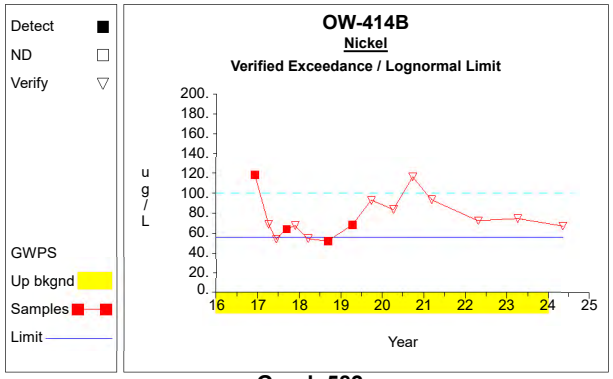
Graph 579



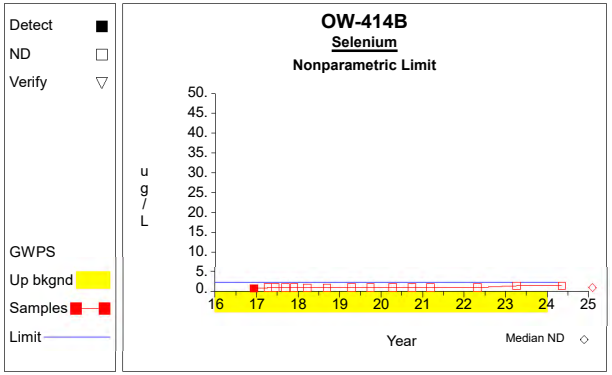
Graph 580



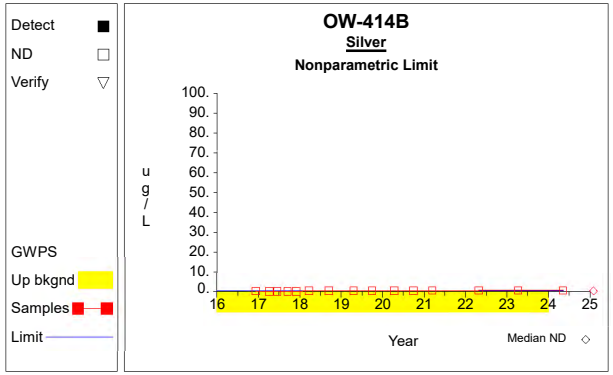
Graph 581



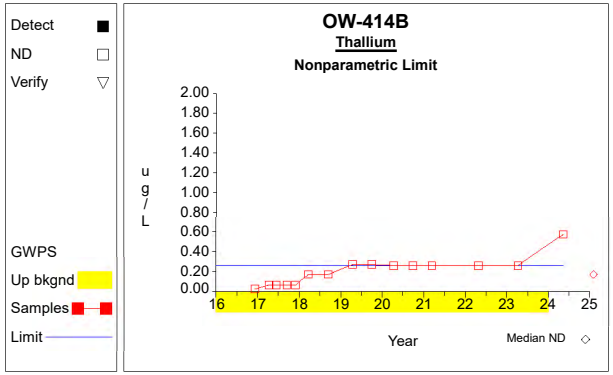
Graph 582



Graph 583

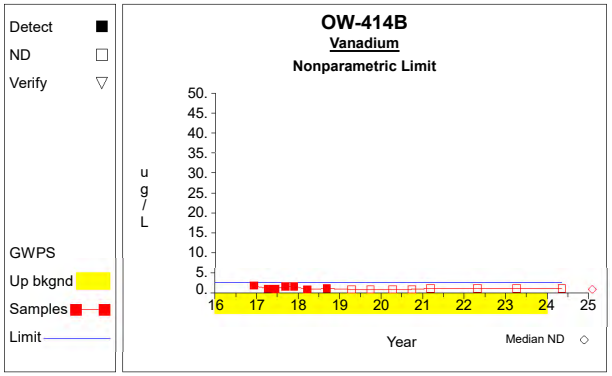


Graph 584

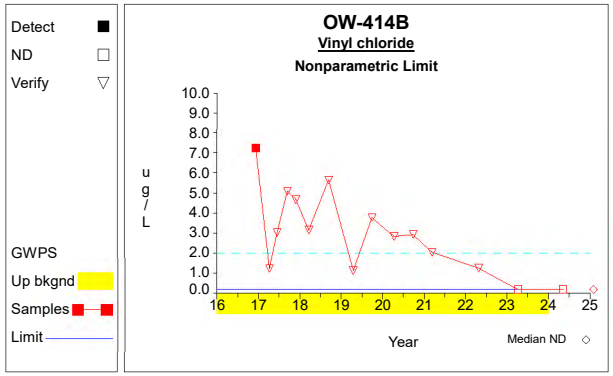


Graph 585

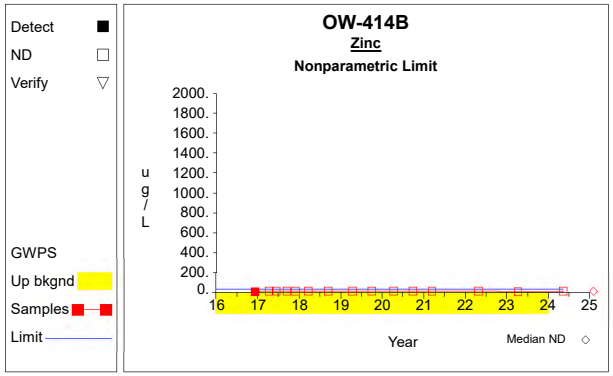
Up vs. Down Prediction Limits



Graph 586



Graph 587



Graph 588

False Positive and False Negative Rates for Current Upgradient vs. Downgradient Monitoring Program

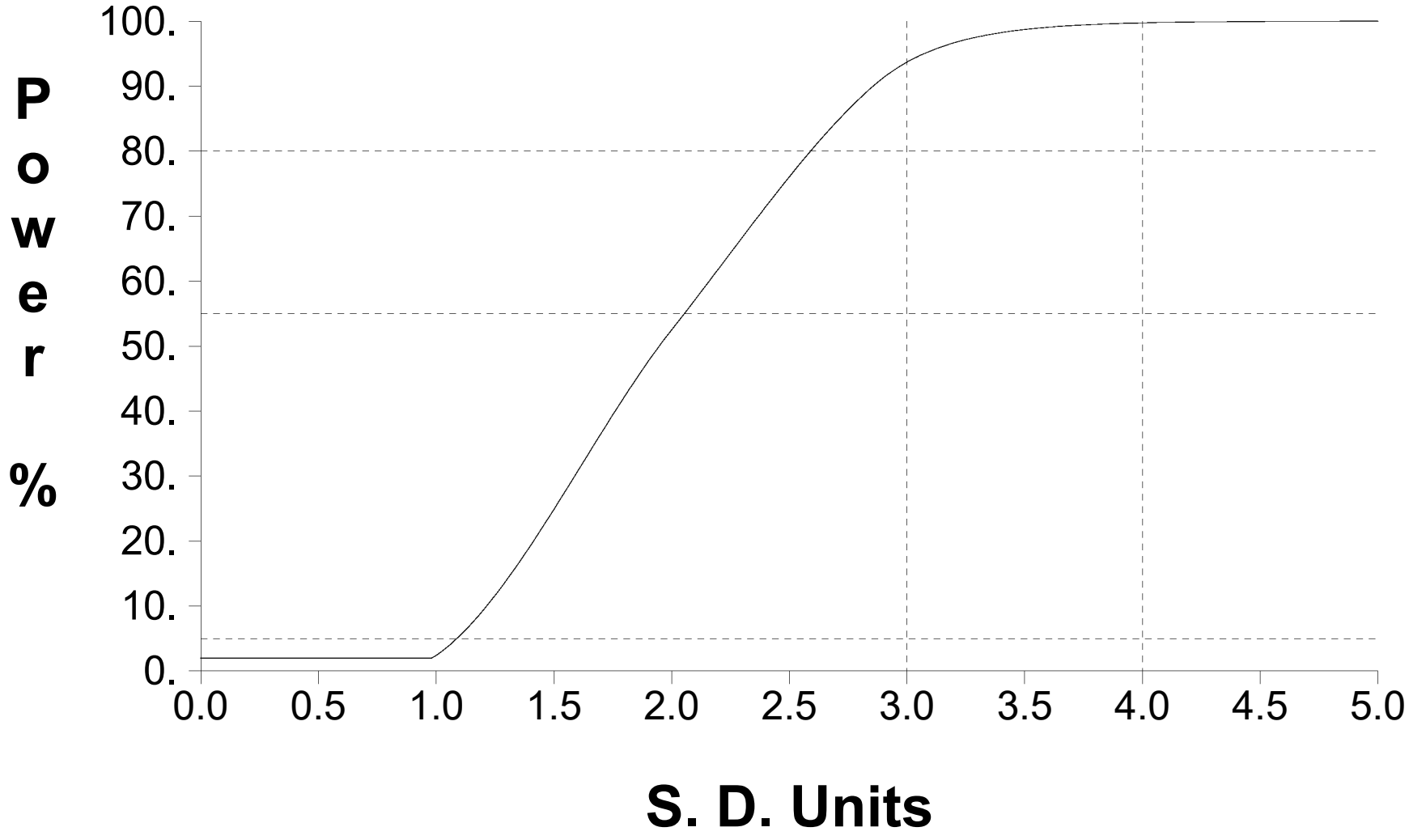


Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
1,4-dichlorobenzene	ug/L	MW-304B	11/03/2022	ND	0.2300		
1,4-dichlorobenzene	ug/L	MW-304B	01/25/2023	ND	0.2300		
1,4-dichlorobenzene	ug/L	MW-304B	04/14/2023	ND	0.2300		
1,4-dichlorobenzene	ug/L	MW-304B	09/26/2023	ND	0.2300		
1,4-dichlorobenzene	ug/L	MW-304B	12/06/2023	ND	0.2300		
Antimony	ug/L	MW-304B	11/03/2022	ND	0.6900		
Antimony	ug/L	MW-304B	01/25/2023	ND	0.6900		
Antimony	ug/L	MW-304B	04/14/2023	ND	1.0000	0.6900	**
Antimony	ug/L	MW-304B	09/26/2023	ND	1.0000	0.6900	**
Antimony	ug/L	MW-304B	12/06/2023	ND	1.0000	0.6900	**
Arsenic	ug/L	MW-304B	11/03/2022	ND	0.7500		
Arsenic	ug/L	MW-304B	01/25/2023	ND	0.7500		
Arsenic	ug/L	MW-304B	04/14/2023	ND	0.5300	0.7500	**
Arsenic	ug/L	MW-304B	09/26/2023	ND	0.5300	0.7500	**
Arsenic	ug/L	MW-304B	12/06/2023	ND	0.5300	0.7500	**
Barium	ug/L	MW-304B	11/03/2022		23.4000		
Barium	ug/L	MW-304B	01/25/2023		23.8000		
Barium	ug/L	MW-304B	04/14/2023		20.6000		
Barium	ug/L	MW-304B	09/26/2023		22.0000		
Barium	ug/L	MW-304B	12/06/2023		26.2000		
Benzene	ug/L	MW-304B	11/03/2022	ND	0.2200		
Benzene	ug/L	MW-304B	01/25/2023	ND	0.2200		
Benzene	ug/L	MW-304B	04/14/2023	ND	0.2200		
Benzene	ug/L	MW-304B	09/26/2023	ND	0.2200		
Benzene	ug/L	MW-304B	12/06/2023	ND	0.2200		
Beryllium	ug/L	MW-304B	11/03/2022	ND	0.2700		
Beryllium	ug/L	MW-304B	01/25/2023	ND	0.2700		
Beryllium	ug/L	MW-304B	04/14/2023	ND	0.3300	0.2700	**
Beryllium	ug/L	MW-304B	09/26/2023	ND	0.3300	0.2700	**
Beryllium	ug/L	MW-304B	12/06/2023	ND	0.3300	0.2700	**
Cadmium	ug/L	MW-304B	11/03/2022	ND	0.0550		
Cadmium	ug/L	MW-304B	01/25/2023	ND	0.0550		
Cadmium	ug/L	MW-304B	04/14/2023	ND	0.1000	0.0550	**
Cadmium	ug/L	MW-304B	09/26/2023	ND	0.1000	0.0550	**
Cadmium	ug/L	MW-304B	12/06/2023	ND	0.1000	0.0550	**
Chromium	ug/L	MW-304B	11/03/2022	ND	1.1000		
Chromium	ug/L	MW-304B	01/25/2023	ND	1.1000		
Chromium	ug/L	MW-304B	04/14/2023	ND	1.1000		
Chromium	ug/L	MW-304B	09/26/2023	ND	1.1000		
Chromium	ug/L	MW-304B	12/06/2023	ND	1.1000		
Cis-1,2-dichloroethylene	ug/L	MW-304B	11/03/2022	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	MW-304B	01/25/2023	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	MW-304B	04/14/2023	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	MW-304B	09/26/2023	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	MW-304B	12/06/2023	ND	0.2100		
Cobalt	ug/L	MW-304B	11/03/2022	ND	0.1900		
Cobalt	ug/L	MW-304B	01/25/2023	ND	0.1900		
Cobalt	ug/L	MW-304B	04/14/2023	ND	0.1700	0.1900	**
Cobalt	ug/L	MW-304B	09/26/2023	ND	0.1700	0.1900	**
Cobalt	ug/L	MW-304B	12/06/2023	ND	0.1700	0.1900	**
Copper	ug/L	MW-304B	11/03/2022	ND	1.8000		
Copper	ug/L	MW-304B	01/25/2023	ND	1.8000		
Copper	ug/L	MW-304B	04/14/2023	ND	1.8000		
Copper	ug/L	MW-304B	09/26/2023	ND	1.8000		
Copper	ug/L	MW-304B	12/06/2023	ND	1.8000		
Lead	ug/L	MW-304B	11/03/2022	ND	0.2400		
Lead	ug/L	MW-304B	01/25/2023	ND	0.2400		
Lead	ug/L	MW-304B	04/14/2023	ND	0.2400		
Lead	ug/L	MW-304B	09/26/2023	ND	0.2400		
Lead	ug/L	MW-304B	12/06/2023	ND	0.2400		
Nickel	ug/L	MW-304B	11/03/2022	ND	1.9000		
Nickel	ug/L	MW-304B	01/25/2023	ND	1.9000		
Nickel	ug/L	MW-304B	04/14/2023	ND	1.9000		

* - Outlier for that well and constituent.
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ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Nickel	ug/L	MW-304B	09/26/2023	ND	1.9000		
Nickel	ug/L	MW-304B	12/06/2023	ND	1.9000		
Selenium	ug/L	MW-304B	11/03/2022	ND	0.9600		
Selenium	ug/L	MW-304B	01/25/2023	ND	0.9600		
Selenium	ug/L	MW-304B	04/14/2023	ND	1.4000	0.9600	**
Selenium	ug/L	MW-304B	09/26/2023	ND	1.4000	0.9600	**
Selenium	ug/L	MW-304B	12/06/2023	ND	1.4000	0.9600	**
Silver	ug/L	MW-304B	11/03/2022	ND	0.4900	0.3700	**
Silver	ug/L	MW-304B	01/25/2023	ND	0.4900	0.3700	**
Silver	ug/L	MW-304B	04/14/2023	ND	0.5000	0.3700	**
Silver	ug/L	MW-304B	09/26/2023	ND	0.5000	0.3700	**
Silver	ug/L	MW-304B	12/06/2023	ND	0.5000	0.3700	**
Thallium	ug/L	MW-304B	11/03/2022	ND	0.2600		
Thallium	ug/L	MW-304B	01/25/2023	ND	0.2600		
Thallium	ug/L	MW-304B	04/14/2023	ND	0.2600		
Thallium	ug/L	MW-304B	09/26/2023		13.2000		*
Thallium	ug/L	MW-304B	12/06/2023	ND	0.2600		
Vanadium	ug/L	MW-304B	11/03/2022	ND	1.1000		
Vanadium	ug/L	MW-304B	01/25/2023	ND	1.1000		
Vanadium	ug/L	MW-304B	04/14/2023	ND	1.1000		
Vanadium	ug/L	MW-304B	09/26/2023	ND	1.1000		
Vanadium	ug/L	MW-304B	12/06/2023	ND	1.1000		
Vinyl chloride	ug/L	MW-304B	11/03/2022	ND	0.1800		
Vinyl chloride	ug/L	MW-304B	01/25/2023	ND	0.1800		
Vinyl chloride	ug/L	MW-304B	04/14/2023	ND	0.1800		
Vinyl chloride	ug/L	MW-304B	09/26/2023	ND	0.1800		
Vinyl chloride	ug/L	MW-304B	12/06/2023	ND	0.1800		
Zinc	ug/L	MW-304B	11/03/2022	ND	10.0000		
Zinc	ug/L	MW-304B	01/25/2023	ND	10.0000		
Zinc	ug/L	MW-304B	04/14/2023	ND	6.4000	10.0000	**
Zinc	ug/L	MW-304B	09/26/2023	ND	6.4000	10.0000	**
Zinc	ug/L	MW-304B	12/06/2023	ND	6.4000	10.0000	**
1,4-dichlorobenzene	ug/L	MW-308B	03/18/2014	ND	0.2000	0.2300	**
1,4-dichlorobenzene	ug/L	MW-308B	08/27/2014	ND	0.2000	0.2300	**
1,4-dichlorobenzene	ug/L	MW-308B	03/19/2015	ND	0.2000	0.2300	**
1,4-dichlorobenzene	ug/L	MW-308B	08/20/2015	ND	0.2000	0.2300	**
1,4-dichlorobenzene	ug/L	MW-308B	03/09/2016	ND	0.2000	0.2300	**
1,4-dichlorobenzene	ug/L	MW-308B	09/12/2016	ND	0.2000	0.2300	**
1,4-dichlorobenzene	ug/L	MW-308B	03/20/2017	ND	0.2000	0.2300	**
1,4-dichlorobenzene	ug/L	MW-308B	09/07/2017	ND	0.2000	0.2300	**
1,4-dichlorobenzene	ug/L	MW-308B	03/15/2018	ND	0.2000	0.2300	**
1,4-dichlorobenzene	ug/L	MW-308B	08/30/2018	ND	0.2300		
1,4-dichlorobenzene	ug/L	MW-308B	04/02/2019	ND	0.2300		
1,4-dichlorobenzene	ug/L	MW-308B	09/17/2019	ND	0.2300		
Antimony	ug/L	MW-308B	03/18/2014	ND	0.4000	0.6900	**
Antimony	ug/L	MW-308B	08/27/2014		0.2610		
Antimony	ug/L	MW-308B	03/19/2015	ND	0.1610	0.6900	**
Antimony	ug/L	MW-308B	08/20/2015	ND	0.1610	0.6900	**
Antimony	ug/L	MW-308B	03/09/2016	ND	0.2370	0.6900	**
Antimony	ug/L	MW-308B	09/12/2016	ND	0.2370	0.6900	**
Antimony	ug/L	MW-308B	03/20/2017	ND	0.1850	0.6900	**
Antimony	ug/L	MW-308B	09/07/2017	ND	0.1850	0.6900	**
Antimony	ug/L	MW-308B	03/15/2018	ND	0.1850	0.6900	**
Antimony	ug/L	MW-308B	08/30/2018	ND	0.4200	0.6900	**
Antimony	ug/L	MW-308B	04/02/2019	ND	0.5300	0.6900	**
Antimony	ug/L	MW-308B	09/17/2019	ND	0.5300	0.6900	**
Arsenic	ug/L	MW-308B	03/18/2014	ND	0.3300	0.7500	**
Arsenic	ug/L	MW-308B	08/27/2014	ND	0.9450	0.7500	**
Arsenic	ug/L	MW-308B	03/19/2015	ND	0.9450	0.7500	**
Arsenic	ug/L	MW-308B	08/20/2015	ND	0.9450	0.7500	**
Arsenic	ug/L	MW-308B	03/09/2016	ND	0.6720	0.7500	**
Arsenic	ug/L	MW-308B	09/12/2016	ND	0.6720	0.7500	**
Arsenic	ug/L	MW-308B	03/20/2017	ND	0.5050	0.7500	**

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Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Arsenic	ug/L	MW-308B	09/07/2017	ND	0.5050	0.7500	**
Arsenic	ug/L	MW-308B	03/15/2018	ND	0.5050	0.7500	**
Arsenic	ug/L	MW-308B	08/30/2018	ND	0.5700	0.7500	**
Arsenic	ug/L	MW-308B	04/02/2019	ND	0.7500		
Arsenic	ug/L	MW-308B	09/17/2019	ND	0.7500		
Barium	ug/L	MW-308B	03/18/2014		88.5000		
Barium	ug/L	MW-308B	08/27/2014		96.9000		
Barium	ug/L	MW-308B	03/19/2015		79.3000		
Barium	ug/L	MW-308B	08/20/2015		80.7000		
Barium	ug/L	MW-308B	03/09/2016		66.2000		
Barium	ug/L	MW-308B	09/12/2016		55.2000		
Barium	ug/L	MW-308B	03/20/2017		42.6000		
Barium	ug/L	MW-308B	09/07/2017		42.3000		
Barium	ug/L	MW-308B	03/15/2018		38.1000		
Barium	ug/L	MW-308B	08/30/2018		38.8000		
Barium	ug/L	MW-308B	04/02/2019		36.4000		
Barium	ug/L	MW-308B	09/17/2019		41.3000		
Benzene	ug/L	MW-308B	03/18/2014	ND	0.1100	0.2200	**
Benzene	ug/L	MW-308B	08/27/2014	ND	0.1100	0.2200	**
Benzene	ug/L	MW-308B	03/19/2015	ND	0.1100	0.2200	**
Benzene	ug/L	MW-308B	08/20/2015	ND	0.1100	0.2200	**
Benzene	ug/L	MW-308B	03/09/2016	ND	0.1100	0.2200	**
Benzene	ug/L	MW-308B	09/12/2016	ND	0.1100	0.2200	**
Benzene	ug/L	MW-308B	03/20/2017	ND	0.1100	0.2200	**
Benzene	ug/L	MW-308B	09/07/2017	ND	0.1100	0.2200	**
Benzene	ug/L	MW-308B	03/15/2018	ND	0.1100	0.2200	**
Benzene	ug/L	MW-308B	08/30/2018	ND	0.2200		
Benzene	ug/L	MW-308B	04/02/2019	ND	0.2200		
Benzene	ug/L	MW-308B	09/17/2019	ND	0.2200		
Beryllium	ug/L	MW-308B	03/18/2014	ND	0.0800	0.2700	**
Beryllium	ug/L	MW-308B	08/27/2014	ND	0.0390	0.2700	**
Beryllium	ug/L	MW-308B	03/19/2015	ND	0.0390	0.2700	**
Beryllium	ug/L	MW-308B	08/20/2015	ND	0.0390	0.2700	**
Beryllium	ug/L	MW-308B	03/09/2016	ND	0.2210	0.2700	**
Beryllium	ug/L	MW-308B	09/12/2016	ND	0.2210	0.2700	**
Beryllium	ug/L	MW-308B	03/20/2017	ND	0.1250	0.2700	**
Beryllium	ug/L	MW-308B	09/07/2017	ND	0.1250	0.2700	**
Beryllium	ug/L	MW-308B	03/15/2018	ND	0.1250	0.2700	**
Beryllium	ug/L	MW-308B	08/30/2018	ND	0.1900	0.2700	**
Beryllium	ug/L	MW-308B	04/02/2019	ND	0.2700		
Beryllium	ug/L	MW-308B	09/17/2019	ND	0.2700		
Cadmium	ug/L	MW-308B	03/18/2014	ND	0.1000	0.0550	**
Cadmium	ug/L	MW-308B	08/27/2014	ND	0.1120	0.0550	**
Cadmium	ug/L	MW-308B	03/19/2015	ND	0.1120	0.0550	**
Cadmium	ug/L	MW-308B	08/20/2015	ND	0.1120	0.0550	**
Cadmium	ug/L	MW-308B	03/09/2016	ND	0.0351	0.0550	**
Cadmium	ug/L	MW-308B	09/12/2016	ND	0.0351	0.0550	**
Cadmium	ug/L	MW-308B	03/20/2017	ND	0.0441	0.0550	**
Cadmium	ug/L	MW-308B	09/07/2017	ND	0.0441	0.0550	**
Cadmium	ug/L	MW-308B	03/15/2018	ND	0.0441	0.0550	**
Cadmium	ug/L	MW-308B	08/30/2018	ND	0.0600	0.0550	**
Cadmium	ug/L	MW-308B	04/02/2019	ND	0.0770	0.0550	**
Cadmium	ug/L	MW-308B	09/17/2019	ND	0.0390	0.0550	**
Chromium	ug/L	MW-308B	03/18/2014		0.8240		
Chromium	ug/L	MW-308B	08/27/2014		2.2600		
Chromium	ug/L	MW-308B	03/19/2015	ND	1.2400	1.1000	**
Chromium	ug/L	MW-308B	08/20/2015		1.3500		
Chromium	ug/L	MW-308B	03/09/2016		1.1400		
Chromium	ug/L	MW-308B	09/12/2016		1.8300		
Chromium	ug/L	MW-308B	03/20/2017		1.9100		
Chromium	ug/L	MW-308B	09/07/2017		2.5000		
Chromium	ug/L	MW-308B	03/15/2018		1.0900		
Chromium	ug/L	MW-308B	08/30/2018		4.0200		

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Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Chromium	ug/L	MW-308B	04/02/2019	ND	0.9800	1.1000	**
Chromium	ug/L	MW-308B	09/17/2019	ND	0.9800	1.1000	**
Cis-1,2-dichloroethylene	ug/L	MW-308B	03/18/2014	ND	0.1300	0.2100	**
Cis-1,2-dichloroethylene	ug/L	MW-308B	08/27/2014	ND	0.1300	0.2100	**
Cis-1,2-dichloroethylene	ug/L	MW-308B	03/19/2015	ND	0.1300	0.2100	**
Cis-1,2-dichloroethylene	ug/L	MW-308B	08/20/2015	ND	0.1300	0.2100	**
Cis-1,2-dichloroethylene	ug/L	MW-308B	03/09/2016	ND	0.1300	0.2100	**
Cis-1,2-dichloroethylene	ug/L	MW-308B	09/12/2016	ND	0.1300	0.2100	**
Cis-1,2-dichloroethylene	ug/L	MW-308B	03/20/2017	ND	0.1300	0.2100	**
Cis-1,2-dichloroethylene	ug/L	MW-308B	09/07/2017	ND	0.1300	0.2100	**
Cis-1,2-dichloroethylene	ug/L	MW-308B	03/15/2018	ND	0.1300	0.2100	**
Cis-1,2-dichloroethylene	ug/L	MW-308B	08/30/2018	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	MW-308B	04/02/2019	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	MW-308B	09/17/2019	ND	0.2100		
Cobalt	ug/L	MW-308B	03/18/2014		0.1070		
Cobalt	ug/L	MW-308B	08/27/2014	ND	0.0528	0.1900	**
Cobalt	ug/L	MW-308B	03/19/2015	ND	0.0528	0.1900	**
Cobalt	ug/L	MW-308B	08/20/2015	ND	0.0528	0.1900	**
Cobalt	ug/L	MW-308B	03/09/2016		0.0430		
Cobalt	ug/L	MW-308B	09/12/2016		0.0470		
Cobalt	ug/L	MW-308B	03/20/2017	ND	0.0453	0.1900	**
Cobalt	ug/L	MW-308B	09/07/2017		0.0770		
Cobalt	ug/L	MW-308B	03/15/2018		0.0490		
Cobalt	ug/L	MW-308B	08/30/2018		0.0640		
Cobalt	ug/L	MW-308B	04/02/2019	ND	0.0910	0.1900	**
Cobalt	ug/L	MW-308B	09/17/2019	ND	0.0910	0.1900	**
Copper	ug/L	MW-308B	03/18/2014		13.6000		*
Copper	ug/L	MW-308B	08/27/2014		0.9840		
Copper	ug/L	MW-308B	03/19/2015	ND	0.4850	1.8000	**
Copper	ug/L	MW-308B	08/20/2015		1.0100		
Copper	ug/L	MW-308B	03/09/2016		1.4700		
Copper	ug/L	MW-308B	09/12/2016	ND	1.2200	1.8000	**
Copper	ug/L	MW-308B	03/20/2017	ND	2.1900	1.8000	**
Copper	ug/L	MW-308B	09/07/2017	ND	2.1900	1.8000	**
Copper	ug/L	MW-308B	03/15/2018	ND	2.1900	1.8000	**
Copper	ug/L	MW-308B	08/30/2018	ND	1.6000	1.8000	**
Copper	ug/L	MW-308B	04/02/2019	ND	2.0000	1.8000	**
Copper	ug/L	MW-308B	09/17/2019	ND	2.0000	1.8000	**
Lead	ug/L	MW-308B	03/18/2014	ND	0.1800	0.2400	**
Lead	ug/L	MW-308B	08/27/2014		0.1910		
Lead	ug/L	MW-308B	03/19/2015	ND	0.0967	0.2400	**
Lead	ug/L	MW-308B	08/20/2015	ND	0.0967	0.2400	**
Lead	ug/L	MW-308B	03/09/2016	ND	0.2110	0.2400	**
Lead	ug/L	MW-308B	09/12/2016	ND	0.2110	0.2400	**
Lead	ug/L	MW-308B	03/20/2017	ND	0.3240	0.2400	**
Lead	ug/L	MW-308B	09/07/2017	ND	0.3240	0.2400	**
Lead	ug/L	MW-308B	03/15/2018	ND	0.3240	0.2400	**
Lead	ug/L	MW-308B	08/30/2018	ND	0.2500	0.2400	**
Lead	ug/L	MW-308B	04/02/2019	ND	0.2700	0.2400	**
Lead	ug/L	MW-308B	09/17/2019	ND	0.2700	0.2400	**
Nickel	ug/L	MW-308B	03/18/2014		1.6200		
Nickel	ug/L	MW-308B	08/27/2014		1.3900		
Nickel	ug/L	MW-308B	03/19/2015		1.1300		
Nickel	ug/L	MW-308B	08/20/2015		1.6600		
Nickel	ug/L	MW-308B	03/09/2016		1.5600		
Nickel	ug/L	MW-308B	09/12/2016		1.9900		
Nickel	ug/L	MW-308B	03/20/2017		2.0400		
Nickel	ug/L	MW-308B	09/07/2017		1.4500		
Nickel	ug/L	MW-308B	03/15/2018		1.4400		
Nickel	ug/L	MW-308B	08/30/2018		2.4500		
Nickel	ug/L	MW-308B	04/02/2019	ND	1.7000	1.9000	**
Nickel	ug/L	MW-308B	09/17/2019	ND	1.7000	1.9000	**
Selenium	ug/L	MW-308B	03/18/2014	ND	0.7000	0.9600	**

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Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Selenium	ug/L	MW-308B	08/27/2014	ND	3.3400	0.9600	**
Selenium	ug/L	MW-308B	03/19/2015	ND	3.3400	0.9600	**
Selenium	ug/L	MW-308B	08/20/2015	ND	3.3400	0.9600	**
Selenium	ug/L	MW-308B	03/09/2016		1.0200		
Selenium	ug/L	MW-308B	09/12/2016	ND	0.6300	0.9600	**
Selenium	ug/L	MW-308B	03/20/2017	ND	0.9280	0.9600	**
Selenium	ug/L	MW-308B	09/07/2017	ND	0.9280	0.9600	**
Selenium	ug/L	MW-308B	03/15/2018	ND	0.9280	0.9600	**
Selenium	ug/L	MW-308B	08/30/2018		1.5100		
Selenium	ug/L	MW-308B	04/02/2019	ND	1.0000	0.9600	**
Selenium	ug/L	MW-308B	09/17/2019	ND	1.0000	0.9600	**
Silver	ug/L	MW-308B	03/18/2014		0.0369		
Silver	ug/L	MW-308B	08/27/2014	ND	0.0420	0.3700	**
Silver	ug/L	MW-308B	03/19/2015	ND	0.0420	0.3700	**
Silver	ug/L	MW-308B	08/20/2015		0.1340		
Silver	ug/L	MW-308B	03/09/2016	ND	0.1530	0.3700	**
Silver	ug/L	MW-308B	09/12/2016	ND	0.1530	0.3700	**
Silver	ug/L	MW-308B	03/20/2017	ND	0.1400	0.3700	**
Silver	ug/L	MW-308B	09/07/2017	ND	0.1400	0.3700	**
Silver	ug/L	MW-308B	03/15/2018	ND	0.1400	0.3700	**
Silver	ug/L	MW-308B	08/30/2018	ND	0.3000	0.3700	**
Silver	ug/L	MW-308B	04/02/2019	ND	0.3700		
Silver	ug/L	MW-308B	09/17/2019	ND	0.3700		
Thallium	ug/L	MW-308B	03/18/2014	ND	0.0500	0.2600	**
Thallium	ug/L	MW-308B	08/27/2014	ND	0.0325	0.2600	**
Thallium	ug/L	MW-308B	03/19/2015	ND	0.0325	0.2600	**
Thallium	ug/L	MW-308B	08/20/2015	ND	0.0325	0.2600	**
Thallium	ug/L	MW-308B	03/09/2016	ND	0.0255	0.2600	**
Thallium	ug/L	MW-308B	09/12/2016	ND	0.0255	0.2600	**
Thallium	ug/L	MW-308B	03/20/2017	ND	0.0644	0.2600	**
Thallium	ug/L	MW-308B	09/07/2017	ND	0.0644	0.2600	**
Thallium	ug/L	MW-308B	03/15/2018	ND	0.0644	0.2600	**
Thallium	ug/L	MW-308B	08/30/2018	ND	0.1700	0.2600	**
Thallium	ug/L	MW-308B	04/02/2019	ND	0.2700	0.2600	**
Thallium	ug/L	MW-308B	09/17/2019	ND	0.2700	0.2600	**
Vanadium	ug/L	MW-308B	03/18/2014		0.8380		
Vanadium	ug/L	MW-308B	08/27/2014		1.1000		
Vanadium	ug/L	MW-308B	03/19/2015		0.9290		
Vanadium	ug/L	MW-308B	08/20/2015		0.9640		
Vanadium	ug/L	MW-308B	03/09/2016		0.9310		
Vanadium	ug/L	MW-308B	09/12/2016		0.8850		
Vanadium	ug/L	MW-308B	03/20/2017		1.0600		
Vanadium	ug/L	MW-308B	09/07/2017		1.1200		
Vanadium	ug/L	MW-308B	03/15/2018		1.3800		
Vanadium	ug/L	MW-308B	08/30/2018		1.1700		
Vanadium	ug/L	MW-308B	04/02/2019	ND	0.8200	1.1000	**
Vanadium	ug/L	MW-308B	09/17/2019	ND	0.8200	1.1000	**
Vinyl chloride	ug/L	MW-308B	03/18/2014	ND	0.1000	0.1800	**
Vinyl chloride	ug/L	MW-308B	08/27/2014	ND	0.1000	0.1800	**
Vinyl chloride	ug/L	MW-308B	03/19/2015	ND	0.1000	0.1800	**
Vinyl chloride	ug/L	MW-308B	08/20/2015	ND	0.1000	0.1800	**
Vinyl chloride	ug/L	MW-308B	03/09/2016	ND	0.1000	0.1800	**
Vinyl chloride	ug/L	MW-308B	09/12/2016	ND	0.1000	0.1800	**
Vinyl chloride	ug/L	MW-308B	03/20/2017	ND	0.1000	0.1800	**
Vinyl chloride	ug/L	MW-308B	09/07/2017	ND	0.1000	0.1800	**
Vinyl chloride	ug/L	MW-308B	03/15/2018	ND	0.1000	0.1800	**
Vinyl chloride	ug/L	MW-308B	08/30/2018	ND	0.6000		*
Vinyl chloride	ug/L	MW-308B	04/02/2019	ND	0.6000		*
Vinyl chloride	ug/L	MW-308B	09/17/2019	ND	0.1800		
Zinc	ug/L	MW-308B	03/18/2014	ND	2.0000		*
Zinc	ug/L	MW-308B	08/27/2014	ND	6.9500	10.0000	**
Zinc	ug/L	MW-308B	03/19/2015	ND	6.9500	10.0000	**
Zinc	ug/L	MW-308B	08/20/2015	ND	6.9500	10.0000	**

* - Outlier for that well and constituent.
** - ND value replaced with median RL.
*** - ND value replaced with manual RL.
ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Zinc	ug/L	MW-308B	03/09/2016		6.8000		
Zinc	ug/L	MW-308B	09/12/2016	ND	5.2100	10.0000	**
Zinc	ug/L	MW-308B	03/20/2017	ND	11.5000	10.0000	**
Zinc	ug/L	MW-308B	09/07/2017	ND	11.5000	10.0000	**
Zinc	ug/L	MW-308B	03/15/2018	ND	11.5000	10.0000	**
Zinc	ug/L	MW-308B	08/30/2018	ND	10.0000		
Zinc	ug/L	MW-308B	04/02/2019	ND	10.0000		
Zinc	ug/L	MW-308B	09/17/2019	ND	10.0000		
1,4-dichlorobenzene	ug/L	MW-319B	03/21/2014	ND	0.2000	0.2300	**
1,4-dichlorobenzene	ug/L	MW-319B	09/05/2014	ND	0.2000	0.2300	**
1,4-dichlorobenzene	ug/L	MW-319B	03/16/2015	ND	0.2000	0.2300	**
1,4-dichlorobenzene	ug/L	MW-319B	09/02/2015	ND	0.2000	0.2300	**
1,4-dichlorobenzene	ug/L	MW-319B	03/22/2016	ND	0.2000	0.2300	**
1,4-dichlorobenzene	ug/L	MW-319B	09/13/2016	ND	0.2000	0.2300	**
1,4-dichlorobenzene	ug/L	MW-319B	03/21/2017	ND	0.2000	0.2300	**
1,4-dichlorobenzene	ug/L	MW-319B	09/12/2017	ND	0.2000	0.2300	**
1,4-dichlorobenzene	ug/L	MW-319B	03/19/2018	ND	0.2000	0.2300	**
1,4-dichlorobenzene	ug/L	MW-319B	08/29/2018	ND	0.2300		
1,4-dichlorobenzene	ug/L	MW-319B	04/03/2019	ND	0.2300		
1,4-dichlorobenzene	ug/L	MW-319B	09/17/2019	ND	0.2300		
1,4-dichlorobenzene	ug/L	MW-319B	03/26/2020	ND	0.2300		
1,4-dichlorobenzene	ug/L	MW-319B	09/21/2020	ND	0.2300		
1,4-dichlorobenzene	ug/L	MW-319B	03/19/2021	ND	0.2300		
1,4-dichlorobenzene	ug/L	MW-319B	11/16/2021	ND	0.2300		
1,4-dichlorobenzene	ug/L	MW-319B	04/12/2022	ND	0.2300		
1,4-dichlorobenzene	ug/L	MW-319B	10/26/2022	ND	0.2300		
1,4-dichlorobenzene	ug/L	MW-319B	04/14/2023	ND	0.2300		
1,4-dichlorobenzene	ug/L	MW-319B	09/20/2023	ND	0.2300		
Antimony	ug/L	MW-319B	03/21/2014	ND	0.4000	0.6900	**
Antimony	ug/L	MW-319B	09/05/2014		0.2020		
Antimony	ug/L	MW-319B	03/16/2015	ND	0.1610	0.6900	**
Antimony	ug/L	MW-319B	09/02/2015		0.1690		
Antimony	ug/L	MW-319B	03/22/2016	ND	0.2370	0.6900	**
Antimony	ug/L	MW-319B	09/13/2016	ND	0.2370	0.6900	**
Antimony	ug/L	MW-319B	03/21/2017	ND	0.1850	0.6900	**
Antimony	ug/L	MW-319B	09/12/2017	ND	0.1850	0.6900	**
Antimony	ug/L	MW-319B	03/19/2018	ND	0.4200	0.6900	**
Antimony	ug/L	MW-319B	08/29/2018	ND	0.4200	0.6900	**
Antimony	ug/L	MW-319B	04/03/2019	ND	0.5300	0.6900	**
Antimony	ug/L	MW-319B	09/17/2019	ND	0.5300	0.6900	**
Antimony	ug/L	MW-319B	03/26/2020	ND	0.5800	0.6900	**
Antimony	ug/L	MW-319B	09/21/2020	ND	0.5100	0.6900	**
Antimony	ug/L	MW-319B	03/19/2021	ND	1.1000	0.6900	**
Antimony	ug/L	MW-319B	11/16/2021	ND	1.1000	0.6900	**
Antimony	ug/L	MW-319B	04/12/2022	ND	0.6900		
Antimony	ug/L	MW-319B	10/26/2022	ND	0.6900		
Antimony	ug/L	MW-319B	04/14/2023	ND	1.0000	0.6900	**
Antimony	ug/L	MW-319B	09/20/2023	ND	1.0000	0.6900	**
Arsenic	ug/L	MW-319B	03/21/2014		0.5550		
Arsenic	ug/L	MW-319B	09/05/2014	ND	0.9450	0.7500	**
Arsenic	ug/L	MW-319B	03/16/2015	ND	0.9450	0.7500	**
Arsenic	ug/L	MW-319B	09/02/2015	ND	0.9450	0.7500	**
Arsenic	ug/L	MW-319B	03/22/2016	ND	0.6720	0.7500	**
Arsenic	ug/L	MW-319B	09/13/2016	ND	0.6720	0.7500	**
Arsenic	ug/L	MW-319B	03/21/2017	ND	0.5050	0.7500	**
Arsenic	ug/L	MW-319B	09/12/2017	ND	0.5050	0.7500	**
Arsenic	ug/L	MW-319B	03/19/2018	ND	0.5700	0.7500	**
Arsenic	ug/L	MW-319B	08/29/2018	ND	0.5700	0.7500	**
Arsenic	ug/L	MW-319B	04/03/2019	ND	0.7500		
Arsenic	ug/L	MW-319B	09/17/2019	ND	0.7500		
Arsenic	ug/L	MW-319B	03/26/2020	ND	0.8800	0.7500	**
Arsenic	ug/L	MW-319B	09/21/2020	ND	0.8800	0.7500	**
Arsenic	ug/L	MW-319B	03/19/2021	ND	0.7500		

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Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Arsenic	ug/L	MW-319B	11/16/2021	ND	0.7500		
Arsenic	ug/L	MW-319B	04/12/2022	ND	0.7500		
Arsenic	ug/L	MW-319B	10/26/2022	ND	0.7500		
Arsenic	ug/L	MW-319B	04/14/2023	ND	0.5300	0.7500	**
Arsenic	ug/L	MW-319B	09/20/2023	ND	0.5300	0.7500	**
Barium	ug/L	MW-319B	03/21/2014		277.0000		
Barium	ug/L	MW-319B	09/05/2014		165.0000		
Barium	ug/L	MW-319B	03/16/2015		67.6000		*
Barium	ug/L	MW-319B	09/02/2015		161.0000		
Barium	ug/L	MW-319B	03/22/2016		198.0000		
Barium	ug/L	MW-319B	09/13/2016		199.0000		
Barium	ug/L	MW-319B	03/21/2017		231.0000		
Barium	ug/L	MW-319B	09/12/2017		204.0000		
Barium	ug/L	MW-319B	03/19/2018		288.0000		
Barium	ug/L	MW-319B	08/29/2018		226.0000		
Barium	ug/L	MW-319B	04/03/2019		252.0000		
Barium	ug/L	MW-319B	09/17/2019		247.0000		
Barium	ug/L	MW-319B	03/26/2020		212.0000		
Barium	ug/L	MW-319B	09/21/2020		201.0000		
Barium	ug/L	MW-319B	03/19/2021		226.0000		
Barium	ug/L	MW-319B	11/16/2021		248.0000		
Barium	ug/L	MW-319B	04/12/2022		139.0000		
Barium	ug/L	MW-319B	10/26/2022		247.0000		
Barium	ug/L	MW-319B	04/14/2023		214.0000		
Barium	ug/L	MW-319B	09/20/2023		184.0000		
Benzene	ug/L	MW-319B	03/21/2014	ND	0.1100	0.2200	**
Benzene	ug/L	MW-319B	09/05/2014	ND	0.1100	0.2200	**
Benzene	ug/L	MW-319B	03/16/2015	ND	0.1100	0.2200	**
Benzene	ug/L	MW-319B	09/02/2015	ND	0.1100	0.2200	**
Benzene	ug/L	MW-319B	03/22/2016	ND	0.1100	0.2200	**
Benzene	ug/L	MW-319B	09/13/2016	ND	0.1100	0.2200	**
Benzene	ug/L	MW-319B	03/21/2017	ND	0.1100	0.2200	**
Benzene	ug/L	MW-319B	09/12/2017	ND	0.1100	0.2200	**
Benzene	ug/L	MW-319B	03/19/2018	ND	0.1100	0.2200	**
Benzene	ug/L	MW-319B	08/29/2018	ND	0.2200		
Benzene	ug/L	MW-319B	04/03/2019	ND	0.2200		
Benzene	ug/L	MW-319B	09/17/2019	ND	0.2200		
Benzene	ug/L	MW-319B	03/26/2020	ND	0.2200		
Benzene	ug/L	MW-319B	09/21/2020	ND	0.2200		
Benzene	ug/L	MW-319B	03/19/2021	ND	0.2200		
Benzene	ug/L	MW-319B	11/16/2021	ND	0.2200		
Benzene	ug/L	MW-319B	04/12/2022	ND	0.2200		
Benzene	ug/L	MW-319B	10/26/2022	ND	0.2200		
Benzene	ug/L	MW-319B	04/14/2023	ND	0.2200		
Benzene	ug/L	MW-319B	09/20/2023	ND	0.2200		
Beryllium	ug/L	MW-319B	03/21/2014	ND	0.0800	0.2700	**
Beryllium	ug/L	MW-319B	09/05/2014	ND	0.0390	0.2700	**
Beryllium	ug/L	MW-319B	03/16/2015	ND	0.0390	0.2700	**
Beryllium	ug/L	MW-319B	09/02/2015	ND	0.0390	0.2700	**
Beryllium	ug/L	MW-319B	03/22/2016	ND	0.2210	0.2700	**
Beryllium	ug/L	MW-319B	09/13/2016	ND	0.2210	0.2700	**
Beryllium	ug/L	MW-319B	03/21/2017	ND	0.1250	0.2700	**
Beryllium	ug/L	MW-319B	09/12/2017	ND	0.1250	0.2700	**
Beryllium	ug/L	MW-319B	03/19/2018	ND	0.1900	0.2700	**
Beryllium	ug/L	MW-319B	08/29/2018	ND	0.1900	0.2700	**
Beryllium	ug/L	MW-319B	04/03/2019	ND	0.2700		
Beryllium	ug/L	MW-319B	09/17/2019	ND	0.2700		
Beryllium	ug/L	MW-319B	03/26/2020	ND	0.2700		
Beryllium	ug/L	MW-319B	09/21/2020	ND	0.2700		
Beryllium	ug/L	MW-319B	03/19/2021	ND	0.2700		
Beryllium	ug/L	MW-319B	11/16/2021	ND	0.2700		
Beryllium	ug/L	MW-319B	04/12/2022	ND	0.2700		
Beryllium	ug/L	MW-319B	10/26/2022	ND	0.2700		

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Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Beryllium	ug/L	MW-319B	04/14/2023	ND	0.3300	0.2700	**
Beryllium	ug/L	MW-319B	09/20/2023	ND	0.3300	0.2700	**
Cadmium	ug/L	MW-319B	03/21/2014	ND	0.1000	0.0550	**
Cadmium	ug/L	MW-319B	09/05/2014	ND	0.1120	0.0550	**
Cadmium	ug/L	MW-319B	03/16/2015	ND	0.1120	0.0550	**
Cadmium	ug/L	MW-319B	09/02/2015	ND	0.1120	0.0550	**
Cadmium	ug/L	MW-319B	03/22/2016	ND	0.0351	0.0550	**
Cadmium	ug/L	MW-319B	09/13/2016	ND	0.0351	0.0550	**
Cadmium	ug/L	MW-319B	03/21/2017	ND	0.0441	0.0550	**
Cadmium	ug/L	MW-319B	09/12/2017	ND	0.0441	0.0550	**
Cadmium	ug/L	MW-319B	03/19/2018	ND	0.0600	0.0550	**
Cadmium	ug/L	MW-319B	08/29/2018	ND	0.0600	0.0550	**
Cadmium	ug/L	MW-319B	04/03/2019	ND	0.0770	0.0550	**
Cadmium	ug/L	MW-319B	09/17/2019	ND	0.0390	0.0550	**
Cadmium	ug/L	MW-319B	03/26/2020	ND	0.0390	0.0550	**
Cadmium	ug/L	MW-319B	09/21/2020	ND	0.0490	0.0550	**
Cadmium	ug/L	MW-319B	03/19/2021	ND	0.0510	0.0550	**
Cadmium	ug/L	MW-319B	11/16/2021	ND	0.0510	0.0550	**
Cadmium	ug/L	MW-319B	04/12/2022	ND	0.0550		
Cadmium	ug/L	MW-319B	10/26/2022	ND	0.0550		
Cadmium	ug/L	MW-319B	04/14/2023	ND	0.1000	0.0550	**
Cadmium	ug/L	MW-319B	09/20/2023	ND	0.1000	0.0550	**
Chromium	ug/L	MW-319B	03/21/2014		2920.0000		*
Chromium	ug/L	MW-319B	09/05/2014		3.8800		
Chromium	ug/L	MW-319B	03/16/2015	ND	1.2400	1.1000	**
Chromium	ug/L	MW-319B	09/02/2015		7.1400		
Chromium	ug/L	MW-319B	03/22/2016		2.0600		
Chromium	ug/L	MW-319B	09/13/2016		1.1400		
Chromium	ug/L	MW-319B	03/21/2017		1.0100		
Chromium	ug/L	MW-319B	09/12/2017		3.4400		
Chromium	ug/L	MW-319B	03/19/2018	ND	0.7600	1.1000	**
Chromium	ug/L	MW-319B	08/29/2018		9.0600		
Chromium	ug/L	MW-319B	12/16/2018		6.6900		
Chromium	ug/L	MW-319B	04/03/2019	ND	0.9800	1.1000	**
Chromium	ug/L	MW-319B	09/17/2019	ND	0.9800	1.1000	**
Chromium	ug/L	MW-319B	03/26/2020		9.1300		
Chromium	ug/L	MW-319B	09/21/2020		10.9000		
Chromium	ug/L	MW-319B	03/19/2021		7.0800		
Chromium	ug/L	MW-319B	11/16/2021		19.2000		
Chromium	ug/L	MW-319B	04/12/2022		15.6000		
Chromium	ug/L	MW-319B	10/26/2022		27.0000		
Chromium	ug/L	MW-319B	04/14/2023		13.4000		
Chromium	ug/L	MW-319B	09/20/2023		17.1000		
Cis-1,2-dichloroethylene	ug/L	MW-319B	03/21/2014	ND	0.1300	0.2100	**
Cis-1,2-dichloroethylene	ug/L	MW-319B	09/05/2014	ND	0.1300	0.2100	**
Cis-1,2-dichloroethylene	ug/L	MW-319B	03/16/2015	ND	0.1300	0.2100	**
Cis-1,2-dichloroethylene	ug/L	MW-319B	09/02/2015	ND	0.1300	0.2100	**
Cis-1,2-dichloroethylene	ug/L	MW-319B	03/22/2016	ND	0.1300	0.2100	**
Cis-1,2-dichloroethylene	ug/L	MW-319B	09/13/2016	ND	0.1300	0.2100	**
Cis-1,2-dichloroethylene	ug/L	MW-319B	03/21/2017	ND	0.1300	0.2100	**
Cis-1,2-dichloroethylene	ug/L	MW-319B	09/12/2017	ND	0.1300	0.2100	**
Cis-1,2-dichloroethylene	ug/L	MW-319B	03/19/2018	ND	0.1300	0.2100	**
Cis-1,2-dichloroethylene	ug/L	MW-319B	08/29/2018	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	MW-319B	04/03/2019	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	MW-319B	09/17/2019	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	MW-319B	03/26/2020	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	MW-319B	09/21/2020	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	MW-319B	03/19/2021	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	MW-319B	11/16/2021	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	MW-319B	04/12/2022	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	MW-319B	10/26/2022	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	MW-319B	04/14/2023	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	MW-319B	09/20/2023	ND	0.2100		

* - Outlier for that well and constituent.
** - ND value replaced with median RL.
*** - ND value replaced with manual RL.
ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Cobalt	ug/L	MW-319B	03/21/2014		9.8300		
Cobalt	ug/L	MW-319B	09/05/2014		0.0970		
Cobalt	ug/L	MW-319B	03/16/2015		0.0540		
Cobalt	ug/L	MW-319B	09/02/2015		0.1170		
Cobalt	ug/L	MW-319B	03/22/2016		0.0350		
Cobalt	ug/L	MW-319B	09/13/2016		0.1980		
Cobalt	ug/L	MW-319B	03/21/2017		0.0770		
Cobalt	ug/L	MW-319B	09/12/2017		0.2480		
Cobalt	ug/L	MW-319B	03/19/2018		1.0400		
Cobalt	ug/L	MW-319B	08/29/2018		0.7370		
Cobalt	ug/L	MW-319B	04/03/2019		2.8900		
Cobalt	ug/L	MW-319B	09/17/2019		1.9500		
Cobalt	ug/L	MW-319B	03/26/2020	ND	0.0910	0.1900	**
Cobalt	ug/L	MW-319B	09/21/2020	ND	0.0910	0.1900	**
Cobalt	ug/L	MW-319B	03/19/2021	ND	0.0910	0.1900	**
Cobalt	ug/L	MW-319B	11/16/2021	ND	0.1900		
Cobalt	ug/L	MW-319B	04/12/2022	ND	0.1900		
Cobalt	ug/L	MW-319B	10/26/2022	ND	0.1900		
Cobalt	ug/L	MW-319B	04/14/2023	ND	0.1700	0.1900	**
Cobalt	ug/L	MW-319B	09/20/2023	ND	0.1700	0.1900	**
Copper	ug/L	MW-319B	03/21/2014		13.7000		*
Copper	ug/L	MW-319B	09/05/2014		1.7700		
Copper	ug/L	MW-319B	03/16/2015	ND	0.4850		*
Copper	ug/L	MW-319B	09/02/2015	ND	0.4850		*
Copper	ug/L	MW-319B	03/22/2016	ND	1.2200	1.8000	**
Copper	ug/L	MW-319B	09/13/2016	ND	1.2200	1.8000	**
Copper	ug/L	MW-319B	03/21/2017	ND	2.1900	1.8000	**
Copper	ug/L	MW-319B	09/12/2017	ND	2.1900	1.8000	**
Copper	ug/L	MW-319B	03/19/2018	ND	1.6000	1.8000	**
Copper	ug/L	MW-319B	08/29/2018	ND	1.6000	1.8000	**
Copper	ug/L	MW-319B	04/03/2019	ND	2.0000	1.8000	**
Copper	ug/L	MW-319B	09/17/2019	ND	2.0000	1.8000	**
Copper	ug/L	MW-319B	03/26/2020	ND	3.2000	1.8000	**
Copper	ug/L	MW-319B	09/21/2020	ND	1.5000	1.8000	**
Copper	ug/L	MW-319B	03/19/2021	ND	1.4000	1.8000	**
Copper	ug/L	MW-319B	11/16/2021	ND	1.4000	1.8000	**
Copper	ug/L	MW-319B	04/12/2022	ND	1.8000		
Copper	ug/L	MW-319B	10/26/2022	ND	1.8000		
Copper	ug/L	MW-319B	04/14/2023	ND	1.8000		
Copper	ug/L	MW-319B	09/20/2023	ND	1.8000		
Lead	ug/L	MW-319B	03/21/2014		0.3230		
Lead	ug/L	MW-319B	09/05/2014	ND	0.0967	0.2400	**
Lead	ug/L	MW-319B	03/16/2015	ND	0.0967	0.2400	**
Lead	ug/L	MW-319B	09/02/2015		0.1230		
Lead	ug/L	MW-319B	03/22/2016	ND	0.2110	0.2400	**
Lead	ug/L	MW-319B	09/13/2016	ND	0.2110	0.2400	**
Lead	ug/L	MW-319B	03/21/2017	ND	0.3240	0.2400	**
Lead	ug/L	MW-319B	09/12/2017	ND	0.3240	0.2400	**
Lead	ug/L	MW-319B	03/19/2018	ND	0.2500	0.2400	**
Lead	ug/L	MW-319B	08/29/2018	ND	0.2500	0.2400	**
Lead	ug/L	MW-319B	04/03/2019	ND	0.2700	0.2400	**
Lead	ug/L	MW-319B	09/17/2019	ND	0.2700	0.2400	**
Lead	ug/L	MW-319B	03/26/2020	ND	0.2700	0.2400	**
Lead	ug/L	MW-319B	09/21/2020	ND	0.1100	0.2400	**
Lead	ug/L	MW-319B	03/19/2021	ND	0.2100	0.2400	**
Lead	ug/L	MW-319B	11/16/2021	ND	0.2100	0.2400	**
Lead	ug/L	MW-319B	04/12/2022	ND	0.2400		
Lead	ug/L	MW-319B	10/26/2022	ND	0.2400		
Lead	ug/L	MW-319B	04/14/2023	ND	0.2400		
Lead	ug/L	MW-319B	09/20/2023	ND	0.2400		
Nickel	ug/L	MW-319B	03/21/2014		722.0000		
Nickel	ug/L	MW-319B	09/05/2014		64.4000		
Nickel	ug/L	MW-319B	03/16/2015		17.7000		

* - Outlier for that well and constituent.
** - ND value replaced with median RL.
*** - ND value replaced with manual RL.
ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Nickel	ug/L	MW-319B	09/02/2015		52.7000		
Nickel	ug/L	MW-319B	03/22/2016		49.3000		
Nickel	ug/L	MW-319B	09/13/2016		71.4000		
Nickel	ug/L	MW-319B	03/21/2017		46.2000		
Nickel	ug/L	MW-319B	09/12/2017		47.8000		
Nickel	ug/L	MW-319B	03/19/2018		344.0000		
Nickel	ug/L	MW-319B	08/29/2018		210.0000		
Nickel	ug/L	MW-319B	12/16/2018		399.0000		
Nickel	ug/L	MW-319B	04/03/2019		223.0000		
Nickel	ug/L	MW-319B	09/17/2019		229.0000		
Nickel	ug/L	MW-319B	03/26/2020		81.0000		
Nickel	ug/L	MW-319B	09/21/2020		56.9000		
Nickel	ug/L	MW-319B	03/19/2021		59.3000		
Nickel	ug/L	MW-319B	11/16/2021		52.1000		
Nickel	ug/L	MW-319B	04/12/2022		47.9000		
Nickel	ug/L	MW-319B	10/26/2022		57.4000		
Nickel	ug/L	MW-319B	04/14/2023		64.8000		
Nickel	ug/L	MW-319B	09/20/2023		39.0000		
Selenium	ug/L	MW-319B	03/21/2014	ND	0.7000	0.9600	**
Selenium	ug/L	MW-319B	09/05/2014	ND	3.3400		*
Selenium	ug/L	MW-319B	03/16/2015	ND	3.3400		*
Selenium	ug/L	MW-319B	09/02/2015	ND	3.3400		*
Selenium	ug/L	MW-319B	03/22/2016		0.8090		
Selenium	ug/L	MW-319B	09/13/2016	ND	0.6300	0.9600	**
Selenium	ug/L	MW-319B	03/21/2017	ND	0.9280	0.9600	**
Selenium	ug/L	MW-319B	09/12/2017	ND	0.9280	0.9600	**
Selenium	ug/L	MW-319B	03/19/2018	ND	0.9000	0.9600	**
Selenium	ug/L	MW-319B	08/29/2018	ND	0.9000	0.9600	**
Selenium	ug/L	MW-319B	04/03/2019	ND	1.0000	0.9600	**
Selenium	ug/L	MW-319B	09/17/2019	ND	1.0000	0.9600	**
Selenium	ug/L	MW-319B	03/26/2020	ND	1.0000	0.9600	**
Selenium	ug/L	MW-319B	09/21/2020	ND	1.0000	0.9600	**
Selenium	ug/L	MW-319B	03/19/2021	ND	0.9600		
Selenium	ug/L	MW-319B	11/16/2021	ND	0.9600		
Selenium	ug/L	MW-319B	04/12/2022	ND	0.9600		
Selenium	ug/L	MW-319B	10/26/2022	ND	0.9600		
Selenium	ug/L	MW-319B	04/14/2023	ND	1.4000	0.9600	**
Selenium	ug/L	MW-319B	09/20/2023	ND	1.4000	0.9600	**
Silver	ug/L	MW-319B	03/21/2014	ND	0.0330	0.3700	**
Silver	ug/L	MW-319B	09/05/2014	ND	0.0420	0.3700	**
Silver	ug/L	MW-319B	03/16/2015	ND	0.0420	0.3700	**
Silver	ug/L	MW-319B	09/02/2015		0.1080		
Silver	ug/L	MW-319B	03/22/2016	ND	0.1530	0.3700	**
Silver	ug/L	MW-319B	09/13/2016	ND	0.1530	0.3700	**
Silver	ug/L	MW-319B	03/21/2017	ND	0.1400	0.3700	**
Silver	ug/L	MW-319B	09/12/2017	ND	0.1400	0.3700	**
Silver	ug/L	MW-319B	03/19/2018	ND	0.3000	0.3700	**
Silver	ug/L	MW-319B	08/29/2018	ND	0.3000	0.3700	**
Silver	ug/L	MW-319B	04/03/2019	ND	0.3700		
Silver	ug/L	MW-319B	09/17/2019	ND	0.3700		
Silver	ug/L	MW-319B	03/26/2020	ND	0.3700		
Silver	ug/L	MW-319B	09/21/2020	ND	0.3700		
Silver	ug/L	MW-319B	03/19/2021	ND	0.4200	0.3700	**
Silver	ug/L	MW-319B	11/16/2021	ND	0.4200	0.3700	**
Silver	ug/L	MW-319B	04/12/2022	ND	0.4900	0.3700	**
Silver	ug/L	MW-319B	10/26/2022	ND	0.4900	0.3700	**
Silver	ug/L	MW-319B	04/14/2023	ND	0.5000	0.3700	**
Silver	ug/L	MW-319B	09/20/2023	ND	0.5000	0.3700	**
Thallium	ug/L	MW-319B	03/21/2014	ND	0.0500	0.2600	**
Thallium	ug/L	MW-319B	09/05/2014	ND	0.0325	0.2600	**
Thallium	ug/L	MW-319B	03/16/2015	ND	0.0325	0.2600	**
Thallium	ug/L	MW-319B	09/02/2015	ND	0.0325	0.2600	**
Thallium	ug/L	MW-319B	03/22/2016	ND	0.0255	0.2600	**

* - Outlier for that well and constituent.
** - ND value replaced with median RL.
*** - ND value replaced with manual RL.
ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Thallium	ug/L	MW-319B	09/13/2016	ND	0.0255	0.2600	**
Thallium	ug/L	MW-319B	03/21/2017	ND	0.0644	0.2600	**
Thallium	ug/L	MW-319B	09/12/2017	ND	0.0644	0.2600	**
Thallium	ug/L	MW-319B	03/19/2018	ND	0.1700	0.2600	**
Thallium	ug/L	MW-319B	08/29/2018	ND	0.1700	0.2600	**
Thallium	ug/L	MW-319B	04/03/2019	ND	0.2700	0.2600	**
Thallium	ug/L	MW-319B	09/17/2019	ND	0.2700	0.2600	**
Thallium	ug/L	MW-319B	03/26/2020	ND	0.2600		
Thallium	ug/L	MW-319B	09/21/2020	ND	0.2600		
Thallium	ug/L	MW-319B	03/19/2021	ND	0.2600		
Thallium	ug/L	MW-319B	11/16/2021	ND	0.2600		
Thallium	ug/L	MW-319B	04/12/2022	ND	0.2600		
Thallium	ug/L	MW-319B	10/26/2022	ND	0.2600		
Thallium	ug/L	MW-319B	04/14/2023	ND	0.2600		
Thallium	ug/L	MW-319B	09/20/2023	ND	0.2600		
Vanadium	ug/L	MW-319B	03/21/2014		97.5000		*
Vanadium	ug/L	MW-319B	09/05/2014		0.7540		
Vanadium	ug/L	MW-319B	03/16/2015		0.5760		
Vanadium	ug/L	MW-319B	09/02/2015		0.9360		
Vanadium	ug/L	MW-319B	03/22/2016		0.4480		
Vanadium	ug/L	MW-319B	09/13/2016		0.6410		
Vanadium	ug/L	MW-319B	03/21/2017	ND	0.8400	1.1000	**
Vanadium	ug/L	MW-319B	09/12/2017	ND	0.8400	1.1000	**
Vanadium	ug/L	MW-319B	03/19/2018		0.6530		
Vanadium	ug/L	MW-319B	08/29/2018		0.8280		
Vanadium	ug/L	MW-319B	04/03/2019	ND	0.8200	1.1000	**
Vanadium	ug/L	MW-319B	09/17/2019	ND	0.8200	1.1000	**
Vanadium	ug/L	MW-319B	03/26/2020	ND	0.8200	1.1000	**
Vanadium	ug/L	MW-319B	09/21/2020	ND	0.8500	1.1000	**
Vanadium	ug/L	MW-319B	03/19/2021	ND	1.1000		
Vanadium	ug/L	MW-319B	11/16/2021	ND	1.1000		
Vanadium	ug/L	MW-319B	04/12/2022	ND	1.1000		
Vanadium	ug/L	MW-319B	10/26/2022	ND	1.1000		
Vanadium	ug/L	MW-319B	04/14/2023	ND	1.1000		
Vanadium	ug/L	MW-319B	09/20/2023	ND	1.1000		
Vinyl chloride	ug/L	MW-319B	03/21/2014	ND	0.1000	0.1800	**
Vinyl chloride	ug/L	MW-319B	09/05/2014	ND	0.1000	0.1800	**
Vinyl chloride	ug/L	MW-319B	03/16/2015	ND	0.1000	0.1800	**
Vinyl chloride	ug/L	MW-319B	09/02/2015	ND	0.1000	0.1800	**
Vinyl chloride	ug/L	MW-319B	03/22/2016	ND	0.1000	0.1800	**
Vinyl chloride	ug/L	MW-319B	09/13/2016	ND	0.1000	0.1800	**
Vinyl chloride	ug/L	MW-319B	03/21/2017	ND	0.1000	0.1800	**
Vinyl chloride	ug/L	MW-319B	09/12/2017	ND	0.1000	0.1800	**
Vinyl chloride	ug/L	MW-319B	03/19/2018	ND	0.1000	0.1800	**
Vinyl chloride	ug/L	MW-319B	08/29/2018	ND	0.6000		*
Vinyl chloride	ug/L	MW-319B	04/03/2019	ND	0.6000		*
Vinyl chloride	ug/L	MW-319B	09/17/2019	ND	0.1800		
Vinyl chloride	ug/L	MW-319B	03/26/2020	ND	0.1800		
Vinyl chloride	ug/L	MW-319B	09/21/2020	ND	0.1800		
Vinyl chloride	ug/L	MW-319B	03/19/2021	ND	0.1800		
Vinyl chloride	ug/L	MW-319B	11/16/2021	ND	0.1800		
Vinyl chloride	ug/L	MW-319B	04/12/2022	ND	0.1800		
Vinyl chloride	ug/L	MW-319B	10/26/2022	ND	0.1800		
Vinyl chloride	ug/L	MW-319B	04/14/2023	ND	0.1800		
Vinyl chloride	ug/L	MW-319B	09/20/2023	ND	0.1800		
Zinc	ug/L	MW-319B	03/21/2014		3.4500		
Zinc	ug/L	MW-319B	09/05/2014		7.5400		
Zinc	ug/L	MW-319B	03/16/2015	ND	6.9500	10.0000	**
Zinc	ug/L	MW-319B	09/02/2015	ND	6.9500	10.0000	**
Zinc	ug/L	MW-319B	03/22/2016	ND	5.2100	10.0000	**
Zinc	ug/L	MW-319B	09/13/2016	ND	5.2100	10.0000	**
Zinc	ug/L	MW-319B	03/21/2017	ND	11.5000	10.0000	**
Zinc	ug/L	MW-319B	09/12/2017	ND	11.5000	10.0000	**

* - Outlier for that well and constituent.
** - ND value replaced with median RL.
*** - ND value replaced with manual RL.
ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Zinc	ug/L	MW-319B	03/19/2018	ND	10.0000		
Zinc	ug/L	MW-319B	08/29/2018	ND	10.0000		
Zinc	ug/L	MW-319B	04/03/2019	ND	10.0000		
Zinc	ug/L	MW-319B	09/17/2019	ND	10.0000		
Zinc	ug/L	MW-319B	03/26/2020	ND	10.0000		
Zinc	ug/L	MW-319B	09/21/2020	ND	10.0000		
Zinc	ug/L	MW-319B	03/19/2021	ND	10.0000		
Zinc	ug/L	MW-319B	11/16/2021	ND	10.0000		
Zinc	ug/L	MW-319B	04/12/2022	ND	10.0000		
Zinc	ug/L	MW-319B	10/26/2022	ND	10.0000		
Zinc	ug/L	MW-319B	04/14/2023	ND	6.4000	10.0000	**
Zinc	ug/L	MW-319B	09/20/2023	ND	6.4000	10.0000	**
1,4-dichlorobenzene	ug/L	MW-701B	11/19/2021	ND	0.2300		
1,4-dichlorobenzene	ug/L	MW-701B	04/27/2022	ND	0.2300		
1,4-dichlorobenzene	ug/L	MW-701B	07/27/2022	ND	0.2300		
1,4-dichlorobenzene	ug/L	MW-701B	10/20/2022	ND	0.2300		
1,4-dichlorobenzene	ug/L	MW-701B	01/09/2023	ND	0.2300		
Antimony	ug/L	MW-701B	11/19/2021	ND	1.1000	0.6900	**
Antimony	ug/L	MW-701B	04/27/2022	ND	0.6900		
Antimony	ug/L	MW-701B	07/27/2022	ND	0.6900		
Antimony	ug/L	MW-701B	10/20/2022	ND	0.6900		
Antimony	ug/L	MW-701B	01/09/2023	ND	0.6900		
Arsenic	ug/L	MW-701B	11/19/2021	ND	0.7500		
Arsenic	ug/L	MW-701B	04/27/2022	ND	0.7500		
Arsenic	ug/L	MW-701B	07/27/2022	ND	0.7500		
Arsenic	ug/L	MW-701B	10/20/2022	ND	0.7500		
Arsenic	ug/L	MW-701B	01/09/2023	ND	0.7500		
Barium	ug/L	MW-701B	11/19/2021		378.0000		
Barium	ug/L	MW-701B	04/27/2022		158.0000		
Barium	ug/L	MW-701B	07/27/2022		188.0000		
Barium	ug/L	MW-701B	10/20/2022		167.0000		
Barium	ug/L	MW-701B	01/09/2023		213.0000		
Benzene	ug/L	MW-701B	11/19/2021	ND	0.2200		
Benzene	ug/L	MW-701B	04/27/2022	ND	0.2200		
Benzene	ug/L	MW-701B	07/27/2022	ND	0.2200		
Benzene	ug/L	MW-701B	10/20/2022	ND	0.2200		
Benzene	ug/L	MW-701B	01/09/2023	ND	0.2200		
Beryllium	ug/L	MW-701B	11/19/2021	ND	0.2700		
Beryllium	ug/L	MW-701B	04/27/2022	ND	0.2700		
Beryllium	ug/L	MW-701B	07/27/2022	ND	0.2700		
Beryllium	ug/L	MW-701B	10/20/2022	ND	0.2700		
Beryllium	ug/L	MW-701B	01/09/2023	ND	0.2700		
Cadmium	ug/L	MW-701B	11/19/2021	ND	0.0510	0.0550	**
Cadmium	ug/L	MW-701B	04/27/2022	ND	0.0550		
Cadmium	ug/L	MW-701B	07/27/2022	ND	0.0550		
Cadmium	ug/L	MW-701B	10/20/2022	ND	0.0550		
Cadmium	ug/L	MW-701B	01/09/2023		0.1060		
Chromium	ug/L	MW-701B	11/19/2021	ND	1.1000		
Chromium	ug/L	MW-701B	04/27/2022	ND	1.1000		
Chromium	ug/L	MW-701B	07/27/2022	ND	1.1000		
Chromium	ug/L	MW-701B	10/20/2022	ND	1.1000		
Chromium	ug/L	MW-701B	01/09/2023	ND	1.1000		
Cis-1,2-dichloroethylene	ug/L	MW-701B	11/19/2021	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	MW-701B	04/27/2022	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	MW-701B	07/27/2022	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	MW-701B	10/20/2022	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	MW-701B	01/09/2023	ND	0.2100		
Cobalt	ug/L	MW-701B	11/19/2021	ND	0.1900		
Cobalt	ug/L	MW-701B	04/27/2022	ND	0.1900		
Cobalt	ug/L	MW-701B	07/27/2022	ND	0.1900		
Cobalt	ug/L	MW-701B	10/20/2022		0.5530		
Cobalt	ug/L	MW-701B	01/09/2023	ND	0.1900		
Copper	ug/L	MW-701B	11/19/2021	ND	1.4000	1.8000	**

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** - ND value replaced with median RL.
*** - ND value replaced with manual RL.
ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Copper	ug/L	MW-701B	04/27/2022	ND	1.8000		
Copper	ug/L	MW-701B	07/27/2022	ND	1.8000		
Copper	ug/L	MW-701B	10/20/2022	ND	1.8000		
Copper	ug/L	MW-701B	01/09/2023	ND	1.8000		
Lead	ug/L	MW-701B	11/19/2021	ND	0.2100	0.2400	**
Lead	ug/L	MW-701B	04/27/2022	ND	0.2400		
Lead	ug/L	MW-701B	07/27/2022	ND	0.2400		
Lead	ug/L	MW-701B	10/20/2022	ND	0.2400		
Lead	ug/L	MW-701B	01/09/2023	ND	0.2400		
Nickel	ug/L	MW-701B	11/19/2021	ND	1.9000		
Nickel	ug/L	MW-701B	04/27/2022	ND	1.9000		
Nickel	ug/L	MW-701B	07/27/2022	ND	1.9000		
Nickel	ug/L	MW-701B	10/20/2022	ND	1.9000		
Nickel	ug/L	MW-701B	01/09/2023	ND	1.9000		
Selenium	ug/L	MW-701B	11/19/2021	ND	0.9600		
Selenium	ug/L	MW-701B	04/27/2022	ND	0.9600		
Selenium	ug/L	MW-701B	07/27/2022	ND	0.9600		
Selenium	ug/L	MW-701B	10/20/2022	ND	0.9600		
Selenium	ug/L	MW-701B	01/09/2023	ND	0.9600		
Silver	ug/L	MW-701B	11/19/2021	ND	0.4200	0.3700	**
Silver	ug/L	MW-701B	04/27/2022	ND	0.4900	0.3700	**
Silver	ug/L	MW-701B	07/27/2022	ND	0.4900	0.3700	**
Silver	ug/L	MW-701B	10/20/2022	ND	0.4900	0.3700	**
Silver	ug/L	MW-701B	01/09/2023	ND	0.4900	0.3700	**
Thallium	ug/L	MW-701B	11/19/2021	ND	0.2600		
Thallium	ug/L	MW-701B	04/27/2022	ND	0.2600		
Thallium	ug/L	MW-701B	07/27/2022	ND	0.2600		
Thallium	ug/L	MW-701B	10/20/2022	ND	0.2600		
Thallium	ug/L	MW-701B	01/09/2023	ND	0.2600		
Vanadium	ug/L	MW-701B	11/19/2021	ND	1.1000		
Vanadium	ug/L	MW-701B	04/27/2022	ND	1.1000		
Vanadium	ug/L	MW-701B	07/27/2022	ND	1.1000		
Vanadium	ug/L	MW-701B	10/20/2022	ND	1.1000		
Vanadium	ug/L	MW-701B	01/09/2023	ND	1.1000		
Vinyl chloride	ug/L	MW-701B	11/19/2021	ND	0.1800		
Vinyl chloride	ug/L	MW-701B	04/27/2022	ND	0.1800		
Vinyl chloride	ug/L	MW-701B	07/27/2022	ND	0.1800		
Vinyl chloride	ug/L	MW-701B	10/20/2022	ND	0.1800		
Vinyl chloride	ug/L	MW-701B	01/09/2023	ND	0.1800		
Zinc	ug/L	MW-701B	11/19/2021	ND	10.0000		
Zinc	ug/L	MW-701B	04/27/2022	ND	10.0000		
Zinc	ug/L	MW-701B	07/27/2022	ND	10.0000		
Zinc	ug/L	MW-701B	10/20/2022	ND	10.0000		
Zinc	ug/L	MW-701B	01/09/2023	ND	10.0000		
1,4-dichlorobenzene	ug/L	MW-702B	11/19/2021	ND	0.2300		
1,4-dichlorobenzene	ug/L	MW-702B	05/02/2022	ND	0.2300		
1,4-dichlorobenzene	ug/L	MW-702B	07/27/2022	ND	0.2300		
1,4-dichlorobenzene	ug/L	MW-702B	10/11/2022	ND	0.2300		
1,4-dichlorobenzene	ug/L	MW-702B	01/09/2023	ND	0.2300		
Antimony	ug/L	MW-702B	11/19/2021	ND	1.1000	0.6900	**
Antimony	ug/L	MW-702B	05/02/2022	ND	0.6900		
Antimony	ug/L	MW-702B	07/27/2022	ND	0.6900		
Antimony	ug/L	MW-702B	10/11/2022	ND	0.6900		
Antimony	ug/L	MW-702B	01/09/2023	ND	0.6900		
Arsenic	ug/L	MW-702B	11/19/2021	ND	0.7500		
Arsenic	ug/L	MW-702B	05/02/2022	ND	0.7500		
Arsenic	ug/L	MW-702B	07/27/2022	ND	0.7500		
Arsenic	ug/L	MW-702B	10/11/2022	ND	0.7500		
Arsenic	ug/L	MW-702B	01/09/2023	ND	0.7500		
Barium	ug/L	MW-702B	11/19/2021		304.0000		
Barium	ug/L	MW-702B	05/02/2022		114.0000		
Barium	ug/L	MW-702B	07/27/2022		174.0000		
Barium	ug/L	MW-702B	10/11/2022		179.0000		

* - Outlier for that well and constituent.
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*** - ND value replaced with manual RL.
ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Barium	ug/L	MW-702B	01/09/2023		287.0000		
Benzene	ug/L	MW-702B	11/19/2021	ND	0.2200		
Benzene	ug/L	MW-702B	05/02/2022	ND	0.2200		
Benzene	ug/L	MW-702B	07/27/2022	ND	0.2200		
Benzene	ug/L	MW-702B	10/11/2022	ND	0.2200		
Benzene	ug/L	MW-702B	01/09/2023	ND	0.2200		
Beryllium	ug/L	MW-702B	11/19/2021	ND	0.2700		
Beryllium	ug/L	MW-702B	05/02/2022	ND	0.2700		
Beryllium	ug/L	MW-702B	07/27/2022	ND	0.2700		
Beryllium	ug/L	MW-702B	10/11/2022	ND	0.2700		
Beryllium	ug/L	MW-702B	01/09/2023	ND	0.2700		
Cadmium	ug/L	MW-702B	11/19/2021	ND	0.0510	0.0550	**
Cadmium	ug/L	MW-702B	05/02/2022	ND	0.0550		
Cadmium	ug/L	MW-702B	07/27/2022	ND	0.0550		
Cadmium	ug/L	MW-702B	10/11/2022	ND	0.0550		
Cadmium	ug/L	MW-702B	01/09/2023	ND	0.0550		
Chromium	ug/L	MW-702B	11/19/2021	ND	1.1000		
Chromium	ug/L	MW-702B	05/02/2022	ND	1.1000		
Chromium	ug/L	MW-702B	07/27/2022	ND	1.1000		
Chromium	ug/L	MW-702B	10/11/2022	ND	1.1000		
Chromium	ug/L	MW-702B	01/09/2023	ND	1.1000		
Cis-1,2-dichloroethylene	ug/L	MW-702B	11/19/2021	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	MW-702B	05/02/2022	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	MW-702B	07/27/2022	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	MW-702B	10/11/2022	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	MW-702B	01/09/2023	ND	0.2100		
Cobalt	ug/L	MW-702B	11/19/2021	ND	0.1900		
Cobalt	ug/L	MW-702B	05/02/2022	ND	0.1900		
Cobalt	ug/L	MW-702B	07/27/2022	ND	0.1900		
Cobalt	ug/L	MW-702B	10/11/2022	ND	0.1900		
Cobalt	ug/L	MW-702B	01/09/2023	ND	0.1900		
Copper	ug/L	MW-702B	11/19/2021	ND	1.4000	1.8000	**
Copper	ug/L	MW-702B	05/02/2022	ND	1.8000		
Copper	ug/L	MW-702B	07/27/2022	ND	1.8000		
Copper	ug/L	MW-702B	10/11/2022	ND	1.8000		
Copper	ug/L	MW-702B	01/09/2023	ND	1.8000		
Lead	ug/L	MW-702B	11/19/2021	ND	0.2100	0.2400	**
Lead	ug/L	MW-702B	05/02/2022	ND	0.2400		
Lead	ug/L	MW-702B	07/27/2022	ND	0.2400		
Lead	ug/L	MW-702B	10/11/2022	ND	0.2400		
Lead	ug/L	MW-702B	01/09/2023	ND	0.2400		
Nickel	ug/L	MW-702B	11/19/2021	ND	1.9000		
Nickel	ug/L	MW-702B	05/02/2022	ND	1.9000		
Nickel	ug/L	MW-702B	07/27/2022	ND	1.9000		
Nickel	ug/L	MW-702B	10/11/2022	ND	1.9000		
Nickel	ug/L	MW-702B	01/09/2023	ND	1.9000		
Selenium	ug/L	MW-702B	11/19/2021	ND	0.9600		
Selenium	ug/L	MW-702B	05/02/2022	ND	0.9600		
Selenium	ug/L	MW-702B	07/27/2022	ND	0.9600		
Selenium	ug/L	MW-702B	10/11/2022	ND	0.9600		
Selenium	ug/L	MW-702B	01/09/2023	ND	0.9600		
Silver	ug/L	MW-702B	11/19/2021	ND	0.4200	0.3700	**
Silver	ug/L	MW-702B	05/02/2022	ND	0.4900	0.3700	**
Silver	ug/L	MW-702B	07/27/2022	ND	0.4900	0.3700	**
Silver	ug/L	MW-702B	10/11/2022	ND	0.4900	0.3700	**
Silver	ug/L	MW-702B	01/09/2023	ND	0.4900	0.3700	**
Thallium	ug/L	MW-702B	11/19/2021	ND	0.2600		
Thallium	ug/L	MW-702B	05/02/2022	ND	0.2600		
Thallium	ug/L	MW-702B	07/27/2022	ND	0.2600		
Thallium	ug/L	MW-702B	10/11/2022	ND	0.2600		
Thallium	ug/L	MW-702B	01/09/2023	ND	0.2600		
Vanadium	ug/L	MW-702B	11/19/2021	ND	1.1000		
Vanadium	ug/L	MW-702B	05/02/2022	ND	1.1000		

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** - ND value replaced with median RL.
*** - ND value replaced with manual RL.
ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Vanadium	ug/L	MW-702B	07/27/2022	ND	1.1000		
Vanadium	ug/L	MW-702B	10/11/2022	ND	1.1000		
Vanadium	ug/L	MW-702B	01/09/2023	ND	1.1000		
Vinyl chloride	ug/L	MW-702B	11/19/2021	ND	0.1800		
Vinyl chloride	ug/L	MW-702B	05/02/2022	ND	0.1800		
Vinyl chloride	ug/L	MW-702B	07/27/2022	ND	0.1800		
Vinyl chloride	ug/L	MW-702B	10/11/2022	ND	0.1800		
Vinyl chloride	ug/L	MW-702B	01/09/2023	ND	0.1800		
Zinc	ug/L	MW-702B	11/19/2021	ND	10.0000		
Zinc	ug/L	MW-702B	05/02/2022	ND	10.0000		
Zinc	ug/L	MW-702B	07/27/2022	ND	10.0000		
Zinc	ug/L	MW-702B	10/11/2022	ND	10.0000		
Zinc	ug/L	MW-702B	01/09/2023	ND	10.0000		
1,4-dichlorobenzene	ug/L	MW-703B	11/19/2021	ND	0.2300		
1,4-dichlorobenzene	ug/L	MW-703B	05/02/2022	ND	0.2300		
1,4-dichlorobenzene	ug/L	MW-703B	07/20/2022	ND	0.2300		
1,4-dichlorobenzene	ug/L	MW-703B	10/20/2022	ND	0.2300		
1,4-dichlorobenzene	ug/L	MW-703B	01/09/2023	ND	0.2300		
Antimony	ug/L	MW-703B	11/19/2021	ND	1.1000	0.6900	**
Antimony	ug/L	MW-703B	05/02/2022	ND	0.6900		
Antimony	ug/L	MW-703B	07/20/2022	ND	0.6900		
Antimony	ug/L	MW-703B	10/20/2022	ND	0.6900		
Antimony	ug/L	MW-703B	01/09/2023	ND	0.6900		
Arsenic	ug/L	MW-703B	11/19/2021	ND	0.7500		
Arsenic	ug/L	MW-703B	05/02/2022	ND	0.7500		
Arsenic	ug/L	MW-703B	07/20/2022	ND	0.7500		
Arsenic	ug/L	MW-703B	10/20/2022	ND	0.7500		
Arsenic	ug/L	MW-703B	01/09/2023	ND	0.7500		
Barium	ug/L	MW-703B	11/19/2021		280.0000		
Barium	ug/L	MW-703B	05/02/2022		189.0000		
Barium	ug/L	MW-703B	07/20/2022		209.0000		
Barium	ug/L	MW-703B	10/20/2022		158.0000		
Barium	ug/L	MW-703B	01/09/2023		248.0000		
Benzene	ug/L	MW-703B	11/19/2021	ND	0.2200		
Benzene	ug/L	MW-703B	05/02/2022	ND	0.2200		
Benzene	ug/L	MW-703B	07/20/2022	ND	0.2200		
Benzene	ug/L	MW-703B	10/20/2022	ND	0.2200		
Benzene	ug/L	MW-703B	01/09/2023	ND	0.2200		
Beryllium	ug/L	MW-703B	11/19/2021	ND	0.2700		
Beryllium	ug/L	MW-703B	05/02/2022	ND	0.2700		
Beryllium	ug/L	MW-703B	07/20/2022	ND	0.2700		
Beryllium	ug/L	MW-703B	10/20/2022	ND	0.2700		
Beryllium	ug/L	MW-703B	01/09/2023	ND	0.2700		
Cadmium	ug/L	MW-703B	11/19/2021	ND	0.0510	0.0550	**
Cadmium	ug/L	MW-703B	05/02/2022	ND	0.0550		
Cadmium	ug/L	MW-703B	07/20/2022	ND	0.0550		
Cadmium	ug/L	MW-703B	10/20/2022	ND	0.0550		
Cadmium	ug/L	MW-703B	01/09/2023	ND	0.0550		
Chromium	ug/L	MW-703B	11/19/2021	ND	1.1000		
Chromium	ug/L	MW-703B	05/02/2022	ND	1.1000		
Chromium	ug/L	MW-703B	07/20/2022	ND	1.1000		
Chromium	ug/L	MW-703B	10/20/2022	ND	1.1000		
Chromium	ug/L	MW-703B	01/09/2023	ND	1.1000		
Cis-1,2-dichloroethylene	ug/L	MW-703B	11/19/2021	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	MW-703B	05/02/2022	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	MW-703B	07/20/2022	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	MW-703B	10/20/2022	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	MW-703B	01/09/2023	ND	0.2100		
Cobalt	ug/L	MW-703B	11/19/2021	ND	0.1900		
Cobalt	ug/L	MW-703B	05/02/2022	ND	0.1900		
Cobalt	ug/L	MW-703B	07/20/2022	ND	0.1900		
Cobalt	ug/L	MW-703B	10/20/2022	ND	0.1900		
Cobalt	ug/L	MW-703B	01/09/2023	ND	0.1900		

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*** - ND value replaced with manual RL.
ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Copper	ug/L	MW-703B	11/19/2021	ND	1.4000	1.8000	**
Copper	ug/L	MW-703B	05/02/2022	ND	1.8000		
Copper	ug/L	MW-703B	07/20/2022	ND	1.8000		
Copper	ug/L	MW-703B	10/20/2022	ND	1.8000		
Copper	ug/L	MW-703B	01/09/2023	ND	1.8000		
Lead	ug/L	MW-703B	11/19/2021	ND	0.2100	0.2400	**
Lead	ug/L	MW-703B	05/02/2022	ND	0.2400		
Lead	ug/L	MW-703B	07/20/2022	ND	0.2400		
Lead	ug/L	MW-703B	10/20/2022	ND	0.2400		
Lead	ug/L	MW-703B	01/09/2023	ND	0.2400		
Nickel	ug/L	MW-703B	11/19/2021	ND	1.9000		
Nickel	ug/L	MW-703B	05/02/2022	ND	1.9000		
Nickel	ug/L	MW-703B	07/20/2022	ND	1.9000		
Nickel	ug/L	MW-703B	10/20/2022	ND	1.9000		
Nickel	ug/L	MW-703B	01/09/2023	ND	1.9000		
Selenium	ug/L	MW-703B	11/19/2021	ND	0.9600		
Selenium	ug/L	MW-703B	05/02/2022	ND	0.9600		
Selenium	ug/L	MW-703B	07/20/2022	ND	0.9600		
Selenium	ug/L	MW-703B	10/20/2022	ND	0.9600		
Selenium	ug/L	MW-703B	01/09/2023	ND	0.9600		
Silver	ug/L	MW-703B	11/19/2021	ND	0.4200	0.3700	**
Silver	ug/L	MW-703B	05/02/2022	ND	0.4900	0.3700	**
Silver	ug/L	MW-703B	07/20/2022	ND	0.4900	0.3700	**
Silver	ug/L	MW-703B	10/20/2022	ND	0.4900	0.3700	**
Silver	ug/L	MW-703B	01/09/2023	ND	0.4900	0.3700	**
Thallium	ug/L	MW-703B	11/19/2021	ND	0.2600		
Thallium	ug/L	MW-703B	05/02/2022	ND	0.2600		
Thallium	ug/L	MW-703B	07/20/2022	ND	0.2600		
Thallium	ug/L	MW-703B	10/20/2022	ND	0.2600		
Thallium	ug/L	MW-703B	01/09/2023	ND	0.2600		
Vanadium	ug/L	MW-703B	11/19/2021	ND	1.1000		
Vanadium	ug/L	MW-703B	05/02/2022	ND	1.1000		
Vanadium	ug/L	MW-703B	07/20/2022	ND	1.1000		
Vanadium	ug/L	MW-703B	10/20/2022	ND	1.1000		
Vanadium	ug/L	MW-703B	01/09/2023	ND	1.1000		
Vinyl chloride	ug/L	MW-703B	11/19/2021	ND	0.1800		
Vinyl chloride	ug/L	MW-703B	05/02/2022	ND	0.1800		
Vinyl chloride	ug/L	MW-703B	07/20/2022	ND	0.1800		
Vinyl chloride	ug/L	MW-703B	10/20/2022	ND	0.1800		
Vinyl chloride	ug/L	MW-703B	01/09/2023	ND	0.1800		
Zinc	ug/L	MW-703B	11/19/2021	ND	10.0000		
Zinc	ug/L	MW-703B	05/02/2022	ND	10.0000		
Zinc	ug/L	MW-703B	07/20/2022	ND	10.0000		
Zinc	ug/L	MW-703B	10/20/2022	ND	10.0000		
Zinc	ug/L	MW-703B	01/09/2023	ND	10.0000		
1,4-dichlorobenzene	ug/L	MW-704B	10/29/2021	ND	0.2300		
1,4-dichlorobenzene	ug/L	MW-704B	04/28/2022	ND	0.2300		
1,4-dichlorobenzene	ug/L	MW-704B	07/18/2022	ND	0.2300		
1,4-dichlorobenzene	ug/L	MW-704B	10/11/2022	ND	0.2300		
1,4-dichlorobenzene	ug/L	MW-704B	12/14/2022	ND	0.2300		
Antimony	ug/L	MW-704B	10/29/2021	ND	1.1000	0.6900	**
Antimony	ug/L	MW-704B	04/28/2022	ND	2.7600	0.6900	**
Antimony	ug/L	MW-704B	07/18/2022	ND	0.6900		
Antimony	ug/L	MW-704B	10/11/2022	ND	0.6900		
Antimony	ug/L	MW-704B	12/14/2022	ND	0.6900		
Arsenic	ug/L	MW-704B	10/29/2021	ND	0.7500		
Arsenic	ug/L	MW-704B	04/28/2022	ND	3.0000		*
Arsenic	ug/L	MW-704B	07/18/2022	ND	0.7500		
Arsenic	ug/L	MW-704B	10/11/2022	ND	0.7500		
Arsenic	ug/L	MW-704B	12/14/2022	ND	0.7500		
Barium	ug/L	MW-704B	10/29/2021		69.5000		
Barium	ug/L	MW-704B	04/28/2022		36.7000		
Barium	ug/L	MW-704B	07/18/2022		34.6000		

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*** - ND value replaced with manual RL.
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Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Barium	ug/L	MW-704B	10/11/2022		33.7000		
Barium	ug/L	MW-704B	12/14/2022		35.0000		
Benzene	ug/L	MW-704B	10/29/2021	ND	0.2200		
Benzene	ug/L	MW-704B	04/28/2022	ND	0.2200		
Benzene	ug/L	MW-704B	07/18/2022	ND	0.2200		
Benzene	ug/L	MW-704B	10/11/2022	ND	0.2200		
Benzene	ug/L	MW-704B	12/14/2022	ND	0.2200		
Beryllium	ug/L	MW-704B	10/29/2021	ND	0.2700		
Beryllium	ug/L	MW-704B	04/28/2022	ND	1.0800		*
Beryllium	ug/L	MW-704B	07/18/2022	ND	0.2700		
Beryllium	ug/L	MW-704B	10/11/2022	ND	0.2700		
Beryllium	ug/L	MW-704B	12/14/2022	ND	0.2700		
Cadmium	ug/L	MW-704B	10/29/2021	ND	0.0510	0.0550	**
Cadmium	ug/L	MW-704B	04/28/2022	ND	0.2200	0.0550	**
Cadmium	ug/L	MW-704B	07/18/2022		0.1740		
Cadmium	ug/L	MW-704B	10/11/2022		0.1250		
Cadmium	ug/L	MW-704B	12/14/2022		0.1410		
Chromium	ug/L	MW-704B	10/29/2021	ND	1.1000		
Chromium	ug/L	MW-704B	04/28/2022	ND	4.4000		*
Chromium	ug/L	MW-704B	07/18/2022	ND	1.1000		
Chromium	ug/L	MW-704B	10/11/2022	ND	1.1000		
Chromium	ug/L	MW-704B	12/14/2022	ND	1.1000		
Cis-1,2-dichloroethylene	ug/L	MW-704B	10/29/2021	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	MW-704B	04/28/2022	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	MW-704B	07/18/2022	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	MW-704B	10/11/2022	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	MW-704B	12/14/2022	ND	0.2100		
Cobalt	ug/L	MW-704B	10/29/2021	ND	0.1900		
Cobalt	ug/L	MW-704B	04/28/2022	ND	0.7600	0.1900	**
Cobalt	ug/L	MW-704B	07/18/2022		1.5200		
Cobalt	ug/L	MW-704B	10/11/2022		0.8560		
Cobalt	ug/L	MW-704B	12/14/2022		0.7130		
Copper	ug/L	MW-704B	10/29/2021	ND	1.4000	1.8000	**
Copper	ug/L	MW-704B	04/28/2022	ND	7.2000		*
Copper	ug/L	MW-704B	07/18/2022	ND	1.8000		
Copper	ug/L	MW-704B	10/11/2022	ND	1.8000		
Copper	ug/L	MW-704B	12/14/2022	ND	1.8000		
Lead	ug/L	MW-704B	10/29/2021	ND	0.2100	0.2400	**
Lead	ug/L	MW-704B	04/28/2022	ND	0.9600		*
Lead	ug/L	MW-704B	07/18/2022	ND	0.2400		
Lead	ug/L	MW-704B	10/11/2022	ND	0.2400		
Lead	ug/L	MW-704B	12/14/2022	ND	0.2400		
Nickel	ug/L	MW-704B	10/29/2021	ND	1.9000		
Nickel	ug/L	MW-704B	04/28/2022	ND	7.6000	1.9000	**
Nickel	ug/L	MW-704B	07/18/2022		6.0000		
Nickel	ug/L	MW-704B	10/11/2022		5.4700		
Nickel	ug/L	MW-704B	12/14/2022		5.2600		
Selenium	ug/L	MW-704B	10/29/2021	ND	0.9600		
Selenium	ug/L	MW-704B	04/28/2022	ND	3.8400		*
Selenium	ug/L	MW-704B	07/18/2022	ND	0.9600		
Selenium	ug/L	MW-704B	10/11/2022	ND	0.9600		
Selenium	ug/L	MW-704B	12/14/2022	ND	0.9600		
Silver	ug/L	MW-704B	10/29/2021	ND	0.4200	0.3700	**
Silver	ug/L	MW-704B	04/28/2022		4.6700		*
Silver	ug/L	MW-704B	07/18/2022	ND	0.4900	0.3700	**
Silver	ug/L	MW-704B	10/11/2022	ND	0.4900	0.3700	**
Silver	ug/L	MW-704B	12/14/2022	ND	0.4900	0.3700	**
Thallium	ug/L	MW-704B	10/29/2021	ND	0.2600		
Thallium	ug/L	MW-704B	04/28/2022	ND	1.0400		*
Thallium	ug/L	MW-704B	07/18/2022	ND	0.2600		
Thallium	ug/L	MW-704B	10/11/2022	ND	0.2600		
Thallium	ug/L	MW-704B	12/14/2022	ND	0.2600		
Vanadium	ug/L	MW-704B	10/29/2021	ND	1.1000		

* - Outlier for that well and constituent.
** - ND value replaced with median RL.
*** - ND value replaced with manual RL.
ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Vanadium	ug/L	MW-704B	04/28/2022	ND	4.4000		*
Vanadium	ug/L	MW-704B	07/18/2022	ND	1.1000		
Vanadium	ug/L	MW-704B	10/11/2022	ND	1.1000		
Vanadium	ug/L	MW-704B	12/14/2022	ND	1.1000		
Vinyl chloride	ug/L	MW-704B	10/29/2021	ND	0.1800		
Vinyl chloride	ug/L	MW-704B	04/28/2022	ND	0.1800		
Vinyl chloride	ug/L	MW-704B	07/18/2022	ND	0.1800		
Vinyl chloride	ug/L	MW-704B	10/11/2022	ND	0.1800		
Vinyl chloride	ug/L	MW-704B	12/14/2022	ND	0.1800		
Zinc	ug/L	MW-704B	10/29/2021	ND	10.0000		
Zinc	ug/L	MW-704B	04/28/2022	ND	40.0000		*
Zinc	ug/L	MW-704B	07/18/2022	ND	10.0000		
Zinc	ug/L	MW-704B	10/11/2022	ND	10.0000		
Zinc	ug/L	MW-704B	12/14/2022	ND	10.0000		
1,4-dichlorobenzene	ug/L	MW-705B	10/29/2021	ND	0.2300		
1,4-dichlorobenzene	ug/L	MW-705B	04/28/2022	ND	0.2300		
1,4-dichlorobenzene	ug/L	MW-705B	07/18/2022	ND	0.2300		
1,4-dichlorobenzene	ug/L	MW-705B	10/11/2022	ND	0.2300		
1,4-dichlorobenzene	ug/L	MW-705B	12/14/2022	ND	0.2300		
Antimony	ug/L	MW-705B	10/29/2021	ND	1.1000	0.6900	**
Antimony	ug/L	MW-705B	04/28/2022	ND	0.6900		
Antimony	ug/L	MW-705B	07/18/2022	ND	0.6900		
Antimony	ug/L	MW-705B	10/11/2022	ND	0.6900		
Antimony	ug/L	MW-705B	12/14/2022	ND	0.6900		
Arsenic	ug/L	MW-705B	10/29/2021	ND	0.7500		
Arsenic	ug/L	MW-705B	04/28/2022	ND	0.7500		
Arsenic	ug/L	MW-705B	07/18/2022	ND	0.7500		
Arsenic	ug/L	MW-705B	10/11/2022	ND	0.7500		
Arsenic	ug/L	MW-705B	12/14/2022	ND	0.7500		
Barium	ug/L	MW-705B	10/29/2021		130.0000		
Barium	ug/L	MW-705B	04/28/2022		342.0000		
Barium	ug/L	MW-705B	07/18/2022		335.0000		
Barium	ug/L	MW-705B	10/11/2022		301.0000		
Barium	ug/L	MW-705B	12/14/2022		306.0000		
Benzene	ug/L	MW-705B	10/29/2021	ND	0.2200		
Benzene	ug/L	MW-705B	04/28/2022	ND	0.2200		
Benzene	ug/L	MW-705B	07/18/2022	ND	0.2200		
Benzene	ug/L	MW-705B	10/11/2022	ND	0.2200		
Benzene	ug/L	MW-705B	12/14/2022	ND	0.2200		
Beryllium	ug/L	MW-705B	10/29/2021	ND	0.2700		
Beryllium	ug/L	MW-705B	04/28/2022	ND	0.2700		
Beryllium	ug/L	MW-705B	07/18/2022	ND	0.2700		
Beryllium	ug/L	MW-705B	10/11/2022	ND	0.2700		
Beryllium	ug/L	MW-705B	12/14/2022	ND	0.2700		
Cadmium	ug/L	MW-705B	10/29/2021		0.1240		
Cadmium	ug/L	MW-705B	04/28/2022	ND	0.0550		
Cadmium	ug/L	MW-705B	07/18/2022	ND	0.0550		
Cadmium	ug/L	MW-705B	10/11/2022	ND	0.0550		
Cadmium	ug/L	MW-705B	12/14/2022	ND	0.0550		
Chromium	ug/L	MW-705B	10/29/2021	ND	1.1000		
Chromium	ug/L	MW-705B	04/28/2022	ND	1.1000		
Chromium	ug/L	MW-705B	07/18/2022	ND	1.1000		
Chromium	ug/L	MW-705B	10/11/2022	ND	1.1000		
Chromium	ug/L	MW-705B	12/14/2022	ND	1.1000		
Cis-1,2-dichloroethylene	ug/L	MW-705B	10/29/2021	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	MW-705B	04/28/2022	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	MW-705B	07/18/2022	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	MW-705B	10/11/2022	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	MW-705B	12/14/2022	ND	0.2100		
Cobalt	ug/L	MW-705B	10/29/2021		0.8430		*
Cobalt	ug/L	MW-705B	04/28/2022	ND	0.1900		
Cobalt	ug/L	MW-705B	07/18/2022	ND	0.1900		
Cobalt	ug/L	MW-705B	10/11/2022	ND	0.1900		

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*** - ND value replaced with manual RL.
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Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Cobalt	ug/L	MW-705B	12/14/2022	ND	0.1900		
Copper	ug/L	MW-705B	10/29/2021	ND	1.4000	1.8000	**
Copper	ug/L	MW-705B	04/28/2022	ND	1.8000		
Copper	ug/L	MW-705B	07/18/2022	ND	1.8000		
Copper	ug/L	MW-705B	10/11/2022	ND	1.8000		
Copper	ug/L	MW-705B	12/14/2022	ND	1.8000		
Lead	ug/L	MW-705B	10/29/2021	ND	0.2100	0.2400	**
Lead	ug/L	MW-705B	04/28/2022	ND	0.2400		
Lead	ug/L	MW-705B	07/18/2022	ND	0.2400		
Lead	ug/L	MW-705B	10/11/2022	ND	0.2400		
Lead	ug/L	MW-705B	12/14/2022	ND	0.2400		
Nickel	ug/L	MW-705B	10/29/2021	ND	1.9000		
Nickel	ug/L	MW-705B	04/28/2022	ND	1.9000		
Nickel	ug/L	MW-705B	07/18/2022	ND	1.9000		
Nickel	ug/L	MW-705B	10/11/2022	ND	1.9000		
Nickel	ug/L	MW-705B	12/14/2022	ND	1.9000		
Selenium	ug/L	MW-705B	10/29/2021	ND	0.9600		
Selenium	ug/L	MW-705B	04/28/2022	ND	0.9600		
Selenium	ug/L	MW-705B	07/18/2022	ND	0.9600		
Selenium	ug/L	MW-705B	10/11/2022	ND	0.9600		
Selenium	ug/L	MW-705B	12/14/2022	ND	0.9600		
Silver	ug/L	MW-705B	10/29/2021	ND	0.4200	0.3700	**
Silver	ug/L	MW-705B	04/28/2022	ND	0.4900	0.3700	**
Silver	ug/L	MW-705B	07/18/2022	ND	0.4900	0.3700	**
Silver	ug/L	MW-705B	10/11/2022	ND	0.4900	0.3700	**
Silver	ug/L	MW-705B	12/14/2022	ND	0.4900	0.3700	**
Thallium	ug/L	MW-705B	10/29/2021	ND	0.2600		
Thallium	ug/L	MW-705B	04/28/2022	ND	0.2600		
Thallium	ug/L	MW-705B	07/18/2022	ND	0.2600		
Thallium	ug/L	MW-705B	10/11/2022	ND	0.2600		
Thallium	ug/L	MW-705B	12/14/2022	ND	0.2600		
Vanadium	ug/L	MW-705B	10/29/2021	ND	1.1000		
Vanadium	ug/L	MW-705B	04/28/2022	ND	1.1000		
Vanadium	ug/L	MW-705B	07/18/2022	ND	1.1000		
Vanadium	ug/L	MW-705B	10/11/2022	ND	1.1000		
Vanadium	ug/L	MW-705B	12/14/2022	ND	1.1000		
Vinyl chloride	ug/L	MW-705B	10/29/2021	ND	0.1800		
Vinyl chloride	ug/L	MW-705B	04/28/2022	ND	0.1800		
Vinyl chloride	ug/L	MW-705B	07/18/2022	ND	0.1800		
Vinyl chloride	ug/L	MW-705B	10/11/2022	ND	0.1800		
Vinyl chloride	ug/L	MW-705B	12/14/2022	ND	0.1800		
Zinc	ug/L	MW-705B	10/29/2021	ND	10.0000		
Zinc	ug/L	MW-705B	04/28/2022	ND	10.0000		
Zinc	ug/L	MW-705B	07/18/2022	ND	10.0000		
Zinc	ug/L	MW-705B	10/11/2022	ND	10.0000		
Zinc	ug/L	MW-705B	12/14/2022	ND	10.0000		
1,4-dichlorobenzene	ug/L	MW-706B	10/29/2021	ND	0.2300		
1,4-dichlorobenzene	ug/L	MW-706B	05/02/2022	ND	0.2300		
1,4-dichlorobenzene	ug/L	MW-706B	07/20/2022	ND	0.2300		
1,4-dichlorobenzene	ug/L	MW-706B	10/19/2022	ND	0.2300		
1,4-dichlorobenzene	ug/L	MW-706B	02/07/2023	ND	0.2300		
Antimony	ug/L	MW-706B	10/29/2021	ND	1.1000	0.6900	**
Antimony	ug/L	MW-706B	05/02/2022	ND	0.6900		
Antimony	ug/L	MW-706B	07/20/2022	ND	0.6900		
Antimony	ug/L	MW-706B	10/19/2022	ND	0.6900		
Antimony	ug/L	MW-706B	02/07/2023	ND	0.6900		
Arsenic	ug/L	MW-706B	10/29/2021	ND	0.7500		
Arsenic	ug/L	MW-706B	05/02/2022	ND	0.7500		
Arsenic	ug/L	MW-706B	07/20/2022	ND	0.7500		
Arsenic	ug/L	MW-706B	10/19/2022		13.8000		*
Arsenic	ug/L	MW-706B	02/07/2023	ND	0.7500		
Barium	ug/L	MW-706B	10/29/2021		311.0000		
Barium	ug/L	MW-706B	05/02/2022		48.7000		

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Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Barium	ug/L	MW-706B	07/20/2022		55.9000		
Barium	ug/L	MW-706B	10/19/2022		95.8000		
Barium	ug/L	MW-706B	02/07/2023		38.1000		
Benzene	ug/L	MW-706B	10/29/2021	ND	0.2200		
Benzene	ug/L	MW-706B	05/02/2022	ND	0.2200		
Benzene	ug/L	MW-706B	07/20/2022	ND	0.2200		
Benzene	ug/L	MW-706B	10/19/2022	ND	0.2200		
Benzene	ug/L	MW-706B	02/07/2023	ND	0.2200		
Beryllium	ug/L	MW-706B	10/29/2021	ND	0.2700		
Beryllium	ug/L	MW-706B	05/02/2022	ND	0.2700		
Beryllium	ug/L	MW-706B	07/20/2022	ND	0.2700		
Beryllium	ug/L	MW-706B	10/19/2022		12.9000		*
Beryllium	ug/L	MW-706B	02/07/2023	ND	0.2700		
Cadmium	ug/L	MW-706B	10/29/2021	ND	0.0510	0.0550	**
Cadmium	ug/L	MW-706B	05/02/2022	ND	0.0550		
Cadmium	ug/L	MW-706B	07/20/2022		0.1700		
Cadmium	ug/L	MW-706B	10/19/2022		12.2000		
Cadmium	ug/L	MW-706B	02/07/2023		0.1630		
Chromium	ug/L	MW-706B	10/29/2021	ND	1.1000		
Chromium	ug/L	MW-706B	05/02/2022	ND	1.1000		
Chromium	ug/L	MW-706B	07/20/2022	ND	1.1000		
Chromium	ug/L	MW-706B	10/19/2022		67.4000		*
Chromium	ug/L	MW-706B	02/07/2023	ND	1.1000		
Cis-1,2-dichloroethylene	ug/L	MW-706B	10/29/2021	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	MW-706B	05/02/2022	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	MW-706B	07/20/2022	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	MW-706B	10/19/2022	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	MW-706B	02/07/2023	ND	0.2100		
Cobalt	ug/L	MW-706B	10/29/2021	ND	0.1900		*
Cobalt	ug/L	MW-706B	05/02/2022		6.4600		
Cobalt	ug/L	MW-706B	07/20/2022		6.6500		
Cobalt	ug/L	MW-706B	10/19/2022		9.5800		
Cobalt	ug/L	MW-706B	02/07/2023		4.8700		
Copper	ug/L	MW-706B	10/29/2021	ND	1.4000	1.8000	**
Copper	ug/L	MW-706B	05/02/2022	ND	1.8000		
Copper	ug/L	MW-706B	07/20/2022	ND	1.8000		
Copper	ug/L	MW-706B	10/19/2022		24.0000		*
Copper	ug/L	MW-706B	02/07/2023	ND	1.8000		
Lead	ug/L	MW-706B	10/29/2021	ND	0.2100	0.2400	**
Lead	ug/L	MW-706B	05/02/2022	ND	0.2400		
Lead	ug/L	MW-706B	07/20/2022	ND	0.2400		
Lead	ug/L	MW-706B	10/19/2022		3.0900		*
Lead	ug/L	MW-706B	02/07/2023	ND	0.2400		
Nickel	ug/L	MW-706B	10/29/2021	ND	1.9000		
Nickel	ug/L	MW-706B	05/02/2022		13.6000		
Nickel	ug/L	MW-706B	07/20/2022		13.9000		
Nickel	ug/L	MW-706B	10/19/2022		484.0000		
Nickel	ug/L	MW-706B	02/07/2023		10.4000		
Selenium	ug/L	MW-706B	10/29/2021	ND	0.9600		
Selenium	ug/L	MW-706B	05/02/2022	ND	0.9600		
Selenium	ug/L	MW-706B	07/20/2022	ND	0.9600		
Selenium	ug/L	MW-706B	10/19/2022		22.9000		*
Selenium	ug/L	MW-706B	02/07/2023	ND	0.9600		
Silver	ug/L	MW-706B	10/29/2021	ND	0.4200	0.3700	**
Silver	ug/L	MW-706B	05/02/2022	ND	0.4900	0.3700	**
Silver	ug/L	MW-706B	07/20/2022	ND	0.4900	0.3700	**
Silver	ug/L	MW-706B	10/19/2022	ND	0.4900	0.3700	**
Silver	ug/L	MW-706B	02/07/2023	ND	0.4900	0.3700	**
Thallium	ug/L	MW-706B	10/29/2021	ND	0.2600		
Thallium	ug/L	MW-706B	05/02/2022	ND	0.2600		
Thallium	ug/L	MW-706B	07/20/2022	ND	0.2600		
Thallium	ug/L	MW-706B	10/19/2022	ND	0.2600		
Thallium	ug/L	MW-706B	02/07/2023	ND	0.2600		

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** - ND value replaced with median RL.
*** - ND value replaced with manual RL.
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Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Vanadium	ug/L	MW-706B	10/29/2021	ND	1.1000		
Vanadium	ug/L	MW-706B	05/02/2022	ND	1.1000		
Vanadium	ug/L	MW-706B	07/20/2022	ND	1.1000		
Vanadium	ug/L	MW-706B	10/19/2022		6.8600		*
Vanadium	ug/L	MW-706B	02/07/2023	ND	1.1000		
Vinyl chloride	ug/L	MW-706B	10/29/2021	ND	0.1800		
Vinyl chloride	ug/L	MW-706B	05/02/2022	ND	0.1800		
Vinyl chloride	ug/L	MW-706B	07/20/2022	ND	0.1800		
Vinyl chloride	ug/L	MW-706B	10/19/2022	ND	0.1800		
Vinyl chloride	ug/L	MW-706B	02/07/2023	ND	0.1800		
Zinc	ug/L	MW-706B	10/29/2021	ND	10.0000		
Zinc	ug/L	MW-706B	05/02/2022	ND	10.0000		
Zinc	ug/L	MW-706B	07/20/2022	ND	10.0000		
Zinc	ug/L	MW-706B	10/19/2022		186.0000		*
Zinc	ug/L	MW-706B	02/07/2023	ND	10.0000		
1,4-dichlorobenzene	ug/L	MW-707B	11/16/2021	ND	0.2300		
1,4-dichlorobenzene	ug/L	MW-707B	05/02/2022	ND	0.2300		
1,4-dichlorobenzene	ug/L	MW-707B	07/26/2022	ND	0.2300		
1,4-dichlorobenzene	ug/L	MW-707B	10/19/2022	ND	0.2300		
1,4-dichlorobenzene	ug/L	MW-707B	02/08/2023	ND	0.2300		
Antimony	ug/L	MW-707B	11/16/2021	ND	1.1000	0.6900	**
Antimony	ug/L	MW-707B	05/02/2022	ND	0.6900		
Antimony	ug/L	MW-707B	07/26/2022	ND	0.6900		
Antimony	ug/L	MW-707B	10/19/2022	ND	0.6900		
Antimony	ug/L	MW-707B	02/08/2023	ND	0.6900		
Arsenic	ug/L	MW-707B	11/16/2021	ND	0.7500		
Arsenic	ug/L	MW-707B	05/02/2022	ND	0.7500		
Arsenic	ug/L	MW-707B	07/26/2022	ND	0.7500		
Arsenic	ug/L	MW-707B	10/19/2022		7.7400		*
Arsenic	ug/L	MW-707B	02/08/2023	ND	0.7500		
Barium	ug/L	MW-707B	11/16/2021		162.0000		
Barium	ug/L	MW-707B	05/02/2022		108.0000		
Barium	ug/L	MW-707B	07/26/2022		123.0000		
Barium	ug/L	MW-707B	10/19/2022		130.0000		
Barium	ug/L	MW-707B	02/08/2023		115.0000		
Benzene	ug/L	MW-707B	11/16/2021	ND	0.2200		
Benzene	ug/L	MW-707B	05/02/2022	ND	0.2200		
Benzene	ug/L	MW-707B	07/26/2022	ND	0.2200		
Benzene	ug/L	MW-707B	10/19/2022	ND	0.2200		
Benzene	ug/L	MW-707B	02/08/2023	ND	0.2200		
Beryllium	ug/L	MW-707B	11/16/2021	ND	0.2700		
Beryllium	ug/L	MW-707B	05/02/2022	ND	0.2700		
Beryllium	ug/L	MW-707B	07/26/2022	ND	0.2700		
Beryllium	ug/L	MW-707B	10/19/2022		5.4800		*
Beryllium	ug/L	MW-707B	02/08/2023	ND	0.2700		
Cadmium	ug/L	MW-707B	11/16/2021	ND	0.0510	0.0550	**
Cadmium	ug/L	MW-707B	05/02/2022	ND	0.0550		
Cadmium	ug/L	MW-707B	07/26/2022	ND	0.0550		
Cadmium	ug/L	MW-707B	10/19/2022		5.6700		*
Cadmium	ug/L	MW-707B	02/08/2023	ND	0.0550		
Chromium	ug/L	MW-707B	11/16/2021	ND	1.1000		
Chromium	ug/L	MW-707B	05/02/2022	ND	1.1000		
Chromium	ug/L	MW-707B	07/26/2022	ND	1.1000		
Chromium	ug/L	MW-707B	10/19/2022		1680.0000		*
Chromium	ug/L	MW-707B	02/08/2023	ND	1.1000		
Cis-1,2-dichloroethylene	ug/L	MW-707B	11/16/2021	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	MW-707B	05/02/2022	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	MW-707B	07/26/2022	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	MW-707B	10/19/2022	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	MW-707B	02/08/2023	ND	0.2100		
Cobalt	ug/L	MW-707B	11/16/2021	ND	0.1900		
Cobalt	ug/L	MW-707B	05/02/2022	ND	0.1900		
Cobalt	ug/L	MW-707B	07/26/2022	ND	0.1900		

* - Outlier for that well and constituent.
** - ND value replaced with median RL.
*** - ND value replaced with manual RL.
ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Cobalt	ug/L	MW-707B	10/19/2022		43.1000		*
Cobalt	ug/L	MW-707B	02/08/2023	ND	0.1900		
Copper	ug/L	MW-707B	11/16/2021	ND	1.4000	1.8000	**
Copper	ug/L	MW-707B	05/02/2022	ND	1.8000		
Copper	ug/L	MW-707B	07/26/2022	ND	1.8000		
Copper	ug/L	MW-707B	10/19/2022		55.8000		*
Copper	ug/L	MW-707B	02/08/2023	ND	1.8000		
Lead	ug/L	MW-707B	11/16/2021		0.7290		*
Lead	ug/L	MW-707B	05/02/2022	ND	0.2400		
Lead	ug/L	MW-707B	07/26/2022	ND	0.2400		
Lead	ug/L	MW-707B	10/19/2022		23.3000		*
Lead	ug/L	MW-707B	02/08/2023	ND	0.2400		
Nickel	ug/L	MW-707B	11/16/2021	ND	1.9000		
Nickel	ug/L	MW-707B	05/02/2022	ND	1.9000		
Nickel	ug/L	MW-707B	07/26/2022	ND	1.9000		
Nickel	ug/L	MW-707B	10/19/2022		159.0000		*
Nickel	ug/L	MW-707B	02/08/2023	ND	1.9000		
Selenium	ug/L	MW-707B	11/16/2021	ND	0.9600		
Selenium	ug/L	MW-707B	05/02/2022	ND	0.9600		
Selenium	ug/L	MW-707B	07/26/2022	ND	0.9600		
Selenium	ug/L	MW-707B	10/19/2022		19.4000		*
Selenium	ug/L	MW-707B	02/08/2023	ND	0.9600		
Silver	ug/L	MW-707B	11/16/2021	ND	0.4200	0.3700	**
Silver	ug/L	MW-707B	05/02/2022	ND	0.4900	0.3700	**
Silver	ug/L	MW-707B	07/26/2022	ND	0.4900	0.3700	**
Silver	ug/L	MW-707B	10/19/2022	ND	0.4900	0.3700	**
Silver	ug/L	MW-707B	02/08/2023	ND	0.4900	0.3700	**
Thallium	ug/L	MW-707B	11/16/2021	ND	0.2600		
Thallium	ug/L	MW-707B	05/02/2022	ND	0.2600		
Thallium	ug/L	MW-707B	07/26/2022	ND	0.2600		
Thallium	ug/L	MW-707B	10/19/2022	ND	0.2600		
Thallium	ug/L	MW-707B	02/08/2023	ND	0.2600		
Vanadium	ug/L	MW-707B	11/16/2021	ND	1.1000		
Vanadium	ug/L	MW-707B	05/02/2022	ND	1.1000		
Vanadium	ug/L	MW-707B	07/26/2022	ND	1.1000		
Vanadium	ug/L	MW-707B	10/19/2022		19.6000		*
Vanadium	ug/L	MW-707B	02/08/2023	ND	1.1000		
Vinyl chloride	ug/L	MW-707B	11/16/2021	ND	0.1800		
Vinyl chloride	ug/L	MW-707B	05/02/2022	ND	0.1800		
Vinyl chloride	ug/L	MW-707B	07/26/2022	ND	0.1800		
Vinyl chloride	ug/L	MW-707B	10/19/2022	ND	0.1800		
Vinyl chloride	ug/L	MW-707B	02/08/2023	ND	0.1800		
Zinc	ug/L	MW-707B	11/16/2021	ND	10.0000		
Zinc	ug/L	MW-707B	05/02/2022	ND	10.0000		
Zinc	ug/L	MW-707B	07/26/2022	ND	10.0000		
Zinc	ug/L	MW-707B	10/19/2022		310.0000		*
Zinc	ug/L	MW-707B	02/08/2023	ND	10.0000		
1,4-dichlorobenzene	ug/L	MW-708B	11/16/2021	ND	0.2300		
1,4-dichlorobenzene	ug/L	MW-708B	05/04/2022	ND	0.2300		
1,4-dichlorobenzene	ug/L	MW-708B	07/26/2022	ND	0.2300		
1,4-dichlorobenzene	ug/L	MW-708B	10/19/2022	ND	0.2300		
1,4-dichlorobenzene	ug/L	MW-708B	12/14/2022	ND	0.2300		
Antimony	ug/L	MW-708B	11/16/2021	ND	1.1000	0.6900	**
Antimony	ug/L	MW-708B	05/04/2022	ND	0.6900		
Antimony	ug/L	MW-708B	07/26/2022	ND	0.6900		
Antimony	ug/L	MW-708B	10/19/2022	ND	0.6900		
Antimony	ug/L	MW-708B	12/14/2022	ND	0.6900		
Arsenic	ug/L	MW-708B	11/16/2021	ND	0.7500		
Arsenic	ug/L	MW-708B	05/04/2022	ND	0.7500		
Arsenic	ug/L	MW-708B	07/26/2022	ND	0.7500		
Arsenic	ug/L	MW-708B	10/19/2022	ND	0.7500		
Arsenic	ug/L	MW-708B	12/14/2022	ND	0.7500		
Barium	ug/L	MW-708B	11/16/2021		86.1000		

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ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Barium	ug/L	MW-708B	05/04/2022		55.7000		
Barium	ug/L	MW-708B	07/26/2022		58.1000		
Barium	ug/L	MW-708B	10/19/2022		59.1000		
Barium	ug/L	MW-708B	12/14/2022		56.6000		
Benzene	ug/L	MW-708B	11/16/2021	ND	0.2200		
Benzene	ug/L	MW-708B	05/04/2022	ND	0.2200		
Benzene	ug/L	MW-708B	07/26/2022	ND	0.2200		
Benzene	ug/L	MW-708B	10/19/2022	ND	0.2200		
Benzene	ug/L	MW-708B	12/14/2022	ND	0.2200		
Beryllium	ug/L	MW-708B	11/16/2021	ND	0.2700		
Beryllium	ug/L	MW-708B	05/04/2022	ND	0.2700		
Beryllium	ug/L	MW-708B	07/26/2022	ND	0.2700		
Beryllium	ug/L	MW-708B	10/19/2022	ND	0.2700		
Beryllium	ug/L	MW-708B	12/14/2022	ND	0.2700		
Cadmium	ug/L	MW-708B	11/16/2021	ND	0.0510	0.0550	**
Cadmium	ug/L	MW-708B	05/04/2022	ND	0.0550		
Cadmium	ug/L	MW-708B	07/26/2022	ND	0.0550		
Cadmium	ug/L	MW-708B	10/19/2022	ND	0.0550		
Cadmium	ug/L	MW-708B	12/14/2022	ND	0.0550		
Chromium	ug/L	MW-708B	11/16/2021	ND	1.1000		
Chromium	ug/L	MW-708B	05/04/2022	ND	1.1000		
Chromium	ug/L	MW-708B	07/26/2022	ND	1.1000		
Chromium	ug/L	MW-708B	10/19/2022	ND	1.1000		
Chromium	ug/L	MW-708B	12/14/2022	ND	1.1000		
Cis-1,2-dichloroethylene	ug/L	MW-708B	11/16/2021	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	MW-708B	05/04/2022	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	MW-708B	07/26/2022	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	MW-708B	10/19/2022	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	MW-708B	12/14/2022	ND	0.2100		
Cobalt	ug/L	MW-708B	11/16/2021		2.1900		
Cobalt	ug/L	MW-708B	05/04/2022		2.1500		
Cobalt	ug/L	MW-708B	07/26/2022		0.9560		
Cobalt	ug/L	MW-708B	10/19/2022		0.7330		
Cobalt	ug/L	MW-708B	12/14/2022	ND	0.1900		
Copper	ug/L	MW-708B	11/16/2021	ND	1.4000	1.8000	**
Copper	ug/L	MW-708B	05/04/2022	ND	1.8000		
Copper	ug/L	MW-708B	07/26/2022	ND	1.8000		
Copper	ug/L	MW-708B	10/19/2022	ND	1.8000		
Copper	ug/L	MW-708B	12/14/2022	ND	1.8000		
Lead	ug/L	MW-708B	11/16/2021		0.5430		
Lead	ug/L	MW-708B	05/04/2022	ND	0.2400		
Lead	ug/L	MW-708B	07/26/2022	ND	0.2400		
Lead	ug/L	MW-708B	10/19/2022	ND	0.2400		
Lead	ug/L	MW-708B	12/14/2022	ND	0.2400		
Nickel	ug/L	MW-708B	11/16/2021		6.8800		
Nickel	ug/L	MW-708B	05/04/2022		5.3700		
Nickel	ug/L	MW-708B	07/26/2022	ND	1.9000		
Nickel	ug/L	MW-708B	10/19/2022	ND	1.9000		
Nickel	ug/L	MW-708B	12/14/2022	ND	1.9000		
Selenium	ug/L	MW-708B	11/16/2021	ND	0.9600		
Selenium	ug/L	MW-708B	05/04/2022	ND	0.9600		
Selenium	ug/L	MW-708B	07/26/2022	ND	0.9600		
Selenium	ug/L	MW-708B	10/19/2022	ND	0.9600		
Selenium	ug/L	MW-708B	12/14/2022	ND	0.9600		
Silver	ug/L	MW-708B	11/16/2021	ND	0.4200	0.3700	**
Silver	ug/L	MW-708B	05/04/2022	ND	0.4900	0.3700	**
Silver	ug/L	MW-708B	07/26/2022	ND	0.4900	0.3700	**
Silver	ug/L	MW-708B	10/19/2022	ND	0.4900	0.3700	**
Silver	ug/L	MW-708B	12/14/2022	ND	0.4900	0.3700	**
Thallium	ug/L	MW-708B	11/16/2021	ND	0.2600		
Thallium	ug/L	MW-708B	05/04/2022	ND	0.2600		
Thallium	ug/L	MW-708B	07/26/2022	ND	0.2600		
Thallium	ug/L	MW-708B	10/19/2022	ND	0.2600		

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*** - ND value replaced with manual RL.
ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Thallium	ug/L	MW-708B	12/14/2022	ND	0.2600		
Vanadium	ug/L	MW-708B	11/16/2021	ND	1.1000		
Vanadium	ug/L	MW-708B	05/04/2022	ND	1.1000		
Vanadium	ug/L	MW-708B	07/26/2022	ND	1.1000		
Vanadium	ug/L	MW-708B	10/19/2022	ND	1.1000		
Vanadium	ug/L	MW-708B	12/14/2022	ND	1.1000		
Vinyl chloride	ug/L	MW-708B	11/16/2021	ND	0.1800		
Vinyl chloride	ug/L	MW-708B	05/04/2022	ND	0.1800		
Vinyl chloride	ug/L	MW-708B	07/26/2022	ND	0.1800		
Vinyl chloride	ug/L	MW-708B	10/19/2022	ND	0.1800		
Vinyl chloride	ug/L	MW-708B	12/14/2022	ND	0.1800		
Zinc	ug/L	MW-708B	11/16/2021	ND	10.0000		
Zinc	ug/L	MW-708B	05/04/2022	ND	10.0000		
Zinc	ug/L	MW-708B	07/26/2022	ND	10.0000		
Zinc	ug/L	MW-708B	10/19/2022	ND	10.0000		
Zinc	ug/L	MW-708B	12/14/2022	ND	10.0000		
1,4-dichlorobenzene	ug/L	MW-709B	11/16/2021	ND	0.2300		
1,4-dichlorobenzene	ug/L	MW-709B	05/04/2022	ND	0.2300		
1,4-dichlorobenzene	ug/L	MW-709B	07/26/2022	ND	0.2300		
1,4-dichlorobenzene	ug/L	MW-709B	10/20/2022	ND	0.2300		
1,4-dichlorobenzene	ug/L	MW-709B	02/07/2023	ND	0.2300		
1,4-dichlorobenzene	ug/L	MW-709B	04/11/2023	ND	0.2300		
1,4-dichlorobenzene	ug/L	MW-709B	09/12/2023	ND	0.2300		
Antimony	ug/L	MW-709B	11/16/2021	ND	1.1000	0.6900	**
Antimony	ug/L	MW-709B	05/04/2022	ND	0.6900		
Antimony	ug/L	MW-709B	07/26/2022	ND	0.6900		
Antimony	ug/L	MW-709B	10/20/2022	ND	0.6900		
Antimony	ug/L	MW-709B	02/07/2023	ND	0.6900		
Antimony	ug/L	MW-709B	04/11/2023	ND	1.0000	0.6900	**
Antimony	ug/L	MW-709B	09/12/2023	ND	1.0000	0.6900	**
Arsenic	ug/L	MW-709B	11/16/2021	ND	0.7500		
Arsenic	ug/L	MW-709B	05/04/2022	ND	0.7500		
Arsenic	ug/L	MW-709B	07/26/2022	ND	0.7500		
Arsenic	ug/L	MW-709B	10/20/2022	ND	0.7500		
Arsenic	ug/L	MW-709B	02/07/2023	ND	0.7500		
Arsenic	ug/L	MW-709B	04/11/2023	ND	0.5300	0.7500	**
Arsenic	ug/L	MW-709B	09/12/2023	ND	0.5300	0.7500	**
Barium	ug/L	MW-709B	11/16/2021		339.0000		
Barium	ug/L	MW-709B	05/04/2022		150.0000		
Barium	ug/L	MW-709B	07/26/2022		114.0000		
Barium	ug/L	MW-709B	10/20/2022		112.0000		
Barium	ug/L	MW-709B	02/07/2023		136.0000		
Barium	ug/L	MW-709B	04/11/2023		87.8000		
Barium	ug/L	MW-709B	09/12/2023		105.0000		
Benzene	ug/L	MW-709B	11/16/2021	ND	0.2200		
Benzene	ug/L	MW-709B	05/04/2022	ND	0.2200		
Benzene	ug/L	MW-709B	07/26/2022	ND	0.2200		
Benzene	ug/L	MW-709B	10/20/2022	ND	0.2200		
Benzene	ug/L	MW-709B	02/07/2023	ND	0.2200		
Benzene	ug/L	MW-709B	04/11/2023	ND	0.2200		
Benzene	ug/L	MW-709B	09/12/2023	ND	0.2200		
Beryllium	ug/L	MW-709B	11/16/2021	ND	0.2700		
Beryllium	ug/L	MW-709B	05/04/2022	ND	0.2700		
Beryllium	ug/L	MW-709B	07/26/2022	ND	0.2700		
Beryllium	ug/L	MW-709B	10/20/2022	ND	0.2700		
Beryllium	ug/L	MW-709B	02/07/2023	ND	0.2700		
Beryllium	ug/L	MW-709B	04/11/2023	ND	0.3300	0.2700	**
Beryllium	ug/L	MW-709B	09/12/2023	ND	0.3300	0.2700	**
Cadmium	ug/L	MW-709B	11/16/2021	ND	0.0510	0.0550	**
Cadmium	ug/L	MW-709B	05/04/2022	ND	0.0550		
Cadmium	ug/L	MW-709B	07/26/2022	ND	0.0550		
Cadmium	ug/L	MW-709B	10/20/2022	ND	0.0550		
Cadmium	ug/L	MW-709B	02/07/2023	ND	0.0550		

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*** - ND value replaced with manual RL.
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Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Cadmium	ug/L	MW-709B	04/11/2023		0.2800		
Cadmium	ug/L	MW-709B	09/12/2023	ND	0.1000	0.0550	**
Chromium	ug/L	MW-709B	11/16/2021	ND	1.1000		
Chromium	ug/L	MW-709B	05/04/2022	ND	1.1000		
Chromium	ug/L	MW-709B	07/26/2022	ND	1.1000		
Chromium	ug/L	MW-709B	10/20/2022	ND	1.1000		
Chromium	ug/L	MW-709B	02/07/2023	ND	1.1000		
Chromium	ug/L	MW-709B	04/11/2023	ND	1.1000		
Chromium	ug/L	MW-709B	09/12/2023	ND	1.1000		
Cis-1,2-dichloroethylene	ug/L	MW-709B	11/16/2021	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	MW-709B	05/04/2022	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	MW-709B	07/26/2022	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	MW-709B	10/20/2022	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	MW-709B	02/07/2023	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	MW-709B	04/11/2023	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	MW-709B	09/12/2023	ND	0.2100		
Cobalt	ug/L	MW-709B	11/16/2021		3.3400		*
Cobalt	ug/L	MW-709B	05/04/2022	ND	0.1900		
Cobalt	ug/L	MW-709B	07/26/2022	ND	0.1900		
Cobalt	ug/L	MW-709B	10/20/2022	ND	0.1900		
Cobalt	ug/L	MW-709B	02/07/2023	ND	0.1900		
Cobalt	ug/L	MW-709B	04/11/2023	ND	0.1700	0.1900	**
Cobalt	ug/L	MW-709B	09/12/2023	ND	0.1700	0.1900	**
Copper	ug/L	MW-709B	11/16/2021	ND	1.4000	1.8000	**
Copper	ug/L	MW-709B	05/04/2022	ND	1.8000		
Copper	ug/L	MW-709B	07/26/2022	ND	1.8000		
Copper	ug/L	MW-709B	10/20/2022	ND	1.8000		
Copper	ug/L	MW-709B	02/07/2023	ND	1.8000		
Copper	ug/L	MW-709B	04/11/2023	ND	1.8000		
Copper	ug/L	MW-709B	09/12/2023	ND	1.8000		
Lead	ug/L	MW-709B	11/16/2021		1.3100		
Lead	ug/L	MW-709B	05/04/2022	ND	0.2400		
Lead	ug/L	MW-709B	07/26/2022	ND	0.2400		
Lead	ug/L	MW-709B	10/20/2022	ND	0.2400		
Lead	ug/L	MW-709B	02/07/2023	ND	0.2400		
Lead	ug/L	MW-709B	04/11/2023		0.5960		
Lead	ug/L	MW-709B	09/12/2023	ND	0.2400		
Nickel	ug/L	MW-709B	11/16/2021		5.2100		
Nickel	ug/L	MW-709B	05/04/2022	ND	1.9000		
Nickel	ug/L	MW-709B	07/26/2022	ND	1.9000		
Nickel	ug/L	MW-709B	10/20/2022	ND	1.9000		
Nickel	ug/L	MW-709B	02/07/2023	ND	1.9000		
Nickel	ug/L	MW-709B	04/11/2023	ND	1.9000		
Nickel	ug/L	MW-709B	09/12/2023	ND	1.9000		
Selenium	ug/L	MW-709B	11/16/2021	ND	0.9600		
Selenium	ug/L	MW-709B	05/04/2022	ND	0.9600		
Selenium	ug/L	MW-709B	07/26/2022	ND	0.9600		
Selenium	ug/L	MW-709B	10/20/2022	ND	0.9600		
Selenium	ug/L	MW-709B	02/07/2023	ND	0.9600		
Selenium	ug/L	MW-709B	04/11/2023	ND	1.4000	0.9600	**
Selenium	ug/L	MW-709B	09/12/2023	ND	1.4000	0.9600	**
Silver	ug/L	MW-709B	11/16/2021	ND	0.4200	0.3700	**
Silver	ug/L	MW-709B	05/04/2022	ND	0.4900	0.3700	**
Silver	ug/L	MW-709B	07/26/2022	ND	0.4900	0.3700	**
Silver	ug/L	MW-709B	10/20/2022	ND	0.4900	0.3700	**
Silver	ug/L	MW-709B	02/07/2023	ND	0.4900	0.3700	**
Silver	ug/L	MW-709B	04/11/2023	ND	0.5000	0.3700	**
Silver	ug/L	MW-709B	09/12/2023	ND	0.5000	0.3700	**
Thallium	ug/L	MW-709B	11/16/2021	ND	0.2600		
Thallium	ug/L	MW-709B	05/04/2022	ND	0.2600		
Thallium	ug/L	MW-709B	07/26/2022	ND	0.2600		
Thallium	ug/L	MW-709B	10/20/2022	ND	0.2600		
Thallium	ug/L	MW-709B	02/07/2023	ND	0.2600		

* - Outlier for that well and constituent.
** - ND value replaced with median RL.
*** - ND value replaced with manual RL.
ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Thallium	ug/L	MW-709B	04/11/2023		3.8300		*
Thallium	ug/L	MW-709B	09/12/2023	ND	0.2600		
Vanadium	ug/L	MW-709B	11/16/2021	ND	1.1000		
Vanadium	ug/L	MW-709B	05/04/2022	ND	1.1000		
Vanadium	ug/L	MW-709B	07/26/2022	ND	1.1000		
Vanadium	ug/L	MW-709B	10/20/2022	ND	1.1000		
Vanadium	ug/L	MW-709B	02/07/2023	ND	1.1000		
Vanadium	ug/L	MW-709B	04/11/2023	ND	1.1000		
Vanadium	ug/L	MW-709B	09/12/2023	ND	1.1000		
Vinyl chloride	ug/L	MW-709B	11/16/2021	ND	0.1800		
Vinyl chloride	ug/L	MW-709B	05/04/2022	ND	0.1800		
Vinyl chloride	ug/L	MW-709B	07/26/2022	ND	0.1800		
Vinyl chloride	ug/L	MW-709B	10/20/2022	ND	0.1800		
Vinyl chloride	ug/L	MW-709B	02/07/2023	ND	0.1800		
Vinyl chloride	ug/L	MW-709B	04/11/2023	ND	0.1800		
Vinyl chloride	ug/L	MW-709B	09/12/2023	ND	0.1800		
Zinc	ug/L	MW-709B	11/16/2021	ND	10.0000		
Zinc	ug/L	MW-709B	05/04/2022	ND	10.0000		
Zinc	ug/L	MW-709B	07/26/2022	ND	10.0000		
Zinc	ug/L	MW-709B	10/20/2022	ND	10.0000		
Zinc	ug/L	MW-709B	02/07/2023	ND	10.0000		
Zinc	ug/L	MW-709B	04/11/2023	ND	6.4000	10.0000	**
Zinc	ug/L	MW-709B	09/12/2023	ND	6.4000	10.0000	**
1,4-dichlorobenzene	ug/L	MW-710B	11/19/2021	ND	0.2300		
1,4-dichlorobenzene	ug/L	MW-710B	05/04/2022	ND	0.2300		
1,4-dichlorobenzene	ug/L	MW-710B	07/27/2022	ND	0.2300		
1,4-dichlorobenzene	ug/L	MW-710B	10/19/2022	ND	0.2300		
1,4-dichlorobenzene	ug/L	MW-710B	02/07/2023	ND	0.2300		
1,4-dichlorobenzene	ug/L	MW-710B	04/14/2023	ND	0.2300		
1,4-dichlorobenzene	ug/L	MW-710B	09/29/2023	ND	0.2300		
Antimony	ug/L	MW-710B	11/19/2021	ND	1.1000	0.6900	**
Antimony	ug/L	MW-710B	05/04/2022	ND	0.6900		
Antimony	ug/L	MW-710B	07/27/2022	ND	0.6900		
Antimony	ug/L	MW-710B	10/19/2022	ND	0.6900		
Antimony	ug/L	MW-710B	02/07/2023	ND	0.6900		
Antimony	ug/L	MW-710B	04/14/2023	ND	1.0000	0.6900	**
Antimony	ug/L	MW-710B	09/29/2023	ND	1.0000	0.6900	**
Arsenic	ug/L	MW-710B	11/19/2021	ND	0.7500		
Arsenic	ug/L	MW-710B	05/04/2022	ND	0.7500		
Arsenic	ug/L	MW-710B	07/27/2022	ND	0.7500		
Arsenic	ug/L	MW-710B	10/19/2022	ND	0.7500		
Arsenic	ug/L	MW-710B	02/07/2023	ND	0.7500		
Arsenic	ug/L	MW-710B	04/14/2023	ND	0.5300	0.7500	**
Arsenic	ug/L	MW-710B	09/29/2023	ND	0.5300	0.7500	**
Barium	ug/L	MW-710B	11/19/2021		233.0000		
Barium	ug/L	MW-710B	05/04/2022		87.9000		
Barium	ug/L	MW-710B	07/27/2022		88.1000		
Barium	ug/L	MW-710B	10/19/2022		95.8000		
Barium	ug/L	MW-710B	02/07/2023		83.2000		
Barium	ug/L	MW-710B	04/14/2023		75.7000		
Barium	ug/L	MW-710B	09/29/2023		80.5000		
Benzene	ug/L	MW-710B	11/19/2021	ND	0.2200		
Benzene	ug/L	MW-710B	05/04/2022	ND	0.2200		
Benzene	ug/L	MW-710B	07/27/2022	ND	0.2200		
Benzene	ug/L	MW-710B	10/19/2022	ND	0.2200		
Benzene	ug/L	MW-710B	02/07/2023	ND	0.2200		
Benzene	ug/L	MW-710B	04/14/2023	ND	0.2200		
Benzene	ug/L	MW-710B	09/29/2023	ND	0.2200		
Beryllium	ug/L	MW-710B	11/19/2021	ND	0.2700		
Beryllium	ug/L	MW-710B	05/04/2022	ND	0.2700		
Beryllium	ug/L	MW-710B	07/27/2022	ND	0.2700		
Beryllium	ug/L	MW-710B	10/19/2022	ND	0.2700		
Beryllium	ug/L	MW-710B	02/07/2023	ND	0.2700		

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*** - ND value replaced with manual RL.
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Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Beryllium	ug/L	MW-710B	04/14/2023	ND	0.3300	0.2700	**
Beryllium	ug/L	MW-710B	09/29/2023	ND	0.3300	0.2700	**
Cadmium	ug/L	MW-710B	11/19/2021	ND	0.0510	0.0550	**
Cadmium	ug/L	MW-710B	05/04/2022	ND	0.0550		
Cadmium	ug/L	MW-710B	07/27/2022	ND	0.0550		
Cadmium	ug/L	MW-710B	10/19/2022	ND	0.0550		
Cadmium	ug/L	MW-710B	02/07/2023	ND	0.0550		
Cadmium	ug/L	MW-710B	04/14/2023	ND	0.1000	0.0550	**
Cadmium	ug/L	MW-710B	09/29/2023	ND	0.1000	0.0550	**
Chromium	ug/L	MW-710B	11/19/2021	ND	1.1000		
Chromium	ug/L	MW-710B	05/04/2022	ND	1.1000		
Chromium	ug/L	MW-710B	07/27/2022	ND	1.1000		
Chromium	ug/L	MW-710B	10/19/2022	ND	1.1000		
Chromium	ug/L	MW-710B	02/07/2023	ND	1.1000		
Chromium	ug/L	MW-710B	04/14/2023	ND	1.1000		
Chromium	ug/L	MW-710B	09/29/2023	ND	1.1000		
Cis-1,2-dichloroethylene	ug/L	MW-710B	11/19/2021	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	MW-710B	05/04/2022	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	MW-710B	07/27/2022	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	MW-710B	10/19/2022	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	MW-710B	02/07/2023	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	MW-710B	04/14/2023	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	MW-710B	09/29/2023	ND	0.2100		
Cobalt	ug/L	MW-710B	11/19/2021	ND	0.1900		
Cobalt	ug/L	MW-710B	05/04/2022	ND	0.1900		
Cobalt	ug/L	MW-710B	07/27/2022	ND	0.1900		
Cobalt	ug/L	MW-710B	10/19/2022	ND	0.1900		
Cobalt	ug/L	MW-710B	02/07/2023	ND	0.1900		
Cobalt	ug/L	MW-710B	04/14/2023	ND	0.1700	0.1900	**
Cobalt	ug/L	MW-710B	09/29/2023	ND	0.1700	0.1900	**
Copper	ug/L	MW-710B	11/19/2021	ND	1.4000	1.8000	**
Copper	ug/L	MW-710B	05/04/2022	ND	1.8000		
Copper	ug/L	MW-710B	07/27/2022	ND	1.8000		
Copper	ug/L	MW-710B	10/19/2022	ND	1.8000		
Copper	ug/L	MW-710B	02/07/2023	ND	1.8000		
Copper	ug/L	MW-710B	04/14/2023	ND	1.8000		
Copper	ug/L	MW-710B	09/29/2023	ND	1.8000		
Lead	ug/L	MW-710B	11/19/2021	ND	0.2100	0.2400	**
Lead	ug/L	MW-710B	05/04/2022	ND	0.2400		
Lead	ug/L	MW-710B	07/27/2022	ND	0.2400		
Lead	ug/L	MW-710B	10/19/2022	ND	0.2400		
Lead	ug/L	MW-710B	02/07/2023	ND	0.2400		
Lead	ug/L	MW-710B	04/14/2023	ND	0.2400		
Lead	ug/L	MW-710B	09/29/2023	ND	0.2400		
Nickel	ug/L	MW-710B	11/19/2021	ND	1.9000		
Nickel	ug/L	MW-710B	05/04/2022	ND	1.9000		
Nickel	ug/L	MW-710B	07/27/2022	ND	1.9000		
Nickel	ug/L	MW-710B	10/19/2022	ND	1.9000		
Nickel	ug/L	MW-710B	02/07/2023	ND	1.9000		
Nickel	ug/L	MW-710B	04/14/2023	ND	1.9000		
Nickel	ug/L	MW-710B	09/29/2023	ND	1.9000		
Selenium	ug/L	MW-710B	11/19/2021	ND	0.9600		
Selenium	ug/L	MW-710B	05/04/2022	ND	0.9600		
Selenium	ug/L	MW-710B	07/27/2022	ND	0.9600		
Selenium	ug/L	MW-710B	10/19/2022	ND	0.9600		
Selenium	ug/L	MW-710B	02/07/2023	ND	0.9600		
Selenium	ug/L	MW-710B	04/14/2023	ND	1.4000	0.9600	**
Selenium	ug/L	MW-710B	09/29/2023	ND	1.4000	0.9600	**
Silver	ug/L	MW-710B	11/19/2021	ND	0.4200	0.3700	**
Silver	ug/L	MW-710B	05/04/2022	ND	0.4900	0.3700	**
Silver	ug/L	MW-710B	07/27/2022	ND	0.4900	0.3700	**
Silver	ug/L	MW-710B	10/19/2022	ND	0.4900	0.3700	**
Silver	ug/L	MW-710B	02/07/2023	ND	0.4900	0.3700	**

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Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Silver	ug/L	MW-710B	04/14/2023	ND	0.5000	0.3700	**
Silver	ug/L	MW-710B	09/29/2023	ND	0.5000	0.3700	**
Thallium	ug/L	MW-710B	11/19/2021	ND	0.2600		
Thallium	ug/L	MW-710B	05/04/2022	ND	0.2600		
Thallium	ug/L	MW-710B	07/27/2022	ND	0.2600		
Thallium	ug/L	MW-710B	10/19/2022	ND	0.2600		
Thallium	ug/L	MW-710B	02/07/2023	ND	0.2600		
Thallium	ug/L	MW-710B	04/14/2023	ND	0.2600		
Thallium	ug/L	MW-710B	09/29/2023	ND	0.2600		
Vanadium	ug/L	MW-710B	11/19/2021	ND	1.1000		
Vanadium	ug/L	MW-710B	05/04/2022	ND	1.1000		
Vanadium	ug/L	MW-710B	07/27/2022	ND	1.1000		
Vanadium	ug/L	MW-710B	10/19/2022	ND	1.1000		
Vanadium	ug/L	MW-710B	02/07/2023	ND	1.1000		
Vanadium	ug/L	MW-710B	04/14/2023	ND	1.1000		
Vanadium	ug/L	MW-710B	09/29/2023	ND	1.1000		
Vinyl chloride	ug/L	MW-710B	11/19/2021	ND	0.1800		
Vinyl chloride	ug/L	MW-710B	05/04/2022	ND	0.1800		
Vinyl chloride	ug/L	MW-710B	07/27/2022	ND	0.1800		
Vinyl chloride	ug/L	MW-710B	10/19/2022	ND	0.1800		
Vinyl chloride	ug/L	MW-710B	02/07/2023	ND	0.1800		
Vinyl chloride	ug/L	MW-710B	04/14/2023	ND	0.1800		
Vinyl chloride	ug/L	MW-710B	09/29/2023	ND	0.1800		
Zinc	ug/L	MW-710B	11/19/2021	ND	10.0000		
Zinc	ug/L	MW-710B	05/04/2022	ND	10.0000		
Zinc	ug/L	MW-710B	07/27/2022	ND	10.0000		
Zinc	ug/L	MW-710B	10/19/2022	ND	10.0000		
Zinc	ug/L	MW-710B	02/07/2023	ND	10.0000		
Zinc	ug/L	MW-710B	04/14/2023	ND	6.4000	10.0000	**
Zinc	ug/L	MW-710B	09/29/2023	ND	6.4000	10.0000	**
1,4-dichlorobenzene	ug/L	OW-114B	03/18/2014		0.3530		
1,4-dichlorobenzene	ug/L	OW-114B	08/25/2014	ND	0.2000	0.2300	**
1,4-dichlorobenzene	ug/L	OW-114B	03/12/2015	ND	0.2000	0.2300	**
1,4-dichlorobenzene	ug/L	OW-114B	08/27/2015	ND	0.2000	0.2300	**
1,4-dichlorobenzene	ug/L	OW-114B	03/28/2016	ND	0.2000	0.2300	**
1,4-dichlorobenzene	ug/L	OW-114B	10/11/2016	ND	0.2000	0.2300	**
1,4-dichlorobenzene	ug/L	OW-114B	12/12/2016	ND	0.2000	0.2300	**
1,4-dichlorobenzene	ug/L	OW-114B	04/06/2017	ND	0.2000	0.2300	**
1,4-dichlorobenzene	ug/L	OW-114B	09/27/2017	ND	0.2000	0.2300	**
1,4-dichlorobenzene	ug/L	OW-114B	03/12/2018	ND	0.2000	0.2300	**
1,4-dichlorobenzene	ug/L	OW-114B	09/20/2018	ND	0.2300		
1,4-dichlorobenzene	ug/L	OW-114B	03/27/2019	ND	0.2300		
1,4-dichlorobenzene	ug/L	OW-114B	09/30/2019	ND	0.2300		
1,4-dichlorobenzene	ug/L	OW-114B	03/30/2020	ND	0.2300		
1,4-dichlorobenzene	ug/L	OW-114B	10/01/2020	ND	0.2300		
1,4-dichlorobenzene	ug/L	OW-114B	03/26/2021	ND	0.2300		
1,4-dichlorobenzene	ug/L	OW-114B	11/15/2021	ND	0.2300		
1,4-dichlorobenzene	ug/L	OW-114B	05/11/2022	ND	0.2300		
1,4-dichlorobenzene	ug/L	OW-114B	11/09/2022	ND	0.2300		
1,4-dichlorobenzene	ug/L	OW-114B	04/18/2023	ND	0.2300		
1,4-dichlorobenzene	ug/L	OW-114B	10/05/2023	ND	0.2300		
Antimony	ug/L	OW-114B	03/18/2014		0.5010		
Antimony	ug/L	OW-114B	08/25/2014	ND	0.1610	0.6900	**
Antimony	ug/L	OW-114B	03/12/2015	ND	0.1610	0.6900	**
Antimony	ug/L	OW-114B	08/27/2015	ND	0.1610	0.6900	**
Antimony	ug/L	OW-114B	03/28/2016	ND	0.2370	0.6900	**
Antimony	ug/L	OW-114B	10/11/2016	ND	0.2370	0.6900	**
Antimony	ug/L	OW-114B	12/12/2016	ND	0.2370	0.6900	**
Antimony	ug/L	OW-114B	04/06/2017	ND	0.1850	0.6900	**
Antimony	ug/L	OW-114B	09/27/2017	ND	0.1850	0.6900	**
Antimony	ug/L	OW-114B	03/12/2018		0.2720		
Antimony	ug/L	OW-114B	09/20/2018	ND	0.4200	0.6900	**
Antimony	ug/L	OW-114B	03/27/2019	ND	0.5300	0.6900	**

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Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Antimony	ug/L	OW-114B	09/30/2019	ND	0.5300	0.6900	**
Antimony	ug/L	OW-114B	03/30/2020	ND	0.5800	0.6900	**
Antimony	ug/L	OW-114B	10/01/2020	ND	0.5100	0.6900	**
Antimony	ug/L	OW-114B	03/26/2021	ND	1.1000	0.6900	**
Antimony	ug/L	OW-114B	11/15/2021	ND	1.1000	0.6900	**
Antimony	ug/L	OW-114B	05/11/2022	ND	0.6900		
Antimony	ug/L	OW-114B	11/09/2022	ND	0.6900		
Antimony	ug/L	OW-114B	04/18/2023	ND	1.0000	0.6900	**
Antimony	ug/L	OW-114B	10/05/2023	ND	1.0000	0.6900	**
Arsenic	ug/L	OW-114B	03/18/2014		2.5500		
Arsenic	ug/L	OW-114B	08/25/2014	ND	0.9450	0.7500	**
Arsenic	ug/L	OW-114B	03/12/2015		1.3000		
Arsenic	ug/L	OW-114B	08/27/2015	ND	0.9450	0.7500	**
Arsenic	ug/L	OW-114B	03/28/2016		0.8230		
Arsenic	ug/L	OW-114B	10/11/2016		1.8400		
Arsenic	ug/L	OW-114B	12/12/2016	ND	0.6720	0.7500	**
Arsenic	ug/L	OW-114B	04/06/2017		1.5800		
Arsenic	ug/L	OW-114B	09/27/2017		2.2600		
Arsenic	ug/L	OW-114B	03/12/2018		2.1400		
Arsenic	ug/L	OW-114B	09/20/2018	ND	0.5700	0.7500	**
Arsenic	ug/L	OW-114B	03/27/2019	ND	0.7500		
Arsenic	ug/L	OW-114B	09/30/2019	ND	0.7500		
Arsenic	ug/L	OW-114B	03/30/2020	ND	0.8800	0.7500	**
Arsenic	ug/L	OW-114B	10/01/2020	ND	0.8800	0.7500	**
Arsenic	ug/L	OW-114B	03/26/2021	ND	0.7500		
Arsenic	ug/L	OW-114B	11/15/2021	ND	0.7500		
Arsenic	ug/L	OW-114B	05/11/2022	ND	0.7500		
Arsenic	ug/L	OW-114B	11/09/2022	ND	0.7500		
Arsenic	ug/L	OW-114B	04/18/2023	ND	0.5300	0.7500	**
Arsenic	ug/L	OW-114B	10/05/2023	ND	0.5300	0.7500	**
Barium	ug/L	OW-114B	03/18/2014		66.7000		
Barium	ug/L	OW-114B	08/25/2014		62.0000		
Barium	ug/L	OW-114B	03/12/2015		63.6000		
Barium	ug/L	OW-114B	08/27/2015		71.3000		
Barium	ug/L	OW-114B	03/28/2016		51.7000		
Barium	ug/L	OW-114B	10/11/2016		18.6000		
Barium	ug/L	OW-114B	12/12/2016		51.3000		
Barium	ug/L	OW-114B	04/06/2017		45.3000		
Barium	ug/L	OW-114B	09/27/2017		45.2000		
Barium	ug/L	OW-114B	03/12/2018		49.6000		
Barium	ug/L	OW-114B	09/20/2018		47.1000		
Barium	ug/L	OW-114B	03/27/2019		36.7000		
Barium	ug/L	OW-114B	09/30/2019		51.7000		
Barium	ug/L	OW-114B	03/30/2020		48.5000		
Barium	ug/L	OW-114B	10/01/2020		47.2000		
Barium	ug/L	OW-114B	03/26/2021		42.7000		
Barium	ug/L	OW-114B	11/15/2021		46.4000		
Barium	ug/L	OW-114B	05/11/2022		55.9000		
Barium	ug/L	OW-114B	11/09/2022		54.8000		
Barium	ug/L	OW-114B	04/18/2023		62.7000		
Barium	ug/L	OW-114B	10/05/2023		62.1000		
Benzene	ug/L	OW-114B	03/18/2014		0.2290		
Benzene	ug/L	OW-114B	08/25/2014	ND	0.1100	0.2200	**
Benzene	ug/L	OW-114B	03/12/2015	ND	0.1100	0.2200	**
Benzene	ug/L	OW-114B	08/27/2015	ND	0.1100	0.2200	**
Benzene	ug/L	OW-114B	03/28/2016	ND	0.1100	0.2200	**
Benzene	ug/L	OW-114B	10/11/2016	ND	0.1100	0.2200	**
Benzene	ug/L	OW-114B	12/12/2016	ND	0.1100	0.2200	**
Benzene	ug/L	OW-114B	04/06/2017	ND	0.1100	0.2200	**
Benzene	ug/L	OW-114B	09/27/2017	ND	0.1100	0.2200	**
Benzene	ug/L	OW-114B	03/12/2018	ND	0.1100	0.2200	**
Benzene	ug/L	OW-114B	09/20/2018		3.5800		*
Benzene	ug/L	OW-114B	03/27/2019	ND	0.2200		

* - Outlier for that well and constituent.
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*** - ND value replaced with manual RL.
ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Benzene	ug/L	OW-114B	09/30/2019	ND	0.2200		
Benzene	ug/L	OW-114B	03/30/2020	ND	0.2200		
Benzene	ug/L	OW-114B	10/01/2020	ND	0.2200		
Benzene	ug/L	OW-114B	03/26/2021	ND	0.2200		
Benzene	ug/L	OW-114B	11/15/2021	ND	0.2200		
Benzene	ug/L	OW-114B	05/11/2022	ND	0.2200		
Benzene	ug/L	OW-114B	11/09/2022	ND	0.2200		
Benzene	ug/L	OW-114B	04/18/2023	ND	0.2200		
Benzene	ug/L	OW-114B	10/05/2023	ND	0.2200		
Beryllium	ug/L	OW-114B	03/18/2014	ND	0.0800	0.2700	**
Beryllium	ug/L	OW-114B	08/25/2014	ND	0.0390	0.2700	**
Beryllium	ug/L	OW-114B	03/12/2015		0.0410		
Beryllium	ug/L	OW-114B	08/27/2015	ND	0.0390	0.2700	**
Beryllium	ug/L	OW-114B	03/28/2016	ND	0.2210	0.2700	**
Beryllium	ug/L	OW-114B	10/11/2016	ND	0.2210	0.2700	**
Beryllium	ug/L	OW-114B	12/12/2016	ND	0.2210	0.2700	**
Beryllium	ug/L	OW-114B	04/06/2017	ND	0.1250	0.2700	**
Beryllium	ug/L	OW-114B	09/27/2017	ND	0.1250	0.2700	**
Beryllium	ug/L	OW-114B	03/12/2018	ND	0.1250	0.2700	**
Beryllium	ug/L	OW-114B	09/20/2018	ND	0.1900	0.2700	**
Beryllium	ug/L	OW-114B	03/27/2019	ND	0.2700		
Beryllium	ug/L	OW-114B	09/30/2019	ND	0.2700		
Beryllium	ug/L	OW-114B	03/30/2020	ND	0.2700		
Beryllium	ug/L	OW-114B	10/01/2020	ND	0.2700		
Beryllium	ug/L	OW-114B	03/26/2021	ND	0.2700		
Beryllium	ug/L	OW-114B	11/15/2021	ND	0.2700		
Beryllium	ug/L	OW-114B	05/11/2022	ND	0.2700		
Beryllium	ug/L	OW-114B	11/09/2022	ND	2.7000	0.2700	**
Beryllium	ug/L	OW-114B	04/18/2023	ND	0.3300	0.2700	**
Beryllium	ug/L	OW-114B	10/05/2023	ND	0.3300	0.2700	**
Beta-bhc	ug/L	OW-114B	03/18/2014		0.0084		
Beta-bhc	ug/L	OW-114B	06/11/2014	ND	0.0053		
Beta-bhc	ug/L	OW-114B	08/25/2014	ND	0.0051	0.0053	**
Beta-bhc	ug/L	OW-114B	03/12/2015	ND	0.0050	0.0053	**
Beta-bhc	ug/L	OW-114B	08/27/2015		0.0367		*
Beta-bhc	ug/L	OW-114B	03/28/2016	ND	0.0054	0.0053	**
Beta-bhc	ug/L	OW-114B	10/11/2016	ND	0.0053		
Beta-bhc	ug/L	OW-114B	04/06/2017		0.0065		
Beta-bhc	ug/L	OW-114B	09/27/2017		0.0570		*
Beta-bhc	ug/L	OW-114B	03/12/2018	ND	0.0055	0.0053	**
Beta-bhc	ug/L	OW-114B	07/13/2018		0.0177		
Beta-bhc	ug/L	OW-114B	09/20/2018	ND	0.0052	0.0053	**
Beta-bhc	ug/L	OW-114B	03/27/2019	ND	0.0055	0.0053	**
Beta-bhc	ug/L	OW-114B	09/30/2019	ND	0.0050	0.0053	**
Beta-bhc	ug/L	OW-114B	03/30/2020	ND	0.0056	0.0053	**
Beta-bhc	ug/L	OW-114B	10/01/2020	ND	0.0055	0.0053	**
Beta-bhc	ug/L	OW-114B	03/26/2021	ND	0.0056	0.0053	**
Cadmium	ug/L	OW-114B	03/18/2014	ND	0.1000	0.0550	**
Cadmium	ug/L	OW-114B	08/25/2014		0.2130		
Cadmium	ug/L	OW-114B	03/12/2015	ND	0.1120	0.0550	**
Cadmium	ug/L	OW-114B	08/27/2015		0.1420		
Cadmium	ug/L	OW-114B	03/28/2016		0.1420		
Cadmium	ug/L	OW-114B	10/11/2016	ND	0.0351	0.0550	**
Cadmium	ug/L	OW-114B	12/12/2016		0.0650		
Cadmium	ug/L	OW-114B	04/06/2017	ND	0.0441	0.0550	**
Cadmium	ug/L	OW-114B	09/27/2017	ND	0.0441	0.0550	**
Cadmium	ug/L	OW-114B	03/12/2018		0.1740		
Cadmium	ug/L	OW-114B	09/20/2018		0.0860		
Cadmium	ug/L	OW-114B	03/27/2019	ND	0.0770	0.0550	**
Cadmium	ug/L	OW-114B	09/30/2019	ND	0.0390	0.0550	**
Cadmium	ug/L	OW-114B	03/30/2020	ND	0.0390	0.0550	**
Cadmium	ug/L	OW-114B	10/01/2020	ND	0.0490	0.0550	**
Cadmium	ug/L	OW-114B	03/26/2021	ND	0.0510	0.0550	**

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Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Cadmium	ug/L	OW-114B	11/15/2021	ND	0.0510	0.0550	**
Cadmium	ug/L	OW-114B	05/11/2022	ND	0.0550		
Cadmium	ug/L	OW-114B	11/09/2022	ND	0.0550		
Cadmium	ug/L	OW-114B	04/18/2023	ND	0.1000	0.0550	**
Cadmium	ug/L	OW-114B	10/05/2023	ND	0.1000	0.0550	**
Chromium	ug/L	OW-114B	03/18/2014		1.8800		
Chromium	ug/L	OW-114B	08/25/2014	ND	1.2400	1.1000	**
Chromium	ug/L	OW-114B	03/12/2015	ND	1.2400	1.1000	**
Chromium	ug/L	OW-114B	08/27/2015	ND	1.2400	1.1000	**
Chromium	ug/L	OW-114B	03/28/2016	ND	0.3550		*
Chromium	ug/L	OW-114B	10/11/2016		2.0200		
Chromium	ug/L	OW-114B	12/12/2016	ND	0.3550		*
Chromium	ug/L	OW-114B	04/06/2017	ND	0.7290	1.1000	**
Chromium	ug/L	OW-114B	09/27/2017	ND	0.7290	1.1000	**
Chromium	ug/L	OW-114B	03/12/2018	ND	0.7290	1.1000	**
Chromium	ug/L	OW-114B	09/20/2018	ND	0.7600	1.1000	**
Chromium	ug/L	OW-114B	03/27/2019	ND	0.9800	1.1000	**
Chromium	ug/L	OW-114B	09/30/2019	ND	0.9800	1.1000	**
Chromium	ug/L	OW-114B	03/30/2020	ND	1.1000		
Chromium	ug/L	OW-114B	10/01/2020	ND	1.1000		
Chromium	ug/L	OW-114B	03/26/2021	ND	1.1000		
Chromium	ug/L	OW-114B	11/15/2021	ND	1.1000		
Chromium	ug/L	OW-114B	05/11/2022	ND	1.1000		
Chromium	ug/L	OW-114B	11/09/2022	ND	1.1000		
Chromium	ug/L	OW-114B	04/18/2023	ND	1.1000		
Chromium	ug/L	OW-114B	10/05/2023	ND	1.1000		
Cis-1,2-dichloroethylene	ug/L	OW-114B	03/18/2014	ND	0.1300	0.2100	**
Cis-1,2-dichloroethylene	ug/L	OW-114B	08/25/2014	ND	0.1300	0.2100	**
Cis-1,2-dichloroethylene	ug/L	OW-114B	03/12/2015	ND	0.1300	0.2100	**
Cis-1,2-dichloroethylene	ug/L	OW-114B	08/27/2015	ND	0.1300	0.2100	**
Cis-1,2-dichloroethylene	ug/L	OW-114B	03/28/2016	ND	0.1300	0.2100	**
Cis-1,2-dichloroethylene	ug/L	OW-114B	10/11/2016	ND	0.1300	0.2100	**
Cis-1,2-dichloroethylene	ug/L	OW-114B	12/12/2016	ND	0.1300	0.2100	**
Cis-1,2-dichloroethylene	ug/L	OW-114B	04/06/2017	ND	0.1300	0.2100	**
Cis-1,2-dichloroethylene	ug/L	OW-114B	09/27/2017		0.1530		
Cis-1,2-dichloroethylene	ug/L	OW-114B	03/12/2018	ND	0.1300	0.2100	**
Cis-1,2-dichloroethylene	ug/L	OW-114B	09/20/2018		0.2960		
Cis-1,2-dichloroethylene	ug/L	OW-114B	03/27/2019	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	OW-114B	09/30/2019	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	OW-114B	03/30/2020	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	OW-114B	10/01/2020	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	OW-114B	03/26/2021	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	OW-114B	11/15/2021	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	OW-114B	05/11/2022	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	OW-114B	11/09/2022	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	OW-114B	04/18/2023	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	OW-114B	10/05/2023	ND	0.2100		
Cobalt	ug/L	OW-114B	03/18/2014		6.1500		
Cobalt	ug/L	OW-114B	08/25/2014		1.2400		
Cobalt	ug/L	OW-114B	03/12/2015		4.5000		
Cobalt	ug/L	OW-114B	08/27/2015		2.6500		
Cobalt	ug/L	OW-114B	03/28/2016		2.8200		
Cobalt	ug/L	OW-114B	10/11/2016		1.2100		
Cobalt	ug/L	OW-114B	12/12/2016		2.9000		
Cobalt	ug/L	OW-114B	04/06/2017		2.8600		
Cobalt	ug/L	OW-114B	09/27/2017		3.3800		
Cobalt	ug/L	OW-114B	03/12/2018		3.5300		
Cobalt	ug/L	OW-114B	09/20/2018		0.4470		
Cobalt	ug/L	OW-114B	03/27/2019		1.4500		
Cobalt	ug/L	OW-114B	09/30/2019		1.8700		
Cobalt	ug/L	OW-114B	03/30/2020		1.9400		
Cobalt	ug/L	OW-114B	10/01/2020		1.4300		
Cobalt	ug/L	OW-114B	03/26/2021		0.8420		

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Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Cobalt	ug/L	OW-114B	11/15/2021		2.8500		
Cobalt	ug/L	OW-114B	05/11/2022		1.3400		
Cobalt	ug/L	OW-114B	11/09/2022		1.9500		
Cobalt	ug/L	OW-114B	04/18/2023		0.7530		
Cobalt	ug/L	OW-114B	10/05/2023		2.9200		
Copper	ug/L	OW-114B	03/18/2014		2.7900		
Copper	ug/L	OW-114B	08/25/2014		2.7400		
Copper	ug/L	OW-114B	03/12/2015	ND	0.4850		*
Copper	ug/L	OW-114B	08/27/2015		1.3600		
Copper	ug/L	OW-114B	03/28/2016		2.5100		
Copper	ug/L	OW-114B	10/11/2016	ND	1.2200	1.8000	**
Copper	ug/L	OW-114B	12/12/2016		2.0000		
Copper	ug/L	OW-114B	04/06/2017	ND	2.1900	1.8000	**
Copper	ug/L	OW-114B	09/27/2017	ND	2.1900	1.8000	**
Copper	ug/L	OW-114B	03/12/2018	ND	2.1900	1.8000	**
Copper	ug/L	OW-114B	09/20/2018		4.3000		
Copper	ug/L	OW-114B	03/27/2019	ND	2.0000	1.8000	**
Copper	ug/L	OW-114B	09/30/2019	ND	2.0000	1.8000	**
Copper	ug/L	OW-114B	03/30/2020	ND	3.2000	1.8000	**
Copper	ug/L	OW-114B	10/01/2020	ND	1.5000	1.8000	**
Copper	ug/L	OW-114B	03/26/2021	ND	1.4000	1.8000	**
Copper	ug/L	OW-114B	11/15/2021	ND	1.4000	1.8000	**
Copper	ug/L	OW-114B	05/11/2022	ND	1.8000		
Copper	ug/L	OW-114B	11/09/2022	ND	1.8000		
Copper	ug/L	OW-114B	04/18/2023	ND	1.8000		
Copper	ug/L	OW-114B	10/05/2023	ND	1.8000		
Lead	ug/L	OW-114B	03/18/2014		0.2710		
Lead	ug/L	OW-114B	08/25/2014		0.1760		
Lead	ug/L	OW-114B	03/12/2015		0.1460		
Lead	ug/L	OW-114B	08/27/2015	ND	0.0967	0.2400	**
Lead	ug/L	OW-114B	03/28/2016	ND	0.2110	0.2400	**
Lead	ug/L	OW-114B	10/11/2016	ND	0.2110	0.2400	**
Lead	ug/L	OW-114B	12/12/2016	ND	0.2110	0.2400	**
Lead	ug/L	OW-114B	04/06/2017	ND	0.3240	0.2400	**
Lead	ug/L	OW-114B	09/27/2017		0.9790		*
Lead	ug/L	OW-114B	03/12/2018	ND	0.3240	0.2400	**
Lead	ug/L	OW-114B	09/20/2018	ND	0.2500	0.2400	**
Lead	ug/L	OW-114B	03/27/2019	ND	0.2700	0.2400	**
Lead	ug/L	OW-114B	09/30/2019	ND	0.2700	0.2400	**
Lead	ug/L	OW-114B	03/30/2020	ND	0.2700	0.2400	**
Lead	ug/L	OW-114B	10/01/2020	ND	0.1100	0.2400	**
Lead	ug/L	OW-114B	03/26/2021	ND	0.2100	0.2400	**
Lead	ug/L	OW-114B	11/15/2021	ND	0.2100	0.2400	**
Lead	ug/L	OW-114B	05/11/2022	ND	0.2400		
Lead	ug/L	OW-114B	11/09/2022	ND	0.2400		
Lead	ug/L	OW-114B	04/18/2023	ND	0.2400		
Lead	ug/L	OW-114B	10/05/2023	ND	0.2400		
Mercury	ug/L	OW-114B	03/18/2014	ND	0.0710	0.1000	**
Mercury	ug/L	OW-114B	08/27/2015	ND	0.0926	0.1000	**
Mercury	ug/L	OW-114B	10/11/2016	ND	0.1420	0.1000	**
Mercury	ug/L	OW-114B	09/27/2017	ND	0.1120	0.1000	**
Mercury	ug/L	OW-114B	09/20/2018	ND	0.1500	0.1000	**
Mercury	ug/L	OW-114B	09/30/2019	ND	0.1000		
Mercury	ug/L	OW-114B	10/01/2020	ND	0.1000		
Nickel	ug/L	OW-114B	03/18/2014		29.8000		
Nickel	ug/L	OW-114B	08/25/2014		11.6000		
Nickel	ug/L	OW-114B	03/12/2015		23.2000		
Nickel	ug/L	OW-114B	08/27/2015		13.8000		
Nickel	ug/L	OW-114B	03/28/2016		9.2500		
Nickel	ug/L	OW-114B	10/11/2016		1.9900		
Nickel	ug/L	OW-114B	12/12/2016		22.1000		
Nickel	ug/L	OW-114B	04/06/2017		12.2000		
Nickel	ug/L	OW-114B	09/27/2017		15.3000		

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Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Nickel	ug/L	OW-114B	03/12/2018		17.0000		
Nickel	ug/L	OW-114B	09/20/2018	ND	3.0000	1.9000	**
Nickel	ug/L	OW-114B	03/27/2019		7.1700		
Nickel	ug/L	OW-114B	09/30/2019		10.5000		
Nickel	ug/L	OW-114B	03/30/2020		8.6900		
Nickel	ug/L	OW-114B	10/01/2020		9.3200		
Nickel	ug/L	OW-114B	03/26/2021		6.8500		
Nickel	ug/L	OW-114B	11/15/2021		12.8000		
Nickel	ug/L	OW-114B	05/11/2022		10.3000		
Nickel	ug/L	OW-114B	11/09/2022		19.9000		
Nickel	ug/L	OW-114B	04/18/2023		12.0000		
Nickel	ug/L	OW-114B	10/05/2023		16.2000		
Selenium	ug/L	OW-114B	03/18/2014	ND	0.7000	0.9600	**
Selenium	ug/L	OW-114B	08/25/2014	ND	3.3400	0.9600	**
Selenium	ug/L	OW-114B	03/12/2015	ND	3.3400	0.9600	**
Selenium	ug/L	OW-114B	08/27/2015	ND	3.3400	0.9600	**
Selenium	ug/L	OW-114B	03/28/2016	ND	0.6300	0.9600	**
Selenium	ug/L	OW-114B	10/11/2016	ND	0.6300	0.9600	**
Selenium	ug/L	OW-114B	12/12/2016	ND	0.6300	0.9600	**
Selenium	ug/L	OW-114B	04/06/2017	ND	0.9280	0.9600	**
Selenium	ug/L	OW-114B	09/27/2017	ND	0.9280	0.9600	**
Selenium	ug/L	OW-114B	03/12/2018	ND	0.9280	0.9600	**
Selenium	ug/L	OW-114B	09/20/2018		0.9890		
Selenium	ug/L	OW-114B	03/27/2019	ND	1.0000	0.9600	**
Selenium	ug/L	OW-114B	09/30/2019	ND	1.0000	0.9600	**
Selenium	ug/L	OW-114B	03/30/2020	ND	1.0000	0.9600	**
Selenium	ug/L	OW-114B	10/01/2020	ND	1.0000	0.9600	**
Selenium	ug/L	OW-114B	03/26/2021	ND	0.9600		
Selenium	ug/L	OW-114B	11/15/2021	ND	0.9600		
Selenium	ug/L	OW-114B	05/11/2022	ND	0.9600		
Selenium	ug/L	OW-114B	11/09/2022	ND	0.9600		
Selenium	ug/L	OW-114B	04/18/2023	ND	1.4000	0.9600	**
Selenium	ug/L	OW-114B	10/05/2023	ND	1.4000	0.9600	**
Silver	ug/L	OW-114B	03/18/2014	ND	0.0330	0.3700	**
Silver	ug/L	OW-114B	08/25/2014	ND	0.0420	0.3700	**
Silver	ug/L	OW-114B	03/12/2015	ND	0.0420	0.3700	**
Silver	ug/L	OW-114B	08/27/2015	ND	0.0420	0.3700	**
Silver	ug/L	OW-114B	03/28/2016		0.1900		
Silver	ug/L	OW-114B	10/11/2016	ND	0.1530	0.3700	**
Silver	ug/L	OW-114B	12/12/2016	ND	0.1530	0.3700	**
Silver	ug/L	OW-114B	04/06/2017	ND	0.1400	0.3700	**
Silver	ug/L	OW-114B	09/27/2017	ND	0.1400	0.3700	**
Silver	ug/L	OW-114B	03/12/2018	ND	0.1400	0.3700	**
Silver	ug/L	OW-114B	09/20/2018	ND	0.3000	0.3700	**
Silver	ug/L	OW-114B	03/27/2019	ND	0.3700		
Silver	ug/L	OW-114B	09/30/2019	ND	0.3700		
Silver	ug/L	OW-114B	03/30/2020	ND	0.3700		
Silver	ug/L	OW-114B	10/01/2020	ND	0.3700		
Silver	ug/L	OW-114B	03/26/2021	ND	0.4200	0.3700	**
Silver	ug/L	OW-114B	11/15/2021	ND	0.4200	0.3700	**
Silver	ug/L	OW-114B	05/11/2022	ND	0.4900	0.3700	**
Silver	ug/L	OW-114B	11/09/2022	ND	0.4900	0.3700	**
Silver	ug/L	OW-114B	04/18/2023	ND	0.5000	0.3700	**
Silver	ug/L	OW-114B	10/05/2023	ND	0.5000	0.3700	**
Thallium	ug/L	OW-114B	03/18/2014		0.0513		
Thallium	ug/L	OW-114B	08/25/2014	ND	0.0325	0.2600	**
Thallium	ug/L	OW-114B	03/12/2015	ND	0.0325	0.2600	**
Thallium	ug/L	OW-114B	08/27/2015	ND	0.0325	0.2600	**
Thallium	ug/L	OW-114B	03/28/2016		0.0360		
Thallium	ug/L	OW-114B	10/11/2016		0.1510		
Thallium	ug/L	OW-114B	12/12/2016	ND	0.0255	0.2600	**
Thallium	ug/L	OW-114B	04/06/2017	ND	0.0644	0.2600	**
Thallium	ug/L	OW-114B	09/27/2017	ND	0.0644	0.2600	**

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*** - ND value replaced with manual RL.
ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Thallium	ug/L	OW-114B	03/12/2018		0.1290		
Thallium	ug/L	OW-114B	09/20/2018	ND	0.1700	0.2600	**
Thallium	ug/L	OW-114B	03/27/2019	ND	0.2700	0.2600	**
Thallium	ug/L	OW-114B	09/30/2019	ND	0.2700	0.2600	**
Thallium	ug/L	OW-114B	03/30/2020	ND	0.2600		
Thallium	ug/L	OW-114B	10/01/2020	ND	0.2600		
Thallium	ug/L	OW-114B	03/26/2021	ND	0.2600		
Thallium	ug/L	OW-114B	11/15/2021	ND	0.2600		
Thallium	ug/L	OW-114B	05/11/2022	ND	0.2600		
Thallium	ug/L	OW-114B	11/09/2022	ND	0.2600		
Thallium	ug/L	OW-114B	04/18/2023	ND	0.2600		
Thallium	ug/L	OW-114B	10/05/2023	ND	0.2600		
Vanadium	ug/L	OW-114B	03/18/2014	ND	0.5000	1.1000	**
Vanadium	ug/L	OW-114B	08/25/2014	ND	0.4490	1.1000	**
Vanadium	ug/L	OW-114B	03/12/2015	ND	0.4490	1.1000	**
Vanadium	ug/L	OW-114B	08/27/2015	ND	0.4490	1.1000	**
Vanadium	ug/L	OW-114B	03/28/2016	ND	0.2550	1.1000	**
Vanadium	ug/L	OW-114B	10/11/2016	ND	0.2550	1.1000	**
Vanadium	ug/L	OW-114B	12/12/2016	ND	0.2550	1.1000	**
Vanadium	ug/L	OW-114B	04/06/2017	ND	0.8400	1.1000	**
Vanadium	ug/L	OW-114B	09/27/2017	ND	0.8400	1.1000	**
Vanadium	ug/L	OW-114B	03/12/2018	ND	0.8400	1.1000	**
Vanadium	ug/L	OW-114B	09/20/2018	ND	0.5200	1.1000	**
Vanadium	ug/L	OW-114B	03/27/2019	ND	0.8200	1.1000	**
Vanadium	ug/L	OW-114B	09/30/2019	ND	0.8200	1.1000	**
Vanadium	ug/L	OW-114B	03/30/2020	ND	0.8200	1.1000	**
Vanadium	ug/L	OW-114B	10/01/2020	ND	0.8500	1.1000	**
Vanadium	ug/L	OW-114B	03/26/2021	ND	1.1000		
Vanadium	ug/L	OW-114B	11/15/2021	ND	1.1000		
Vanadium	ug/L	OW-114B	05/11/2022	ND	1.1000		
Vanadium	ug/L	OW-114B	11/09/2022	ND	1.1000		
Vanadium	ug/L	OW-114B	04/18/2023	ND	1.1000		
Vanadium	ug/L	OW-114B	10/05/2023	ND	1.1000		
Vinyl chloride	ug/L	OW-114B	03/18/2014	ND	0.1000	0.1800	**
Vinyl chloride	ug/L	OW-114B	08/25/2014	ND	0.1000	0.1800	**
Vinyl chloride	ug/L	OW-114B	03/12/2015	ND	0.1000	0.1800	**
Vinyl chloride	ug/L	OW-114B	08/27/2015	ND	0.1000	0.1800	**
Vinyl chloride	ug/L	OW-114B	03/28/2016	ND	0.1000	0.1800	**
Vinyl chloride	ug/L	OW-114B	10/11/2016	ND	0.1000	0.1800	**
Vinyl chloride	ug/L	OW-114B	12/12/2016	ND	0.1000	0.1800	**
Vinyl chloride	ug/L	OW-114B	04/06/2017	ND	0.1000	0.1800	**
Vinyl chloride	ug/L	OW-114B	09/27/2017	ND	0.1000	0.1800	**
Vinyl chloride	ug/L	OW-114B	03/12/2018	ND	0.1000	0.1800	**
Vinyl chloride	ug/L	OW-114B	09/20/2018	ND	0.6000		*
Vinyl chloride	ug/L	OW-114B	03/27/2019	ND	0.6000		*
Vinyl chloride	ug/L	OW-114B	09/30/2019	ND	0.1800		
Vinyl chloride	ug/L	OW-114B	03/30/2020	ND	0.1800		
Vinyl chloride	ug/L	OW-114B	10/01/2020	ND	0.1800		
Vinyl chloride	ug/L	OW-114B	03/26/2021	ND	0.1800		
Vinyl chloride	ug/L	OW-114B	11/15/2021	ND	0.1800		
Vinyl chloride	ug/L	OW-114B	05/11/2022	ND	0.1800		
Vinyl chloride	ug/L	OW-114B	11/09/2022	ND	0.1800		
Vinyl chloride	ug/L	OW-114B	04/18/2023	ND	0.1800		
Vinyl chloride	ug/L	OW-114B	10/05/2023	ND	0.1800		
Zinc	ug/L	OW-114B	03/18/2014		12.2000		
Zinc	ug/L	OW-114B	08/25/2014	ND	6.9500	10.0000	**
Zinc	ug/L	OW-114B	03/12/2015	ND	6.9500	10.0000	**
Zinc	ug/L	OW-114B	08/27/2015	ND	6.9500	10.0000	**
Zinc	ug/L	OW-114B	03/28/2016		28.4000		
Zinc	ug/L	OW-114B	10/11/2016		6.0300		
Zinc	ug/L	OW-114B	12/12/2016	ND	5.2100	10.0000	**
Zinc	ug/L	OW-114B	04/06/2017	ND	11.5000	10.0000	**
Zinc	ug/L	OW-114B	09/27/2017	ND	11.5000	10.0000	**

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Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Zinc	ug/L	OW-114B	03/12/2018	ND	11.5000	10.0000	**
Zinc	ug/L	OW-114B	09/20/2018	ND	10.0000		
Zinc	ug/L	OW-114B	03/27/2019	ND	10.0000		
Zinc	ug/L	OW-114B	09/30/2019	ND	10.0000		
Zinc	ug/L	OW-114B	03/30/2020	ND	10.0000		
Zinc	ug/L	OW-114B	10/01/2020	ND	10.0000		
Zinc	ug/L	OW-114B	03/26/2021	ND	10.0000		
Zinc	ug/L	OW-114B	11/15/2021	ND	10.0000		
Zinc	ug/L	OW-114B	05/11/2022	ND	10.0000		
Zinc	ug/L	OW-114B	11/09/2022	ND	10.0000		
Zinc	ug/L	OW-114B	04/18/2023	ND	6.4000	10.0000	**
Zinc	ug/L	OW-114B	10/05/2023	ND	6.4000	10.0000	**
1,4-dichlorobenzene	ug/L	OW-213BR	03/25/2020	ND	0.2300		
1,4-dichlorobenzene	ug/L	OW-213BR	08/05/2020	ND	0.2300		
1,4-dichlorobenzene	ug/L	OW-213BR	09/17/2020	ND	0.2300		
1,4-dichlorobenzene	ug/L	OW-213BR	12/09/2020	ND	0.2300		
1,4-dichlorobenzene	ug/L	OW-213BR	03/26/2021	ND	0.2300		
1,4-dichlorobenzene	ug/L	OW-213BR	11/15/2021	ND	0.2300		
1,4-dichlorobenzene	ug/L	OW-213BR	04/27/2022	ND	0.2300		
1,4-dichlorobenzene	ug/L	OW-213BR	11/09/2022	ND	0.2300		
1,4-dichlorobenzene	ug/L	OW-213BR	01/25/2023	ND	0.2300		
1,4-dichlorobenzene	ug/L	OW-213BR	03/24/2023	ND	0.2300		
Antimony	ug/L	OW-213BR	03/25/2020	ND	0.5800	0.6900	**
Antimony	ug/L	OW-213BR	08/05/2020	ND	0.5100	0.6900	**
Antimony	ug/L	OW-213BR	09/17/2020	ND	0.5100	0.6900	**
Antimony	ug/L	OW-213BR	12/09/2020	ND	0.5100	0.6900	**
Antimony	ug/L	OW-213BR	03/26/2021	ND	1.1000	0.6900	**
Antimony	ug/L	OW-213BR	11/15/2021	ND	1.1000	0.6900	**
Antimony	ug/L	OW-213BR	04/27/2022	ND	0.6900		
Antimony	ug/L	OW-213BR	11/09/2022	ND	0.6900		
Antimony	ug/L	OW-213BR	01/25/2023	ND	0.6900		
Antimony	ug/L	OW-213BR	03/24/2023	ND	0.6900		
Arsenic	ug/L	OW-213BR	03/25/2020	ND	0.8800	0.7500	**
Arsenic	ug/L	OW-213BR	08/05/2020	ND	0.8800	0.7500	**
Arsenic	ug/L	OW-213BR	09/17/2020	ND	0.8800	0.7500	**
Arsenic	ug/L	OW-213BR	12/09/2020	ND	0.8800	0.7500	**
Arsenic	ug/L	OW-213BR	03/26/2021	ND	0.7500		
Arsenic	ug/L	OW-213BR	11/15/2021	ND	0.7500		
Arsenic	ug/L	OW-213BR	04/27/2022	ND	0.7500		
Arsenic	ug/L	OW-213BR	11/09/2022	ND	0.7500		
Arsenic	ug/L	OW-213BR	01/25/2023	ND	0.7500		
Arsenic	ug/L	OW-213BR	03/24/2023	ND	0.7500		
Barium	ug/L	OW-213BR	03/25/2020		77.9000		
Barium	ug/L	OW-213BR	08/05/2020		82.3000		
Barium	ug/L	OW-213BR	09/17/2020		82.1000		
Barium	ug/L	OW-213BR	12/09/2020		84.0000		
Barium	ug/L	OW-213BR	03/26/2021		73.7000		
Barium	ug/L	OW-213BR	11/15/2021		72.4000		
Barium	ug/L	OW-213BR	04/27/2022		53.3000		
Barium	ug/L	OW-213BR	11/09/2022		66.7000		
Barium	ug/L	OW-213BR	01/25/2023		62.8000		
Barium	ug/L	OW-213BR	03/24/2023		57.9000		
Benzene	ug/L	OW-213BR	03/25/2020	ND	0.2200		
Benzene	ug/L	OW-213BR	08/05/2020	ND	0.2200		
Benzene	ug/L	OW-213BR	09/17/2020	ND	0.2200		
Benzene	ug/L	OW-213BR	12/09/2020	ND	0.2200		
Benzene	ug/L	OW-213BR	03/26/2021	ND	0.2200		
Benzene	ug/L	OW-213BR	11/15/2021	ND	0.2200		
Benzene	ug/L	OW-213BR	04/27/2022	ND	0.2200		
Benzene	ug/L	OW-213BR	11/09/2022	ND	0.2200		
Benzene	ug/L	OW-213BR	01/25/2023	ND	0.2200		
Benzene	ug/L	OW-213BR	03/24/2023	ND	0.2200		
Beryllium	ug/L	OW-213BR	03/25/2020	ND	0.2700		

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Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Beryllium	ug/L	OW-213BR	08/05/2020	ND	0.2700		
Beryllium	ug/L	OW-213BR	09/17/2020	ND	0.2700		
Beryllium	ug/L	OW-213BR	12/09/2020	ND	0.2700		
Beryllium	ug/L	OW-213BR	03/26/2021	ND	0.2700		
Beryllium	ug/L	OW-213BR	11/15/2021	ND	0.2700		
Beryllium	ug/L	OW-213BR	04/27/2022	ND	0.2700		
Beryllium	ug/L	OW-213BR	11/09/2022	ND	0.2700		
Beryllium	ug/L	OW-213BR	01/25/2023	ND	0.2700		
Beryllium	ug/L	OW-213BR	03/24/2023	ND	0.2700		
Cadmium	ug/L	OW-213BR	03/25/2020	ND	0.0390	0.0550	**
Cadmium	ug/L	OW-213BR	08/05/2020	ND	0.0490	0.0550	**
Cadmium	ug/L	OW-213BR	09/17/2020		0.1180		
Cadmium	ug/L	OW-213BR	12/09/2020		0.2460		
Cadmium	ug/L	OW-213BR	03/26/2021	ND	0.0510	0.0550	**
Cadmium	ug/L	OW-213BR	11/15/2021	ND	0.0510	0.0550	**
Cadmium	ug/L	OW-213BR	04/27/2022	ND	0.0550		
Cadmium	ug/L	OW-213BR	11/09/2022	ND	0.0550		
Cadmium	ug/L	OW-213BR	01/25/2023	ND	0.0550		
Cadmium	ug/L	OW-213BR	03/24/2023	ND	0.0550		
Chromium	ug/L	OW-213BR	03/25/2020	ND	1.1000		
Chromium	ug/L	OW-213BR	08/05/2020	ND	1.1000		
Chromium	ug/L	OW-213BR	09/17/2020	ND	1.1000		
Chromium	ug/L	OW-213BR	12/09/2020	ND	1.1000		
Chromium	ug/L	OW-213BR	03/26/2021	ND	1.1000		
Chromium	ug/L	OW-213BR	11/15/2021	ND	1.1000		
Chromium	ug/L	OW-213BR	04/27/2022	ND	1.1000		
Chromium	ug/L	OW-213BR	11/09/2022	ND	1.1000		
Chromium	ug/L	OW-213BR	01/25/2023	ND	1.1000		
Chromium	ug/L	OW-213BR	03/24/2023	ND	1.1000		
Cis-1,2-dichloroethylene	ug/L	OW-213BR	03/25/2020	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	OW-213BR	08/05/2020	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	OW-213BR	09/17/2020	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	OW-213BR	12/09/2020	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	OW-213BR	03/26/2021	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	OW-213BR	11/15/2021	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	OW-213BR	04/27/2022	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	OW-213BR	11/09/2022	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	OW-213BR	01/25/2023	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	OW-213BR	03/24/2023	ND	0.2100		
Cobalt	ug/L	OW-213BR	03/25/2020	ND	0.0910	0.1900	**
Cobalt	ug/L	OW-213BR	08/05/2020	ND	0.0910	0.1900	**
Cobalt	ug/L	OW-213BR	09/17/2020		0.5440		
Cobalt	ug/L	OW-213BR	12/09/2020		0.5040		
Cobalt	ug/L	OW-213BR	03/26/2021	ND	0.0910	0.1900	**
Cobalt	ug/L	OW-213BR	11/15/2021	ND	0.1900		
Cobalt	ug/L	OW-213BR	04/27/2022	ND	0.1900		
Cobalt	ug/L	OW-213BR	11/09/2022	ND	0.1900		
Cobalt	ug/L	OW-213BR	01/25/2023	ND	0.1900		
Cobalt	ug/L	OW-213BR	03/24/2023	ND	0.1900		
Copper	ug/L	OW-213BR	03/25/2020	ND	3.2000	1.8000	**
Copper	ug/L	OW-213BR	08/05/2020	ND	1.5000	1.8000	**
Copper	ug/L	OW-213BR	09/17/2020	ND	1.5000	1.8000	**
Copper	ug/L	OW-213BR	12/09/2020	ND	1.5000	1.8000	**
Copper	ug/L	OW-213BR	03/26/2021	ND	1.4000	1.8000	**
Copper	ug/L	OW-213BR	11/15/2021	ND	1.4000	1.8000	**
Copper	ug/L	OW-213BR	04/27/2022	ND	1.8000		
Copper	ug/L	OW-213BR	11/09/2022	ND	1.8000		
Copper	ug/L	OW-213BR	01/25/2023	ND	1.8000		
Copper	ug/L	OW-213BR	03/24/2023	ND	1.8000		
Lead	ug/L	OW-213BR	03/25/2020	ND	0.2700	0.2400	**
Lead	ug/L	OW-213BR	08/05/2020	ND	0.1100	0.2400	**
Lead	ug/L	OW-213BR	09/17/2020	ND	0.1100	0.2400	**
Lead	ug/L	OW-213BR	12/09/2020	ND	0.1100	0.2400	**

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Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Lead	ug/L	OW-213BR	03/26/2021	ND	0.2100	0.2400	**
Lead	ug/L	OW-213BR	11/15/2021	ND	0.2100	0.2400	**
Lead	ug/L	OW-213BR	04/27/2022	ND	0.2400		
Lead	ug/L	OW-213BR	11/09/2022	ND	0.2400		
Lead	ug/L	OW-213BR	01/25/2023	ND	0.2400		
Lead	ug/L	OW-213BR	03/24/2023	ND	0.2400		
Nickel	ug/L	OW-213BR	03/25/2020		5.6900		
Nickel	ug/L	OW-213BR	08/05/2020		5.3500		
Nickel	ug/L	OW-213BR	09/17/2020		6.0600		
Nickel	ug/L	OW-213BR	12/09/2020		7.2100		
Nickel	ug/L	OW-213BR	03/26/2021	ND	1.9000		
Nickel	ug/L	OW-213BR	11/15/2021		5.3500		
Nickel	ug/L	OW-213BR	04/27/2022	ND	1.9000		
Nickel	ug/L	OW-213BR	11/09/2022	ND	1.9000		
Nickel	ug/L	OW-213BR	01/25/2023	ND	1.9000		
Nickel	ug/L	OW-213BR	03/24/2023	ND	1.9000		
Selenium	ug/L	OW-213BR	03/25/2020	ND	1.0000	0.9600	**
Selenium	ug/L	OW-213BR	08/05/2020	ND	1.0000	0.9600	**
Selenium	ug/L	OW-213BR	09/17/2020	ND	1.0000	0.9600	**
Selenium	ug/L	OW-213BR	12/09/2020	ND	1.0000	0.9600	**
Selenium	ug/L	OW-213BR	03/26/2021	ND	0.9600		
Selenium	ug/L	OW-213BR	11/15/2021	ND	0.9600		
Selenium	ug/L	OW-213BR	04/27/2022	ND	0.9600		
Selenium	ug/L	OW-213BR	11/09/2022	ND	0.9600		
Selenium	ug/L	OW-213BR	01/25/2023	ND	0.9600		
Selenium	ug/L	OW-213BR	03/24/2023	ND	0.9600		
Silver	ug/L	OW-213BR	03/25/2020	ND	0.3700		
Silver	ug/L	OW-213BR	08/05/2020	ND	0.3700		
Silver	ug/L	OW-213BR	09/17/2020	ND	0.3700		
Silver	ug/L	OW-213BR	12/09/2020	ND	0.3700		
Silver	ug/L	OW-213BR	03/26/2021	ND	0.4200	0.3700	**
Silver	ug/L	OW-213BR	11/15/2021	ND	0.4200	0.3700	**
Silver	ug/L	OW-213BR	04/27/2022	ND	0.4900	0.3700	**
Silver	ug/L	OW-213BR	11/09/2022	ND	0.4900	0.3700	**
Silver	ug/L	OW-213BR	01/25/2023	ND	0.4900	0.3700	**
Silver	ug/L	OW-213BR	03/24/2023	ND	0.4900	0.3700	**
Thallium	ug/L	OW-213BR	03/25/2020	ND	0.2600		
Thallium	ug/L	OW-213BR	08/05/2020	ND	0.2600		
Thallium	ug/L	OW-213BR	09/17/2020	ND	0.2600		
Thallium	ug/L	OW-213BR	12/09/2020	ND	0.2600		
Thallium	ug/L	OW-213BR	03/26/2021	ND	0.2600		
Thallium	ug/L	OW-213BR	11/15/2021	ND	0.2600		
Thallium	ug/L	OW-213BR	04/27/2022	ND	0.2600		
Thallium	ug/L	OW-213BR	11/09/2022	ND	0.2600		
Thallium	ug/L	OW-213BR	01/25/2023	ND	0.2600		
Thallium	ug/L	OW-213BR	03/24/2023	ND	0.2600		
Vanadium	ug/L	OW-213BR	03/25/2020	ND	0.8200	1.1000	**
Vanadium	ug/L	OW-213BR	08/05/2020	ND	0.8500	1.1000	**
Vanadium	ug/L	OW-213BR	09/17/2020	ND	0.8500	1.1000	**
Vanadium	ug/L	OW-213BR	12/09/2020	ND	0.8500	1.1000	**
Vanadium	ug/L	OW-213BR	03/26/2021	ND	1.1000		
Vanadium	ug/L	OW-213BR	11/15/2021	ND	1.1000		
Vanadium	ug/L	OW-213BR	04/27/2022	ND	1.1000		
Vanadium	ug/L	OW-213BR	11/09/2022	ND	1.1000		
Vanadium	ug/L	OW-213BR	01/25/2023	ND	1.1000		
Vanadium	ug/L	OW-213BR	03/24/2023	ND	1.1000		
Vinyl chloride	ug/L	OW-213BR	03/25/2020	ND	0.1800		
Vinyl chloride	ug/L	OW-213BR	08/05/2020	ND	0.1800		
Vinyl chloride	ug/L	OW-213BR	09/17/2020	ND	0.1800		
Vinyl chloride	ug/L	OW-213BR	12/09/2020	ND	0.1800		
Vinyl chloride	ug/L	OW-213BR	03/26/2021	ND	0.1800		
Vinyl chloride	ug/L	OW-213BR	11/15/2021	ND	0.1800		
Vinyl chloride	ug/L	OW-213BR	04/27/2022	ND	0.1800		

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Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Vinyl chloride	ug/L	OW-213BR	11/09/2022	ND	0.1800		
Vinyl chloride	ug/L	OW-213BR	01/25/2023	ND	0.1800		
Vinyl chloride	ug/L	OW-213BR	03/24/2023	ND	0.1800		
Zinc	ug/L	OW-213BR	03/25/2020	ND	10.0000		
Zinc	ug/L	OW-213BR	08/05/2020	ND	10.0000		
Zinc	ug/L	OW-213BR	09/17/2020	ND	10.0000		
Zinc	ug/L	OW-213BR	12/09/2020	ND	10.0000		
Zinc	ug/L	OW-213BR	03/26/2021	ND	10.0000		
Zinc	ug/L	OW-213BR	11/15/2021	ND	10.0000		
Zinc	ug/L	OW-213BR	04/27/2022	ND	10.0000		
Zinc	ug/L	OW-213BR	11/09/2022	ND	10.0000		
Zinc	ug/L	OW-213BR	01/25/2023	ND	10.0000		
Zinc	ug/L	OW-213BR	03/24/2023	ND	10.0000		
1,4-dichlorobenzene	ug/L	OW-216B	03/21/2014	ND	0.2000	0.2300	**
1,4-dichlorobenzene	ug/L	OW-216B	09/05/2014	ND	0.2000	0.2300	**
1,4-dichlorobenzene	ug/L	OW-216B	03/06/2015	ND	0.2000	0.2300	**
1,4-dichlorobenzene	ug/L	OW-216B	09/01/2015	ND	0.2000	0.2300	**
1,4-dichlorobenzene	ug/L	OW-216B	03/10/2016	ND	0.2000	0.2300	**
1,4-dichlorobenzene	ug/L	OW-216B	09/14/2016	ND	0.2000	0.2300	**
1,4-dichlorobenzene	ug/L	OW-216B	03/23/2017	ND	0.2000	0.2300	**
1,4-dichlorobenzene	ug/L	OW-216B	09/19/2017	ND	0.2000	0.2300	**
1,4-dichlorobenzene	ug/L	OW-216B	03/27/2018		0.4270		
1,4-dichlorobenzene	ug/L	OW-216B	09/05/2018	ND	0.2300		
1,4-dichlorobenzene	ug/L	OW-216B	04/15/2019	ND	0.2300		
1,4-dichlorobenzene	ug/L	OW-216B	09/30/2019	ND	0.2300		
1,4-dichlorobenzene	ug/L	OW-216B	03/31/2020	ND	0.2300		
1,4-dichlorobenzene	ug/L	OW-216B	09/21/2020	ND	0.2300		
1,4-dichlorobenzene	ug/L	OW-216B	03/19/2021	ND	0.2300		
1,4-dichlorobenzene	ug/L	OW-216B	11/22/2021	ND	0.2300		
1,4-dichlorobenzene	ug/L	OW-216B	05/05/2022	ND	0.2300		
1,4-dichlorobenzene	ug/L	OW-216B	10/25/2022	ND	0.2300		
1,4-dichlorobenzene	ug/L	OW-216B	04/18/2023	ND	0.2300		
1,4-dichlorobenzene	ug/L	OW-216B	09/26/2023	ND	0.2300		
Antimony	ug/L	OW-216B	03/21/2014	ND	0.4000	0.6900	**
Antimony	ug/L	OW-216B	09/05/2014	ND	0.1610	0.6900	**
Antimony	ug/L	OW-216B	03/06/2015	ND	0.1610	0.6900	**
Antimony	ug/L	OW-216B	09/01/2015	ND	0.1610	0.6900	**
Antimony	ug/L	OW-216B	03/10/2016	ND	0.2370	0.6900	**
Antimony	ug/L	OW-216B	09/14/2016		0.2420		
Antimony	ug/L	OW-216B	03/23/2017	ND	0.1850	0.6900	**
Antimony	ug/L	OW-216B	09/19/2017	ND	0.1850	0.6900	**
Antimony	ug/L	OW-216B	03/27/2018	ND	0.4200	0.6900	**
Antimony	ug/L	OW-216B	09/05/2018	ND	0.4200	0.6900	**
Antimony	ug/L	OW-216B	04/15/2019	ND	0.5300	0.6900	**
Antimony	ug/L	OW-216B	09/30/2019	ND	0.5300	0.6900	**
Antimony	ug/L	OW-216B	03/31/2020	ND	0.5800	0.6900	**
Antimony	ug/L	OW-216B	09/21/2020	ND	0.5100	0.6900	**
Antimony	ug/L	OW-216B	03/19/2021	ND	1.1000	0.6900	**
Antimony	ug/L	OW-216B	11/22/2021	ND	1.1000	0.6900	**
Antimony	ug/L	OW-216B	05/05/2022	ND	0.6900		
Antimony	ug/L	OW-216B	10/25/2022	ND	0.6900		
Antimony	ug/L	OW-216B	04/18/2023	ND	1.0000	0.6900	**
Antimony	ug/L	OW-216B	09/26/2023	ND	1.0000	0.6900	**
Arsenic	ug/L	OW-216B	03/21/2014		0.6010		
Arsenic	ug/L	OW-216B	09/05/2014		0.9490		
Arsenic	ug/L	OW-216B	03/06/2015		1.4100		
Arsenic	ug/L	OW-216B	09/01/2015		1.4700		
Arsenic	ug/L	OW-216B	03/10/2016		1.1900		
Arsenic	ug/L	OW-216B	09/14/2016	ND	0.6720	0.7500	**
Arsenic	ug/L	OW-216B	03/23/2017		4.1800		
Arsenic	ug/L	OW-216B	09/19/2017		2.8000		
Arsenic	ug/L	OW-216B	03/27/2018	ND	0.5700	0.7500	**
Arsenic	ug/L	OW-216B	09/05/2018		0.8340		

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Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Arsenic	ug/L	OW-216B	04/15/2019	ND	0.7500		
Arsenic	ug/L	OW-216B	09/30/2019	ND	0.7500		
Arsenic	ug/L	OW-216B	03/31/2020	ND	0.8800	0.7500	**
Arsenic	ug/L	OW-216B	09/21/2020	ND	0.8800	0.7500	**
Arsenic	ug/L	OW-216B	03/19/2021	ND	0.7500		
Arsenic	ug/L	OW-216B	11/22/2021	ND	0.7500		
Arsenic	ug/L	OW-216B	05/05/2022	ND	0.7500		
Arsenic	ug/L	OW-216B	10/25/2022	ND	0.7500		
Arsenic	ug/L	OW-216B	04/18/2023	ND	0.5300	0.7500	**
Arsenic	ug/L	OW-216B	09/26/2023	ND	0.5300	0.7500	**
Barium	ug/L	OW-216B	03/21/2014		56.7000		
Barium	ug/L	OW-216B	09/05/2014		66.4000		
Barium	ug/L	OW-216B	03/06/2015		61.5000		
Barium	ug/L	OW-216B	09/01/2015		91.7000		
Barium	ug/L	OW-216B	03/10/2016		81.0000		
Barium	ug/L	OW-216B	09/14/2016		89.2000		
Barium	ug/L	OW-216B	03/23/2017		130.0000		
Barium	ug/L	OW-216B	09/19/2017		154.0000		
Barium	ug/L	OW-216B	03/27/2018		84.8000		
Barium	ug/L	OW-216B	09/05/2018		101.0000		
Barium	ug/L	OW-216B	04/15/2019		91.2000		
Barium	ug/L	OW-216B	09/30/2019		113.0000		
Barium	ug/L	OW-216B	03/31/2020		91.8000		
Barium	ug/L	OW-216B	09/21/2020		119.0000		
Barium	ug/L	OW-216B	03/19/2021		98.7000		
Barium	ug/L	OW-216B	11/22/2021		123.0000		
Barium	ug/L	OW-216B	05/05/2022		57.4000		
Barium	ug/L	OW-216B	10/25/2022		86.1000		
Barium	ug/L	OW-216B	04/18/2023		262.0000		
Barium	ug/L	OW-216B	09/26/2023		225.0000		
Benzene	ug/L	OW-216B	03/21/2014	ND	0.1100	0.2200	**
Benzene	ug/L	OW-216B	09/05/2014	ND	0.1100	0.2200	**
Benzene	ug/L	OW-216B	03/06/2015	ND	0.1100	0.2200	**
Benzene	ug/L	OW-216B	09/01/2015	ND	0.1100	0.2200	**
Benzene	ug/L	OW-216B	03/10/2016	ND	0.1100	0.2200	**
Benzene	ug/L	OW-216B	09/14/2016	ND	0.1100	0.2200	**
Benzene	ug/L	OW-216B	03/23/2017	ND	0.1100	0.2200	**
Benzene	ug/L	OW-216B	09/19/2017	ND	0.1100	0.2200	**
Benzene	ug/L	OW-216B	03/27/2018		0.7470		*
Benzene	ug/L	OW-216B	09/05/2018	ND	0.2200		
Benzene	ug/L	OW-216B	04/15/2019	ND	0.2200		
Benzene	ug/L	OW-216B	09/30/2019	ND	0.2200		
Benzene	ug/L	OW-216B	03/31/2020	ND	0.2200		
Benzene	ug/L	OW-216B	09/21/2020	ND	0.2200		
Benzene	ug/L	OW-216B	03/19/2021	ND	0.2200		
Benzene	ug/L	OW-216B	11/22/2021	ND	0.2200		
Benzene	ug/L	OW-216B	05/05/2022	ND	0.2200		
Benzene	ug/L	OW-216B	10/25/2022	ND	0.2200		
Benzene	ug/L	OW-216B	04/18/2023	ND	0.2200		
Benzene	ug/L	OW-216B	09/26/2023	ND	0.2200		
Beryllium	ug/L	OW-216B	03/21/2014	ND	0.0800	0.2700	**
Beryllium	ug/L	OW-216B	09/05/2014	ND	0.0390	0.2700	**
Beryllium	ug/L	OW-216B	03/06/2015	ND	0.0390	0.2700	**
Beryllium	ug/L	OW-216B	09/01/2015		0.0450		
Beryllium	ug/L	OW-216B	03/10/2016	ND	0.2210	0.2700	**
Beryllium	ug/L	OW-216B	09/14/2016	ND	0.2210	0.2700	**
Beryllium	ug/L	OW-216B	03/23/2017	ND	0.1250	0.2700	**
Beryllium	ug/L	OW-216B	09/19/2017	ND	0.1250	0.2700	**
Beryllium	ug/L	OW-216B	03/27/2018	ND	0.1900	0.2700	**
Beryllium	ug/L	OW-216B	09/05/2018	ND	0.1900	0.2700	**
Beryllium	ug/L	OW-216B	04/15/2019	ND	0.2700		
Beryllium	ug/L	OW-216B	09/30/2019	ND	0.2700		
Beryllium	ug/L	OW-216B	03/31/2020	ND	0.2700		

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Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Beryllium	ug/L	OW-216B	09/21/2020	ND	0.2700		
Beryllium	ug/L	OW-216B	03/19/2021	ND	0.2700		
Beryllium	ug/L	OW-216B	11/22/2021	ND	0.2700		
Beryllium	ug/L	OW-216B	05/05/2022	ND	0.2700		
Beryllium	ug/L	OW-216B	10/25/2022	ND	0.2700		
Beryllium	ug/L	OW-216B	04/18/2023	ND	0.3300	0.2700	**
Beryllium	ug/L	OW-216B	09/26/2023	ND	0.3300	0.2700	**
Cadmium	ug/L	OW-216B	03/21/2014	ND	0.1000	0.0550	**
Cadmium	ug/L	OW-216B	09/05/2014	ND	0.1120	0.0550	**
Cadmium	ug/L	OW-216B	03/06/2015	ND	0.1120	0.0550	**
Cadmium	ug/L	OW-216B	09/01/2015	ND	0.1120	0.0550	**
Cadmium	ug/L	OW-216B	03/10/2016	ND	0.0351	0.0550	**
Cadmium	ug/L	OW-216B	09/14/2016		0.0640		
Cadmium	ug/L	OW-216B	03/23/2017	ND	0.0441	0.0550	**
Cadmium	ug/L	OW-216B	09/19/2017	ND	0.0441	0.0550	**
Cadmium	ug/L	OW-216B	03/27/2018	ND	0.0600	0.0550	**
Cadmium	ug/L	OW-216B	09/05/2018	ND	0.0600	0.0550	**
Cadmium	ug/L	OW-216B	04/15/2019	ND	0.0770	0.0550	**
Cadmium	ug/L	OW-216B	09/30/2019	ND	0.0390	0.0550	**
Cadmium	ug/L	OW-216B	03/31/2020	ND	0.0390	0.0550	**
Cadmium	ug/L	OW-216B	09/21/2020	ND	0.0490	0.0550	**
Cadmium	ug/L	OW-216B	03/19/2021	ND	0.0510	0.0550	**
Cadmium	ug/L	OW-216B	11/22/2021	ND	0.0510	0.0550	**
Cadmium	ug/L	OW-216B	05/05/2022	ND	0.0550		
Cadmium	ug/L	OW-216B	10/25/2022	ND	0.0550		
Cadmium	ug/L	OW-216B	04/18/2023	ND	0.1000	0.0550	**
Cadmium	ug/L	OW-216B	09/26/2023	ND	0.1000	0.0550	**
Chromium	ug/L	OW-216B	03/21/2014		2.0700		
Chromium	ug/L	OW-216B	09/05/2014	ND	1.2400	1.1000	**
Chromium	ug/L	OW-216B	03/06/2015		1.8300		
Chromium	ug/L	OW-216B	09/01/2015	ND	1.2400	1.1000	**
Chromium	ug/L	OW-216B	03/10/2016	ND	0.3550	1.1000	**
Chromium	ug/L	OW-216B	09/14/2016	ND	0.3550	1.1000	**
Chromium	ug/L	OW-216B	03/23/2017	ND	0.7290	1.1000	**
Chromium	ug/L	OW-216B	09/19/2017	ND	0.7290	1.1000	**
Chromium	ug/L	OW-216B	03/27/2018		3.0000		
Chromium	ug/L	OW-216B	09/05/2018	ND	0.7600	1.1000	**
Chromium	ug/L	OW-216B	04/15/2019	ND	0.9800	1.1000	**
Chromium	ug/L	OW-216B	09/30/2019	ND	0.9800	1.1000	**
Chromium	ug/L	OW-216B	03/31/2020	ND	1.1000		
Chromium	ug/L	OW-216B	09/21/2020	ND	1.1000		
Chromium	ug/L	OW-216B	03/19/2021	ND	1.1000		
Chromium	ug/L	OW-216B	11/22/2021	ND	1.1000		
Chromium	ug/L	OW-216B	05/05/2022	ND	1.1000		
Chromium	ug/L	OW-216B	10/25/2022	ND	1.1000		
Chromium	ug/L	OW-216B	04/18/2023	ND	1.1000		
Chromium	ug/L	OW-216B	09/26/2023	ND	1.1000		
Cis-1,2-dichloroethylene	ug/L	OW-216B	03/21/2014	ND	0.1300	0.2100	**
Cis-1,2-dichloroethylene	ug/L	OW-216B	09/05/2014	ND	0.1300	0.2100	**
Cis-1,2-dichloroethylene	ug/L	OW-216B	03/06/2015	ND	0.1300	0.2100	**
Cis-1,2-dichloroethylene	ug/L	OW-216B	09/01/2015	ND	0.1300	0.2100	**
Cis-1,2-dichloroethylene	ug/L	OW-216B	03/10/2016	ND	0.1300	0.2100	**
Cis-1,2-dichloroethylene	ug/L	OW-216B	09/14/2016	ND	0.1300	0.2100	**
Cis-1,2-dichloroethylene	ug/L	OW-216B	03/23/2017	ND	0.1300	0.2100	**
Cis-1,2-dichloroethylene	ug/L	OW-216B	09/19/2017	ND	0.1300	0.2100	**
Cis-1,2-dichloroethylene	ug/L	OW-216B	03/27/2018	ND	0.1300	0.2100	**
Cis-1,2-dichloroethylene	ug/L	OW-216B	09/05/2018	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	OW-216B	04/15/2019	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	OW-216B	09/30/2019	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	OW-216B	03/31/2020	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	OW-216B	09/21/2020	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	OW-216B	03/19/2021	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	OW-216B	11/22/2021	ND	0.2100		

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Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Cis-1,2-dichloroethylene	ug/L	OW-216B	05/05/2022	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	OW-216B	10/25/2022	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	OW-216B	04/18/2023	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	OW-216B	09/26/2023	ND	0.2100		
Cobalt	ug/L	OW-216B	03/21/2014		1.5900		
Cobalt	ug/L	OW-216B	09/05/2014		6.7500		
Cobalt	ug/L	OW-216B	03/06/2015		4.0400		
Cobalt	ug/L	OW-216B	09/01/2015		4.2700		
Cobalt	ug/L	OW-216B	03/10/2016		4.3000		
Cobalt	ug/L	OW-216B	09/14/2016		0.1840		
Cobalt	ug/L	OW-216B	03/23/2017		2.0000		
Cobalt	ug/L	OW-216B	09/19/2017		0.8060		
Cobalt	ug/L	OW-216B	03/27/2018		0.3240		
Cobalt	ug/L	OW-216B	09/05/2018		2.1700		
Cobalt	ug/L	OW-216B	04/15/2019		3.2400		
Cobalt	ug/L	OW-216B	09/30/2019		1.6800		
Cobalt	ug/L	OW-216B	03/31/2020		2.8100		
Cobalt	ug/L	OW-216B	09/21/2020		1.0100		
Cobalt	ug/L	OW-216B	03/19/2021		1.8000		
Cobalt	ug/L	OW-216B	11/22/2021		0.5090		
Cobalt	ug/L	OW-216B	05/05/2022	ND	0.1900		
Cobalt	ug/L	OW-216B	10/25/2022	ND	0.1900		
Cobalt	ug/L	OW-216B	04/18/2023	ND	0.1700	0.1900	**
Cobalt	ug/L	OW-216B	09/26/2023	ND	0.1700	0.1900	**
Copper	ug/L	OW-216B	03/21/2014		2.5200		
Copper	ug/L	OW-216B	09/05/2014		0.6800		
Copper	ug/L	OW-216B	03/06/2015	ND	0.4850		*
Copper	ug/L	OW-216B	09/01/2015	ND	0.4850		*
Copper	ug/L	OW-216B	03/10/2016	ND	1.2200	1.8000	**
Copper	ug/L	OW-216B	09/14/2016	ND	1.2200	1.8000	**
Copper	ug/L	OW-216B	03/23/2017	ND	2.1900	1.8000	**
Copper	ug/L	OW-216B	09/19/2017	ND	2.1900	1.8000	**
Copper	ug/L	OW-216B	03/27/2018	ND	1.6000	1.8000	**
Copper	ug/L	OW-216B	09/05/2018	ND	1.6000	1.8000	**
Copper	ug/L	OW-216B	04/15/2019	ND	2.0000	1.8000	**
Copper	ug/L	OW-216B	09/30/2019	ND	2.0000	1.8000	**
Copper	ug/L	OW-216B	03/31/2020	ND	3.2000	1.8000	**
Copper	ug/L	OW-216B	09/21/2020	ND	1.5000	1.8000	**
Copper	ug/L	OW-216B	03/19/2021	ND	1.4000	1.8000	**
Copper	ug/L	OW-216B	11/22/2021	ND	1.4000	1.8000	**
Copper	ug/L	OW-216B	05/05/2022	ND	1.8000		
Copper	ug/L	OW-216B	10/25/2022	ND	1.8000		
Copper	ug/L	OW-216B	04/18/2023	ND	1.8000		
Copper	ug/L	OW-216B	09/26/2023	ND	1.8000		
Lead	ug/L	OW-216B	03/21/2014		0.3710		
Lead	ug/L	OW-216B	09/05/2014	ND	0.0967	0.2400	**
Lead	ug/L	OW-216B	03/06/2015	ND	0.0967	0.2400	**
Lead	ug/L	OW-216B	09/01/2015	ND	0.0967	0.2400	**
Lead	ug/L	OW-216B	03/10/2016	ND	0.2110	0.2400	**
Lead	ug/L	OW-216B	09/14/2016	ND	0.2110	0.2400	**
Lead	ug/L	OW-216B	03/23/2017	ND	0.3240	0.2400	**
Lead	ug/L	OW-216B	09/19/2017	ND	0.3240	0.2400	**
Lead	ug/L	OW-216B	03/27/2018	ND	0.2500	0.2400	**
Lead	ug/L	OW-216B	09/05/2018	ND	0.2500	0.2400	**
Lead	ug/L	OW-216B	04/15/2019	ND	0.2700	0.2400	**
Lead	ug/L	OW-216B	09/30/2019	ND	0.2700	0.2400	**
Lead	ug/L	OW-216B	03/31/2020	ND	0.2700	0.2400	**
Lead	ug/L	OW-216B	09/21/2020	ND	0.1100	0.2400	**
Lead	ug/L	OW-216B	03/19/2021	ND	0.2100	0.2400	**
Lead	ug/L	OW-216B	11/22/2021	ND	0.2100	0.2400	**
Lead	ug/L	OW-216B	05/05/2022	ND	0.2400		
Lead	ug/L	OW-216B	10/25/2022	ND	0.2400		
Lead	ug/L	OW-216B	04/18/2023	ND	0.2400		

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Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Lead	ug/L	OW-216B	09/26/2023	ND	0.2400		
Nickel	ug/L	OW-216B	03/21/2014		5.5900		
Nickel	ug/L	OW-216B	09/05/2014		12.4000		
Nickel	ug/L	OW-216B	03/06/2015		7.8700		
Nickel	ug/L	OW-216B	09/01/2015		8.6600		
Nickel	ug/L	OW-216B	03/10/2016		6.7100		
Nickel	ug/L	OW-216B	09/14/2016		2.6200		
Nickel	ug/L	OW-216B	03/23/2017		3.8100		
Nickel	ug/L	OW-216B	09/19/2017		3.6000		
Nickel	ug/L	OW-216B	03/27/2018		5.8500		
Nickel	ug/L	OW-216B	09/05/2018		6.2000		
Nickel	ug/L	OW-216B	04/15/2019		6.2800		
Nickel	ug/L	OW-216B	09/30/2019	ND	1.7000	1.9000	**
Nickel	ug/L	OW-216B	03/31/2020	ND	1.9000		
Nickel	ug/L	OW-216B	09/21/2020	ND	1.9000		
Nickel	ug/L	OW-216B	03/19/2021	ND	1.9000		
Nickel	ug/L	OW-216B	11/22/2021	ND	1.9000		
Nickel	ug/L	OW-216B	05/05/2022	ND	1.9000		
Nickel	ug/L	OW-216B	10/25/2022	ND	1.9000		
Nickel	ug/L	OW-216B	04/18/2023	ND	1.9000		
Nickel	ug/L	OW-216B	09/26/2023	ND	1.9000		
Selenium	ug/L	OW-216B	03/21/2014	ND	0.7000	0.9600	**
Selenium	ug/L	OW-216B	09/05/2014	ND	3.3400		*
Selenium	ug/L	OW-216B	03/06/2015	ND	3.3400		*
Selenium	ug/L	OW-216B	09/01/2015	ND	3.3400		*
Selenium	ug/L	OW-216B	03/10/2016	ND	0.6300	0.9600	**
Selenium	ug/L	OW-216B	09/14/2016	ND	0.6300	0.9600	**
Selenium	ug/L	OW-216B	03/23/2017	ND	0.9280	0.9600	**
Selenium	ug/L	OW-216B	09/19/2017	ND	0.9280	0.9600	**
Selenium	ug/L	OW-216B	03/27/2018	ND	0.9000	0.9600	**
Selenium	ug/L	OW-216B	09/05/2018	ND	0.9000	0.9600	**
Selenium	ug/L	OW-216B	04/15/2019	ND	1.0000	0.9600	**
Selenium	ug/L	OW-216B	09/30/2019	ND	1.0000	0.9600	**
Selenium	ug/L	OW-216B	03/31/2020	ND	1.0000	0.9600	**
Selenium	ug/L	OW-216B	09/21/2020	ND	1.0000	0.9600	**
Selenium	ug/L	OW-216B	03/19/2021	ND	0.9600		
Selenium	ug/L	OW-216B	11/22/2021	ND	0.9600		
Selenium	ug/L	OW-216B	05/05/2022	ND	0.9600		
Selenium	ug/L	OW-216B	10/25/2022	ND	0.9600		
Selenium	ug/L	OW-216B	04/18/2023	ND	1.4000	0.9600	**
Selenium	ug/L	OW-216B	09/26/2023	ND	1.4000	0.9600	**
Silver	ug/L	OW-216B	03/21/2014	ND	0.0330	0.3700	**
Silver	ug/L	OW-216B	09/05/2014	ND	0.0420	0.3700	**
Silver	ug/L	OW-216B	03/06/2015	ND	0.0420	0.3700	**
Silver	ug/L	OW-216B	09/01/2015		0.0790		
Silver	ug/L	OW-216B	03/10/2016	ND	0.1530	0.3700	**
Silver	ug/L	OW-216B	09/14/2016	ND	0.1530	0.3700	**
Silver	ug/L	OW-216B	03/23/2017	ND	0.1400	0.3700	**
Silver	ug/L	OW-216B	09/19/2017	ND	0.1400	0.3700	**
Silver	ug/L	OW-216B	03/27/2018	ND	0.3000	0.3700	**
Silver	ug/L	OW-216B	09/05/2018	ND	0.3000	0.3700	**
Silver	ug/L	OW-216B	04/15/2019	ND	0.3700		
Silver	ug/L	OW-216B	09/30/2019	ND	0.3700		
Silver	ug/L	OW-216B	03/31/2020	ND	0.3700		
Silver	ug/L	OW-216B	09/21/2020	ND	0.3700		
Silver	ug/L	OW-216B	03/19/2021	ND	0.4200	0.3700	**
Silver	ug/L	OW-216B	11/22/2021	ND	0.4200	0.3700	**
Silver	ug/L	OW-216B	05/05/2022	ND	0.4900	0.3700	**
Silver	ug/L	OW-216B	10/25/2022	ND	0.4900	0.3700	**
Silver	ug/L	OW-216B	04/18/2023	ND	0.5000	0.3700	**
Silver	ug/L	OW-216B	09/26/2023	ND	0.5000	0.3700	**
Thallium	ug/L	OW-216B	03/21/2014	ND	0.0500	0.2600	**
Thallium	ug/L	OW-216B	09/05/2014	ND	0.0325	0.2600	**

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Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Thallium	ug/L	OW-216B	03/06/2015	ND	0.0325	0.2600	**
Thallium	ug/L	OW-216B	09/01/2015	ND	0.0325	0.2600	**
Thallium	ug/L	OW-216B	03/10/2016	ND	0.0255	0.2600	**
Thallium	ug/L	OW-216B	09/14/2016	ND	0.0255	0.2600	**
Thallium	ug/L	OW-216B	03/23/2017	ND	0.0644	0.2600	**
Thallium	ug/L	OW-216B	09/19/2017	ND	0.0644	0.2600	**
Thallium	ug/L	OW-216B	03/27/2018	ND	0.1700	0.2600	**
Thallium	ug/L	OW-216B	09/05/2018	ND	0.1700	0.2600	**
Thallium	ug/L	OW-216B	04/15/2019	ND	0.2700	0.2600	**
Thallium	ug/L	OW-216B	09/30/2019	ND	0.2700	0.2600	**
Thallium	ug/L	OW-216B	03/31/2020	ND	0.2600		
Thallium	ug/L	OW-216B	09/21/2020	ND	0.2600		
Thallium	ug/L	OW-216B	03/19/2021	ND	0.2600		
Thallium	ug/L	OW-216B	11/22/2021	ND	0.2600		
Thallium	ug/L	OW-216B	05/05/2022	ND	0.2600		
Thallium	ug/L	OW-216B	10/25/2022	ND	0.2600		
Thallium	ug/L	OW-216B	04/18/2023	ND	0.2600		
Thallium	ug/L	OW-216B	09/26/2023	ND	0.2600		
Vanadium	ug/L	OW-216B	03/21/2014		1.1900		
Vanadium	ug/L	OW-216B	09/05/2014	ND	0.4490	1.1000	**
Vanadium	ug/L	OW-216B	03/06/2015	ND	0.4490	1.1000	**
Vanadium	ug/L	OW-216B	09/01/2015	ND	0.4490	1.1000	**
Vanadium	ug/L	OW-216B	03/10/2016	ND	0.2550	1.1000	**
Vanadium	ug/L	OW-216B	09/14/2016		0.8630		
Vanadium	ug/L	OW-216B	03/23/2017	ND	0.8400	1.1000	**
Vanadium	ug/L	OW-216B	09/19/2017	ND	0.8400	1.1000	**
Vanadium	ug/L	OW-216B	03/27/2018	ND	0.5200	1.1000	**
Vanadium	ug/L	OW-216B	09/05/2018	ND	0.5200	1.1000	**
Vanadium	ug/L	OW-216B	04/15/2019	ND	0.8200	1.1000	**
Vanadium	ug/L	OW-216B	09/30/2019	ND	0.8200	1.1000	**
Vanadium	ug/L	OW-216B	03/31/2020	ND	0.8200	1.1000	**
Vanadium	ug/L	OW-216B	09/21/2020	ND	0.8500	1.1000	**
Vanadium	ug/L	OW-216B	03/19/2021	ND	1.1000		
Vanadium	ug/L	OW-216B	11/22/2021	ND	1.1000		
Vanadium	ug/L	OW-216B	05/05/2022	ND	1.1000		
Vanadium	ug/L	OW-216B	10/25/2022	ND	1.1000		
Vanadium	ug/L	OW-216B	04/18/2023	ND	1.1000		
Vanadium	ug/L	OW-216B	09/26/2023	ND	1.1000		
Vinyl chloride	ug/L	OW-216B	03/21/2014	ND	0.1000	0.1800	**
Vinyl chloride	ug/L	OW-216B	09/05/2014	ND	0.1000	0.1800	**
Vinyl chloride	ug/L	OW-216B	03/06/2015	ND	0.1000	0.1800	**
Vinyl chloride	ug/L	OW-216B	09/01/2015	ND	0.1000	0.1800	**
Vinyl chloride	ug/L	OW-216B	03/10/2016	ND	0.1000	0.1800	**
Vinyl chloride	ug/L	OW-216B	09/14/2016	ND	0.1000	0.1800	**
Vinyl chloride	ug/L	OW-216B	03/23/2017	ND	0.1000	0.1800	**
Vinyl chloride	ug/L	OW-216B	09/19/2017	ND	0.1000	0.1800	**
Vinyl chloride	ug/L	OW-216B	03/27/2018	ND	0.1000	0.1800	**
Vinyl chloride	ug/L	OW-216B	09/05/2018	ND	0.6000		*
Vinyl chloride	ug/L	OW-216B	04/15/2019	ND	0.6000		*
Vinyl chloride	ug/L	OW-216B	09/30/2019	ND	0.1800		
Vinyl chloride	ug/L	OW-216B	03/31/2020	ND	0.1800		
Vinyl chloride	ug/L	OW-216B	09/21/2020	ND	0.1800		
Vinyl chloride	ug/L	OW-216B	03/19/2021	ND	0.1800		
Vinyl chloride	ug/L	OW-216B	11/22/2021	ND	0.1800		
Vinyl chloride	ug/L	OW-216B	05/05/2022	ND	0.1800		
Vinyl chloride	ug/L	OW-216B	10/25/2022	ND	0.1800		
Vinyl chloride	ug/L	OW-216B	04/18/2023	ND	0.1800		
Vinyl chloride	ug/L	OW-216B	09/26/2023	ND	0.1800		
Zinc	ug/L	OW-216B	03/21/2014		3.4900		
Zinc	ug/L	OW-216B	09/05/2014	ND	6.9500	10.0000	**
Zinc	ug/L	OW-216B	03/06/2015	ND	6.9500	10.0000	**
Zinc	ug/L	OW-216B	09/01/2015	ND	6.9500	10.0000	**
Zinc	ug/L	OW-216B	03/10/2016	ND	5.2100	10.0000	**

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Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Zinc	ug/L	OW-216B	09/14/2016	ND	5.2100	10.0000	**
Zinc	ug/L	OW-216B	03/23/2017	ND	11.5000	10.0000	**
Zinc	ug/L	OW-216B	09/19/2017	ND	11.5000	10.0000	**
Zinc	ug/L	OW-216B	03/27/2018	ND	10.0000		
Zinc	ug/L	OW-216B	09/05/2018	ND	10.0000		
Zinc	ug/L	OW-216B	04/15/2019	ND	10.0000		
Zinc	ug/L	OW-216B	09/30/2019	ND	10.0000		
Zinc	ug/L	OW-216B	03/31/2020	ND	10.0000		
Zinc	ug/L	OW-216B	09/21/2020	ND	10.0000		
Zinc	ug/L	OW-216B	03/19/2021	ND	10.0000		
Zinc	ug/L	OW-216B	11/22/2021	ND	10.0000		
Zinc	ug/L	OW-216B	05/05/2022	ND	10.0000		
Zinc	ug/L	OW-216B	10/25/2022	ND	10.0000		
Zinc	ug/L	OW-216B	04/18/2023	ND	6.4000	10.0000	**
Zinc	ug/L	OW-216B	09/26/2023	ND	6.4000	10.0000	**
1,4-dichlorobenzene	ug/L	OW-217B	03/24/2020	ND	0.2300		
1,4-dichlorobenzene	ug/L	OW-217B	08/06/2020	ND	0.2300		
1,4-dichlorobenzene	ug/L	OW-217B	09/18/2020	ND	0.2300		
1,4-dichlorobenzene	ug/L	OW-217B	12/08/2020	ND	0.2300		
Antimony	ug/L	OW-217B	03/24/2020	ND	0.5800	0.6900	**
Antimony	ug/L	OW-217B	08/06/2020	ND	0.5100	0.6900	**
Antimony	ug/L	OW-217B	09/18/2020	ND	0.5100	0.6900	**
Antimony	ug/L	OW-217B	12/08/2020	ND	0.5100	0.6900	**
Arsenic	ug/L	OW-217B	03/24/2020	ND	0.8800	0.7500	**
Arsenic	ug/L	OW-217B	08/06/2020	ND	0.8800	0.7500	**
Arsenic	ug/L	OW-217B	09/18/2020	ND	0.8800	0.7500	**
Arsenic	ug/L	OW-217B	12/08/2020	ND	0.8800	0.7500	**
Barium	ug/L	OW-217B	03/24/2020		46.4000		
Barium	ug/L	OW-217B	08/06/2020		51.0000		
Barium	ug/L	OW-217B	09/18/2020		34.2000		
Barium	ug/L	OW-217B	12/08/2020		43.9000		
Benzene	ug/L	OW-217B	03/24/2020	ND	0.2200		
Benzene	ug/L	OW-217B	08/06/2020	ND	0.2200		
Benzene	ug/L	OW-217B	09/18/2020	ND	0.2200		
Benzene	ug/L	OW-217B	12/08/2020	ND	0.2200		
Beryllium	ug/L	OW-217B	03/24/2020	ND	0.2700		
Beryllium	ug/L	OW-217B	08/06/2020	ND	0.2700		
Beryllium	ug/L	OW-217B	09/18/2020	ND	0.2700		
Beryllium	ug/L	OW-217B	12/08/2020	ND	0.2700		
Cadmium	ug/L	OW-217B	03/24/2020	ND	0.0390	0.0550	**
Cadmium	ug/L	OW-217B	08/06/2020	ND	0.0490	0.0550	**
Cadmium	ug/L	OW-217B	09/18/2020	ND	0.0490	0.0550	**
Cadmium	ug/L	OW-217B	12/08/2020	ND	0.0490	0.0550	**
Chromium	ug/L	OW-217B	03/24/2020	ND	1.1000		
Chromium	ug/L	OW-217B	08/06/2020	ND	1.1000		
Chromium	ug/L	OW-217B	09/18/2020		7.0600		
Chromium	ug/L	OW-217B	12/08/2020	ND	1.1000		
Cis-1,2-dichloroethylene	ug/L	OW-217B	03/24/2020	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	OW-217B	08/06/2020	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	OW-217B	09/18/2020	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	OW-217B	12/08/2020	ND	0.2100		
Cobalt	ug/L	OW-217B	03/24/2020		2.3000		
Cobalt	ug/L	OW-217B	08/06/2020		2.6700		
Cobalt	ug/L	OW-217B	09/18/2020		0.7390		
Cobalt	ug/L	OW-217B	12/08/2020		2.0500		
Copper	ug/L	OW-217B	03/24/2020	ND	3.2000	1.8000	**
Copper	ug/L	OW-217B	08/06/2020	ND	1.5000	1.8000	**
Copper	ug/L	OW-217B	09/18/2020	ND	1.5000	1.8000	**
Copper	ug/L	OW-217B	12/08/2020	ND	1.5000	1.8000	**
Lead	ug/L	OW-217B	03/24/2020	ND	0.2700	0.2400	**
Lead	ug/L	OW-217B	08/06/2020	ND	0.1100	0.2400	**
Lead	ug/L	OW-217B	09/18/2020	ND	0.1100	0.2400	**
Lead	ug/L	OW-217B	12/08/2020	ND	0.1100	0.2400	**

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Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Nickel	ug/L	OW-217B	03/24/2020		9.7600		
Nickel	ug/L	OW-217B	08/06/2020		10.9000		
Nickel	ug/L	OW-217B	09/18/2020	ND	1.9000		
Nickel	ug/L	OW-217B	12/08/2020		8.4500		
Selenium	ug/L	OW-217B	03/24/2020	ND	1.0000	0.9600	**
Selenium	ug/L	OW-217B	08/06/2020	ND	1.0000	0.9600	**
Selenium	ug/L	OW-217B	09/18/2020	ND	1.0000	0.9600	**
Selenium	ug/L	OW-217B	12/08/2020	ND	1.0000	0.9600	**
Silver	ug/L	OW-217B	03/24/2020	ND	0.3700		
Silver	ug/L	OW-217B	08/06/2020	ND	0.3700		
Silver	ug/L	OW-217B	09/18/2020	ND	0.3700		
Silver	ug/L	OW-217B	12/08/2020	ND	0.3700		
Thallium	ug/L	OW-217B	03/24/2020	ND	0.2600		
Thallium	ug/L	OW-217B	08/06/2020	ND	0.2600		
Thallium	ug/L	OW-217B	09/18/2020	ND	0.2600		
Thallium	ug/L	OW-217B	12/08/2020	ND	0.2600		
Vanadium	ug/L	OW-217B	03/24/2020	ND	0.8200	1.1000	**
Vanadium	ug/L	OW-217B	08/06/2020	ND	0.8500	1.1000	**
Vanadium	ug/L	OW-217B	09/18/2020	ND	0.8500	1.1000	**
Vanadium	ug/L	OW-217B	12/08/2020	ND	0.8500	1.1000	**
Vinyl chloride	ug/L	OW-217B	03/24/2020	ND	0.1800		
Vinyl chloride	ug/L	OW-217B	08/06/2020	ND	0.1800		
Vinyl chloride	ug/L	OW-217B	09/18/2020	ND	0.1800		
Vinyl chloride	ug/L	OW-217B	12/08/2020	ND	0.1800		
Zinc	ug/L	OW-217B	03/24/2020	ND	10.0000		
Zinc	ug/L	OW-217B	08/06/2020	ND	10.0000		
Zinc	ug/L	OW-217B	09/18/2020	ND	10.0000		
Zinc	ug/L	OW-217B	12/08/2020	ND	10.0000		
1,4-dichlorobenzene	ug/L	OW-218B	03/25/2020	ND	0.2300		
1,4-dichlorobenzene	ug/L	OW-218B	08/05/2020	ND	0.2300		
1,4-dichlorobenzene	ug/L	OW-218B	09/18/2020	ND	0.2300		
1,4-dichlorobenzene	ug/L	OW-218B	12/08/2020	ND	0.2300		
Antimony	ug/L	OW-218B	03/25/2020	ND	0.5800	0.6900	**
Antimony	ug/L	OW-218B	08/05/2020	ND	0.5100	0.6900	**
Antimony	ug/L	OW-218B	09/18/2020	ND	0.5100	0.6900	**
Antimony	ug/L	OW-218B	12/08/2020	ND	0.5100	0.6900	**
Arsenic	ug/L	OW-218B	03/25/2020	ND	0.8800	0.7500	**
Arsenic	ug/L	OW-218B	08/05/2020	ND	0.8800	0.7500	**
Arsenic	ug/L	OW-218B	09/18/2020	ND	0.8800	0.7500	**
Arsenic	ug/L	OW-218B	12/08/2020	ND	0.8800	0.7500	**
Barium	ug/L	OW-218B	03/25/2020		31.4000		
Barium	ug/L	OW-218B	08/05/2020		32.8000		
Barium	ug/L	OW-218B	09/18/2020		48.7000		
Barium	ug/L	OW-218B	12/08/2020		32.0000		
Benzene	ug/L	OW-218B	03/25/2020	ND	0.2200		
Benzene	ug/L	OW-218B	08/05/2020	ND	0.2200		
Benzene	ug/L	OW-218B	09/18/2020	ND	0.2200		
Benzene	ug/L	OW-218B	12/08/2020	ND	0.2200		
Beryllium	ug/L	OW-218B	03/25/2020	ND	0.2700		
Beryllium	ug/L	OW-218B	08/05/2020	ND	0.2700		
Beryllium	ug/L	OW-218B	09/18/2020	ND	0.2700		
Beryllium	ug/L	OW-218B	12/08/2020	ND	0.2700		
Cadmium	ug/L	OW-218B	03/25/2020	ND	0.0390	0.0550	**
Cadmium	ug/L	OW-218B	08/05/2020	ND	0.0490	0.0550	**
Cadmium	ug/L	OW-218B	09/18/2020		0.1050		
Cadmium	ug/L	OW-218B	12/08/2020	ND	0.0490	0.0550	**
Chromium	ug/L	OW-218B	03/25/2020		8.3700		
Chromium	ug/L	OW-218B	08/05/2020		6.1500		
Chromium	ug/L	OW-218B	09/18/2020	ND	1.1000		
Chromium	ug/L	OW-218B	12/08/2020	ND	1.1000		
Cis-1,2-dichloroethylene	ug/L	OW-218B	03/25/2020	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	OW-218B	08/05/2020	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	OW-218B	09/18/2020	ND	0.2100		

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Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Cis-1,2-dichloroethylene	ug/L	OW-218B	12/08/2020	ND	0.2100		
Cobalt	ug/L	OW-218B	03/25/2020	ND	0.0910	0.1900	**
Cobalt	ug/L	OW-218B	08/05/2020		0.8190		
Cobalt	ug/L	OW-218B	09/18/2020		2.1700		
Cobalt	ug/L	OW-218B	12/08/2020	ND	0.0910	0.1900	**
Copper	ug/L	OW-218B	03/25/2020	ND	3.2000	1.8000	**
Copper	ug/L	OW-218B	08/05/2020	ND	1.5000	1.8000	**
Copper	ug/L	OW-218B	09/18/2020	ND	1.5000	1.8000	**
Copper	ug/L	OW-218B	12/08/2020	ND	1.5000	1.8000	**
Lead	ug/L	OW-218B	03/25/2020	ND	0.2700	0.2400	**
Lead	ug/L	OW-218B	08/05/2020	ND	0.1100	0.2400	**
Lead	ug/L	OW-218B	09/18/2020	ND	0.1100	0.2400	**
Lead	ug/L	OW-218B	12/08/2020	ND	0.1100	0.2400	**
Nickel	ug/L	OW-218B	03/25/2020	ND	1.9000		
Nickel	ug/L	OW-218B	08/05/2020		5.4000		
Nickel	ug/L	OW-218B	09/18/2020		9.4600		
Nickel	ug/L	OW-218B	12/08/2020	ND	1.9000		
Selenium	ug/L	OW-218B	03/25/2020	ND	1.0000	0.9600	**
Selenium	ug/L	OW-218B	08/05/2020	ND	1.0000	0.9600	**
Selenium	ug/L	OW-218B	09/18/2020	ND	1.0000	0.9600	**
Selenium	ug/L	OW-218B	12/08/2020	ND	1.0000	0.9600	**
Silver	ug/L	OW-218B	03/25/2020	ND	0.3700		
Silver	ug/L	OW-218B	08/05/2020	ND	0.3700		
Silver	ug/L	OW-218B	09/18/2020	ND	0.3700		
Silver	ug/L	OW-218B	12/08/2020	ND	0.3700		
Thallium	ug/L	OW-218B	03/25/2020	ND	0.2600		
Thallium	ug/L	OW-218B	08/05/2020	ND	0.2600		
Thallium	ug/L	OW-218B	09/18/2020	ND	0.2600		
Thallium	ug/L	OW-218B	12/08/2020	ND	0.2600		
Vanadium	ug/L	OW-218B	03/25/2020	ND	0.8200	1.1000	**
Vanadium	ug/L	OW-218B	08/05/2020	ND	0.8500	1.1000	**
Vanadium	ug/L	OW-218B	09/18/2020	ND	0.8500	1.1000	**
Vanadium	ug/L	OW-218B	12/08/2020	ND	0.8500	1.1000	**
Vinyl chloride	ug/L	OW-218B	03/25/2020	ND	0.1800		
Vinyl chloride	ug/L	OW-218B	08/05/2020	ND	0.1800		
Vinyl chloride	ug/L	OW-218B	09/18/2020	ND	0.1800		
Vinyl chloride	ug/L	OW-218B	12/08/2020	ND	0.1800		
Zinc	ug/L	OW-218B	03/25/2020	ND	10.0000		
Zinc	ug/L	OW-218B	08/05/2020	ND	10.0000		
Zinc	ug/L	OW-218B	09/18/2020	ND	10.0000		
Zinc	ug/L	OW-218B	12/08/2020	ND	10.0000		
1,4-dichlorobenzene	ug/L	OW-219B	03/25/2020	ND	0.2300		
1,4-dichlorobenzene	ug/L	OW-219B	08/05/2020	ND	0.2300		
1,4-dichlorobenzene	ug/L	OW-219B	09/22/2020	ND	0.2300		
1,4-dichlorobenzene	ug/L	OW-219B	12/08/2020	ND	0.2300		
1,4-dichlorobenzene	ug/L	OW-219B	03/29/2021	ND	0.2300		
1,4-dichlorobenzene	ug/L	OW-219B	11/15/2021	ND	0.2300		
1,4-dichlorobenzene	ug/L	OW-219B	04/12/2022	ND	0.2300		
1,4-dichlorobenzene	ug/L	OW-219B	11/08/2022	ND	0.2300		
1,4-dichlorobenzene	ug/L	OW-219B	04/18/2023	ND	0.2300		
1,4-dichlorobenzene	ug/L	OW-219B	09/20/2023	ND	0.2300		
Antimony	ug/L	OW-219B	03/25/2020	ND	0.5800	0.6900	**
Antimony	ug/L	OW-219B	08/05/2020	ND	0.5100	0.6900	**
Antimony	ug/L	OW-219B	09/22/2020	ND	0.5100	0.6900	**
Antimony	ug/L	OW-219B	12/08/2020	ND	0.5100	0.6900	**
Antimony	ug/L	OW-219B	03/29/2021	ND	1.1000	0.6900	**
Antimony	ug/L	OW-219B	11/15/2021	ND	1.1000	0.6900	**
Antimony	ug/L	OW-219B	04/12/2022	ND	0.6900		
Antimony	ug/L	OW-219B	11/08/2022	ND	0.6900		
Antimony	ug/L	OW-219B	04/18/2023	ND	1.0000	0.6900	**
Antimony	ug/L	OW-219B	09/20/2023	ND	1.0000	0.6900	**
Arsenic	ug/L	OW-219B	03/25/2020	ND	0.8800	0.7500	**
Arsenic	ug/L	OW-219B	08/05/2020	ND	0.8800	0.7500	**

* - Outlier for that well and constituent.
** - ND value replaced with median RL.
*** - ND value replaced with manual RL.
ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Arsenic	ug/L	OW-219B	09/22/2020	ND	0.8800	0.7500	**
Arsenic	ug/L	OW-219B	12/08/2020	ND	0.8800	0.7500	**
Arsenic	ug/L	OW-219B	03/29/2021	ND	0.7500		
Arsenic	ug/L	OW-219B	11/15/2021	ND	0.7500		
Arsenic	ug/L	OW-219B	04/12/2022	ND	0.7500		
Arsenic	ug/L	OW-219B	11/08/2022	ND	0.7500		
Arsenic	ug/L	OW-219B	04/18/2023	ND	0.5300	0.7500	**
Arsenic	ug/L	OW-219B	09/20/2023	ND	0.5300	0.7500	**
Barium	ug/L	OW-219B	03/25/2020		28.7000		
Barium	ug/L	OW-219B	08/05/2020		34.9000		
Barium	ug/L	OW-219B	09/22/2020		33.0000		
Barium	ug/L	OW-219B	12/08/2020		34.2000		
Barium	ug/L	OW-219B	03/29/2021		32.4000		
Barium	ug/L	OW-219B	11/15/2021		35.9000		
Barium	ug/L	OW-219B	04/12/2022		30.1000		
Barium	ug/L	OW-219B	11/08/2022		29.8000		
Barium	ug/L	OW-219B	04/18/2023		23.1000		
Barium	ug/L	OW-219B	09/20/2023		24.3000		
Benzene	ug/L	OW-219B	03/25/2020	ND	0.2200		
Benzene	ug/L	OW-219B	08/05/2020	ND	0.2200		
Benzene	ug/L	OW-219B	09/22/2020	ND	0.2200		
Benzene	ug/L	OW-219B	12/08/2020	ND	0.2200		
Benzene	ug/L	OW-219B	03/29/2021	ND	0.2200		
Benzene	ug/L	OW-219B	11/15/2021	ND	0.2200		
Benzene	ug/L	OW-219B	04/12/2022	ND	0.2200		
Benzene	ug/L	OW-219B	11/08/2022	ND	0.2200		
Benzene	ug/L	OW-219B	04/18/2023	ND	0.2200		
Benzene	ug/L	OW-219B	09/20/2023	ND	0.2200		
Beryllium	ug/L	OW-219B	03/25/2020	ND	0.2700		
Beryllium	ug/L	OW-219B	08/05/2020	ND	0.2700		
Beryllium	ug/L	OW-219B	09/22/2020	ND	0.2700		
Beryllium	ug/L	OW-219B	12/08/2020	ND	0.2700		
Beryllium	ug/L	OW-219B	03/29/2021	ND	0.2700		
Beryllium	ug/L	OW-219B	11/15/2021	ND	0.2700		
Beryllium	ug/L	OW-219B	04/12/2022	ND	0.2700		
Beryllium	ug/L	OW-219B	11/08/2022	ND	0.2700		
Beryllium	ug/L	OW-219B	04/18/2023	ND	0.3300	0.2700	**
Beryllium	ug/L	OW-219B	09/20/2023	ND	0.3300	0.2700	**
Cadmium	ug/L	OW-219B	03/25/2020		0.1440		
Cadmium	ug/L	OW-219B	08/05/2020		0.8200		
Cadmium	ug/L	OW-219B	09/22/2020		0.1340		
Cadmium	ug/L	OW-219B	12/08/2020		0.1540		
Cadmium	ug/L	OW-219B	03/29/2021		0.1770		
Cadmium	ug/L	OW-219B	11/15/2021		0.1920		
Cadmium	ug/L	OW-219B	04/12/2022		0.1540		
Cadmium	ug/L	OW-219B	11/08/2022		0.1680		
Cadmium	ug/L	OW-219B	04/18/2023		0.4800		
Cadmium	ug/L	OW-219B	09/20/2023	ND	0.1000	0.0550	**
Chromium	ug/L	OW-219B	03/25/2020	ND	1.1000		
Chromium	ug/L	OW-219B	08/05/2020	ND	1.1000		
Chromium	ug/L	OW-219B	09/22/2020	ND	1.1000		
Chromium	ug/L	OW-219B	12/08/2020	ND	1.1000		
Chromium	ug/L	OW-219B	03/29/2021	ND	1.1000		
Chromium	ug/L	OW-219B	11/15/2021	ND	1.1000		
Chromium	ug/L	OW-219B	04/12/2022	ND	1.1000		
Chromium	ug/L	OW-219B	11/08/2022	ND	1.1000		
Chromium	ug/L	OW-219B	04/18/2023	ND	1.1000		
Chromium	ug/L	OW-219B	09/20/2023	ND	1.1000		
Cis-1,2-dichloroethylene	ug/L	OW-219B	03/25/2020	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	OW-219B	08/05/2020	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	OW-219B	09/22/2020	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	OW-219B	12/08/2020	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	OW-219B	03/29/2021	ND	0.2100		

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** - ND value replaced with median RL.
*** - ND value replaced with manual RL.
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Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Cis-1,2-dichloroethylene	ug/L	OW-219B	11/15/2021	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	OW-219B	04/12/2022	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	OW-219B	11/08/2022	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	OW-219B	04/18/2023	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	OW-219B	09/20/2023	ND	0.2100		
Cobalt	ug/L	OW-219B	03/25/2020		1.9000		
Cobalt	ug/L	OW-219B	08/05/2020		1.4300		
Cobalt	ug/L	OW-219B	09/22/2020		0.6200		
Cobalt	ug/L	OW-219B	12/08/2020		0.5280		
Cobalt	ug/L	OW-219B	03/29/2021	ND	0.0910	0.1900	**
Cobalt	ug/L	OW-219B	11/15/2021		0.5990		
Cobalt	ug/L	OW-219B	04/12/2022	ND	0.1900		
Cobalt	ug/L	OW-219B	11/08/2022		0.8860		
Cobalt	ug/L	OW-219B	04/18/2023		0.8360		
Cobalt	ug/L	OW-219B	09/20/2023	ND	0.1700	0.1900	**
Copper	ug/L	OW-219B	03/25/2020	ND	3.2000	1.8000	**
Copper	ug/L	OW-219B	08/05/2020	ND	1.5000	1.8000	**
Copper	ug/L	OW-219B	09/22/2020	ND	1.5000	1.8000	**
Copper	ug/L	OW-219B	12/08/2020	ND	1.5000	1.8000	**
Copper	ug/L	OW-219B	03/29/2021	ND	1.4000	1.8000	**
Copper	ug/L	OW-219B	11/15/2021	ND	1.4000	1.8000	**
Copper	ug/L	OW-219B	04/12/2022	ND	1.8000		
Copper	ug/L	OW-219B	11/08/2022	ND	1.8000		
Copper	ug/L	OW-219B	04/18/2023	ND	1.8000		
Copper	ug/L	OW-219B	09/20/2023	ND	1.8000		
Lead	ug/L	OW-219B	03/25/2020	ND	0.2700	0.2400	**
Lead	ug/L	OW-219B	08/05/2020	ND	0.1100	0.2400	**
Lead	ug/L	OW-219B	09/22/2020	ND	0.1100	0.2400	**
Lead	ug/L	OW-219B	12/08/2020	ND	0.1100	0.2400	**
Lead	ug/L	OW-219B	03/29/2021	ND	0.2100	0.2400	**
Lead	ug/L	OW-219B	11/15/2021	ND	0.2100	0.2400	**
Lead	ug/L	OW-219B	04/12/2022	ND	0.2400		
Lead	ug/L	OW-219B	11/08/2022	ND	0.2400		
Lead	ug/L	OW-219B	04/18/2023	ND	0.2400		
Lead	ug/L	OW-219B	09/20/2023	ND	0.2400		
Nickel	ug/L	OW-219B	03/25/2020	ND	1.9000		
Nickel	ug/L	OW-219B	08/05/2020		11.9000		
Nickel	ug/L	OW-219B	09/22/2020		6.9100		
Nickel	ug/L	OW-219B	12/08/2020		5.7900		
Nickel	ug/L	OW-219B	03/29/2021	ND	1.9000		
Nickel	ug/L	OW-219B	11/15/2021		6.0000		
Nickel	ug/L	OW-219B	04/12/2022	ND	1.9000		
Nickel	ug/L	OW-219B	11/08/2022	ND	1.9000		
Nickel	ug/L	OW-219B	04/18/2023		5.3800		
Nickel	ug/L	OW-219B	09/20/2023	ND	1.9000		
Selenium	ug/L	OW-219B	03/25/2020	ND	1.0000	0.9600	**
Selenium	ug/L	OW-219B	08/05/2020	ND	1.0000	0.9600	**
Selenium	ug/L	OW-219B	09/22/2020	ND	1.0000	0.9600	**
Selenium	ug/L	OW-219B	12/08/2020	ND	1.0000	0.9600	**
Selenium	ug/L	OW-219B	03/29/2021	ND	0.9600		
Selenium	ug/L	OW-219B	11/15/2021	ND	0.9600		
Selenium	ug/L	OW-219B	04/12/2022	ND	0.9600		
Selenium	ug/L	OW-219B	11/08/2022	ND	0.9600		
Selenium	ug/L	OW-219B	04/18/2023	ND	1.4000	0.9600	**
Selenium	ug/L	OW-219B	09/20/2023	ND	1.4000	0.9600	**
Silver	ug/L	OW-219B	03/25/2020	ND	0.3700		
Silver	ug/L	OW-219B	08/05/2020	ND	0.3700		
Silver	ug/L	OW-219B	09/22/2020	ND	0.3700		
Silver	ug/L	OW-219B	12/08/2020	ND	0.3700		
Silver	ug/L	OW-219B	03/29/2021	ND	0.4200	0.3700	**
Silver	ug/L	OW-219B	11/15/2021	ND	0.4200	0.3700	**
Silver	ug/L	OW-219B	04/12/2022	ND	0.4900	0.3700	**
Silver	ug/L	OW-219B	11/08/2022	ND	0.4900	0.3700	**

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*** - ND value replaced with manual RL.
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Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Silver	ug/L	OW-219B	04/18/2023	ND	0.5000	0.3700	**
Silver	ug/L	OW-219B	09/20/2023	ND	0.5000	0.3700	**
Thallium	ug/L	OW-219B	03/25/2020	ND	0.2600		
Thallium	ug/L	OW-219B	08/05/2020	ND	0.2600		
Thallium	ug/L	OW-219B	09/22/2020	ND	0.2600		
Thallium	ug/L	OW-219B	12/08/2020	ND	0.2600		
Thallium	ug/L	OW-219B	03/29/2021	ND	0.2600		
Thallium	ug/L	OW-219B	11/15/2021	ND	0.2600		
Thallium	ug/L	OW-219B	04/12/2022	ND	0.2600		
Thallium	ug/L	OW-219B	11/08/2022	ND	0.2600		
Thallium	ug/L	OW-219B	04/18/2023		3.4800		*
Thallium	ug/L	OW-219B	09/20/2023	ND	0.2600		
Vanadium	ug/L	OW-219B	03/25/2020	ND	0.8200	1.1000	**
Vanadium	ug/L	OW-219B	08/05/2020	ND	0.8500	1.1000	**
Vanadium	ug/L	OW-219B	09/22/2020	ND	0.8500	1.1000	**
Vanadium	ug/L	OW-219B	12/08/2020	ND	0.8500	1.1000	**
Vanadium	ug/L	OW-219B	03/29/2021	ND	1.1000		
Vanadium	ug/L	OW-219B	11/15/2021	ND	1.1000		
Vanadium	ug/L	OW-219B	04/12/2022	ND	1.1000		
Vanadium	ug/L	OW-219B	11/08/2022	ND	1.1000		
Vanadium	ug/L	OW-219B	04/18/2023	ND	1.1000		
Vanadium	ug/L	OW-219B	09/20/2023	ND	1.1000		
Vinyl chloride	ug/L	OW-219B	03/25/2020	ND	0.1800		
Vinyl chloride	ug/L	OW-219B	08/05/2020	ND	0.1800		
Vinyl chloride	ug/L	OW-219B	09/22/2020	ND	0.1800		
Vinyl chloride	ug/L	OW-219B	12/08/2020	ND	0.1800		
Vinyl chloride	ug/L	OW-219B	03/29/2021	ND	0.1800		
Vinyl chloride	ug/L	OW-219B	11/15/2021	ND	0.1800		
Vinyl chloride	ug/L	OW-219B	04/12/2022	ND	0.1800		
Vinyl chloride	ug/L	OW-219B	11/08/2022	ND	0.1800		
Vinyl chloride	ug/L	OW-219B	04/18/2023	ND	0.1800		
Vinyl chloride	ug/L	OW-219B	09/20/2023	ND	0.1800		
Zinc	ug/L	OW-219B	03/25/2020	ND	10.0000		
Zinc	ug/L	OW-219B	08/05/2020	ND	10.0000		
Zinc	ug/L	OW-219B	09/22/2020	ND	10.0000		
Zinc	ug/L	OW-219B	12/08/2020	ND	10.0000		
Zinc	ug/L	OW-219B	03/29/2021	ND	10.0000		
Zinc	ug/L	OW-219B	11/15/2021	ND	10.0000		
Zinc	ug/L	OW-219B	04/12/2022	ND	10.0000		
Zinc	ug/L	OW-219B	11/08/2022	ND	10.0000		
Zinc	ug/L	OW-219B	04/18/2023	ND	6.4000	10.0000	**
Zinc	ug/L	OW-219B	09/20/2023	ND	6.4000	10.0000	**
1,4-dichlorobenzene	ug/L	OW-403B	03/18/2014	ND	0.2000	0.2300	**
1,4-dichlorobenzene	ug/L	OW-403B	08/26/2014	ND	0.2000	0.2300	**
1,4-dichlorobenzene	ug/L	OW-403B	03/11/2015	ND	0.2000	0.2300	**
1,4-dichlorobenzene	ug/L	OW-403B	08/24/2015	ND	0.2000	0.2300	**
1,4-dichlorobenzene	ug/L	OW-403B	03/10/2016	ND	0.2000	0.2300	**
1,4-dichlorobenzene	ug/L	OW-403B	09/14/2016	ND	0.2000	0.2300	**
1,4-dichlorobenzene	ug/L	OW-403B	03/20/2017	ND	0.2000	0.2300	**
1,4-dichlorobenzene	ug/L	OW-403B	09/07/2017	ND	0.2000	0.2300	**
1,4-dichlorobenzene	ug/L	OW-403B	03/13/2018	ND	0.2000	0.2300	**
1,4-dichlorobenzene	ug/L	OW-403B	09/24/2018	ND	0.2300		
1,4-dichlorobenzene	ug/L	OW-403B	04/01/2019	ND	0.2300		
1,4-dichlorobenzene	ug/L	OW-403B	09/24/2019	ND	0.2300		
Antimony	ug/L	OW-403B	03/18/2014	ND	0.4000	0.6900	**
Antimony	ug/L	OW-403B	08/26/2014		0.3360		
Antimony	ug/L	OW-403B	03/11/2015		0.3100		
Antimony	ug/L	OW-403B	08/24/2015		0.3390		
Antimony	ug/L	OW-403B	03/10/2016	ND	0.2370	0.6900	**
Antimony	ug/L	OW-403B	09/14/2016	ND	0.2370	0.6900	**
Antimony	ug/L	OW-403B	03/20/2017	ND	0.1850	0.6900	**
Antimony	ug/L	OW-403B	09/07/2017		0.2010		
Antimony	ug/L	OW-403B	03/13/2018		0.2250		

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Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Antimony	ug/L	OW-403B	09/24/2018	ND	0.4200	0.6900	**
Antimony	ug/L	OW-403B	04/01/2019	ND	0.5300	0.6900	**
Antimony	ug/L	OW-403B	09/24/2019	ND	0.5300	0.6900	**
Arsenic	ug/L	OW-403B	03/18/2014		0.4700		
Arsenic	ug/L	OW-403B	08/26/2014	ND	0.9450	0.7500	**
Arsenic	ug/L	OW-403B	03/11/2015	ND	0.9450	0.7500	**
Arsenic	ug/L	OW-403B	08/24/2015	ND	0.9450	0.7500	**
Arsenic	ug/L	OW-403B	03/10/2016	ND	0.6720	0.7500	**
Arsenic	ug/L	OW-403B	09/14/2016	ND	0.6720	0.7500	**
Arsenic	ug/L	OW-403B	03/20/2017	ND	0.5050	0.7500	**
Arsenic	ug/L	OW-403B	09/07/2017	ND	0.5050	0.7500	**
Arsenic	ug/L	OW-403B	03/13/2018	ND	0.5050	0.7500	**
Arsenic	ug/L	OW-403B	09/24/2018	ND	0.5700	0.7500	**
Arsenic	ug/L	OW-403B	04/01/2019	ND	0.7500		
Arsenic	ug/L	OW-403B	09/24/2019	ND	0.7500		
Barium	ug/L	OW-403B	03/18/2014		131.0000		
Barium	ug/L	OW-403B	08/26/2014		128.0000		
Barium	ug/L	OW-403B	03/11/2015		110.0000		
Barium	ug/L	OW-403B	08/24/2015		113.0000		
Barium	ug/L	OW-403B	03/10/2016		96.1000		
Barium	ug/L	OW-403B	09/14/2016		14.1000		
Barium	ug/L	OW-403B	03/20/2017		71.2000		
Barium	ug/L	OW-403B	09/07/2017		72.6000		
Barium	ug/L	OW-403B	03/13/2018		61.7000		
Barium	ug/L	OW-403B	09/24/2018		41.2000		
Barium	ug/L	OW-403B	04/01/2019		46.1000		
Barium	ug/L	OW-403B	09/24/2019		50.5000		
Benzene	ug/L	OW-403B	03/18/2014	ND	0.1100	0.2200	**
Benzene	ug/L	OW-403B	08/26/2014	ND	0.1100	0.2200	**
Benzene	ug/L	OW-403B	03/11/2015	ND	0.1100	0.2200	**
Benzene	ug/L	OW-403B	08/24/2015	ND	0.1100	0.2200	**
Benzene	ug/L	OW-403B	03/10/2016	ND	0.1100	0.2200	**
Benzene	ug/L	OW-403B	09/14/2016	ND	0.1100	0.2200	**
Benzene	ug/L	OW-403B	03/20/2017	ND	0.1100	0.2200	**
Benzene	ug/L	OW-403B	09/07/2017	ND	0.1100	0.2200	**
Benzene	ug/L	OW-403B	03/13/2018	ND	0.1100	0.2200	**
Benzene	ug/L	OW-403B	09/24/2018	ND	0.2200		
Benzene	ug/L	OW-403B	04/01/2019	ND	0.2200		
Benzene	ug/L	OW-403B	09/24/2019	ND	0.2200		
Beryllium	ug/L	OW-403B	03/18/2014	ND	0.0800	0.2700	**
Beryllium	ug/L	OW-403B	08/26/2014	ND	0.0390	0.2700	**
Beryllium	ug/L	OW-403B	03/11/2015	ND	0.0390	0.2700	**
Beryllium	ug/L	OW-403B	08/24/2015	ND	0.0390	0.2700	**
Beryllium	ug/L	OW-403B	03/10/2016	ND	0.2210	0.2700	**
Beryllium	ug/L	OW-403B	09/14/2016	ND	0.2210	0.2700	**
Beryllium	ug/L	OW-403B	03/20/2017	ND	0.1250	0.2700	**
Beryllium	ug/L	OW-403B	09/07/2017	ND	0.1250	0.2700	**
Beryllium	ug/L	OW-403B	03/13/2018	ND	0.1250	0.2700	**
Beryllium	ug/L	OW-403B	09/24/2018	ND	0.1900	0.2700	**
Beryllium	ug/L	OW-403B	04/01/2019	ND	0.2700		
Beryllium	ug/L	OW-403B	09/24/2019	ND	0.2700		
Cadmium	ug/L	OW-403B	03/18/2014	ND	0.1000	0.0550	**
Cadmium	ug/L	OW-403B	08/26/2014	ND	0.1120	0.0550	**
Cadmium	ug/L	OW-403B	03/11/2015	ND	0.1120	0.0550	**
Cadmium	ug/L	OW-403B	08/24/2015	ND	0.1120	0.0550	**
Cadmium	ug/L	OW-403B	03/10/2016		0.0770		
Cadmium	ug/L	OW-403B	09/14/2016		0.0900		
Cadmium	ug/L	OW-403B	03/20/2017	ND	0.0441	0.0550	**
Cadmium	ug/L	OW-403B	09/07/2017	ND	0.0441	0.0550	**
Cadmium	ug/L	OW-403B	03/13/2018	ND	0.0441	0.0550	**
Cadmium	ug/L	OW-403B	09/24/2018	ND	0.0600	0.0550	**
Cadmium	ug/L	OW-403B	04/01/2019	ND	0.0770	0.0550	**
Cadmium	ug/L	OW-403B	09/24/2019	ND	0.0390	0.0550	**

* - Outlier for that well and constituent.
** - ND value replaced with median RL.
*** - ND value replaced with manual RL.
ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Chromium	ug/L	OW-403B	03/18/2014		2.9200		
Chromium	ug/L	OW-403B	08/26/2014	ND	1.2400	1.1000	**
Chromium	ug/L	OW-403B	03/11/2015		3.8100		
Chromium	ug/L	OW-403B	08/24/2015		1.2700		
Chromium	ug/L	OW-403B	03/10/2016		1.4400		
Chromium	ug/L	OW-403B	09/14/2016		0.4790		
Chromium	ug/L	OW-403B	03/20/2017		1.4600		
Chromium	ug/L	OW-403B	09/07/2017		0.9310		
Chromium	ug/L	OW-403B	03/13/2018		3.3400		
Chromium	ug/L	OW-403B	09/24/2018		2.0200		
Chromium	ug/L	OW-403B	04/01/2019	ND	0.9800	1.1000	**
Chromium	ug/L	OW-403B	09/24/2019	ND	0.9800	1.1000	**
Cis-1,2-dichloroethylene	ug/L	OW-403B	03/18/2014	ND	0.1300	0.2100	**
Cis-1,2-dichloroethylene	ug/L	OW-403B	08/26/2014	ND	0.1300	0.2100	**
Cis-1,2-dichloroethylene	ug/L	OW-403B	03/11/2015	ND	0.1300	0.2100	**
Cis-1,2-dichloroethylene	ug/L	OW-403B	08/24/2015	ND	0.1300	0.2100	**
Cis-1,2-dichloroethylene	ug/L	OW-403B	03/10/2016	ND	0.1300	0.2100	**
Cis-1,2-dichloroethylene	ug/L	OW-403B	09/14/2016	ND	0.1300	0.2100	**
Cis-1,2-dichloroethylene	ug/L	OW-403B	03/20/2017	ND	0.1300	0.2100	**
Cis-1,2-dichloroethylene	ug/L	OW-403B	09/07/2017	ND	0.1300	0.2100	**
Cis-1,2-dichloroethylene	ug/L	OW-403B	03/13/2018	ND	0.1300	0.2100	**
Cis-1,2-dichloroethylene	ug/L	OW-403B	09/24/2018	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	OW-403B	04/01/2019	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	OW-403B	09/24/2019	ND	0.2100		
Cobalt	ug/L	OW-403B	03/18/2014		2.7100		*
Cobalt	ug/L	OW-403B	08/26/2014	ND	0.0528	0.1900	**
Cobalt	ug/L	OW-403B	03/11/2015	ND	0.0528	0.1900	**
Cobalt	ug/L	OW-403B	08/24/2015		0.0740		
Cobalt	ug/L	OW-403B	03/10/2016		0.0370		
Cobalt	ug/L	OW-403B	09/14/2016		7.9000		*
Cobalt	ug/L	OW-403B	03/20/2017	ND	0.0453	0.1900	**
Cobalt	ug/L	OW-403B	09/07/2017		0.1050		
Cobalt	ug/L	OW-403B	03/13/2018		0.0500		
Cobalt	ug/L	OW-403B	09/24/2018		0.0700		
Cobalt	ug/L	OW-403B	04/01/2019	ND	0.0910	0.1900	**
Cobalt	ug/L	OW-403B	09/24/2019	ND	0.0910	0.1900	**
Copper	ug/L	OW-403B	03/18/2014		9.0200		*
Copper	ug/L	OW-403B	08/26/2014		1.6700		
Copper	ug/L	OW-403B	03/11/2015		1.0300		
Copper	ug/L	OW-403B	08/24/2015		1.5400		
Copper	ug/L	OW-403B	03/10/2016		1.2900		
Copper	ug/L	OW-403B	09/14/2016	ND	1.2200	1.8000	**
Copper	ug/L	OW-403B	03/20/2017	ND	2.1900	1.8000	**
Copper	ug/L	OW-403B	09/07/2017	ND	2.1900	1.8000	**
Copper	ug/L	OW-403B	03/13/2018	ND	2.1900	1.8000	**
Copper	ug/L	OW-403B	09/24/2018	ND	1.6000	1.8000	**
Copper	ug/L	OW-403B	04/01/2019	ND	2.0000	1.8000	**
Copper	ug/L	OW-403B	09/24/2019	ND	2.0000	1.8000	**
Lead	ug/L	OW-403B	03/18/2014		1.1200		
Lead	ug/L	OW-403B	08/26/2014	ND	0.0967	0.2400	**
Lead	ug/L	OW-403B	03/11/2015	ND	0.0967	0.2400	**
Lead	ug/L	OW-403B	08/24/2015	ND	0.0967	0.2400	**
Lead	ug/L	OW-403B	03/10/2016	ND	0.2110	0.2400	**
Lead	ug/L	OW-403B	09/14/2016	ND	0.2110	0.2400	**
Lead	ug/L	OW-403B	03/20/2017	ND	0.3240	0.2400	**
Lead	ug/L	OW-403B	09/07/2017	ND	0.3240	0.2400	**
Lead	ug/L	OW-403B	03/13/2018	ND	0.3240	0.2400	**
Lead	ug/L	OW-403B	09/24/2018	ND	0.2500	0.2400	**
Lead	ug/L	OW-403B	04/01/2019	ND	0.2700	0.2400	**
Lead	ug/L	OW-403B	09/24/2019	ND	0.2700	0.2400	**
Nickel	ug/L	OW-403B	03/18/2014		4.9400		
Nickel	ug/L	OW-403B	08/26/2014		2.1400		
Nickel	ug/L	OW-403B	03/11/2015		2.6500		

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Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Nickel	ug/L	OW-403B	08/24/2015		2.4100		
Nickel	ug/L	OW-403B	03/10/2016		2.5000		
Nickel	ug/L	OW-403B	09/14/2016		9.3700		*
Nickel	ug/L	OW-403B	03/20/2017		2.3600		
Nickel	ug/L	OW-403B	09/07/2017		2.9200		
Nickel	ug/L	OW-403B	03/13/2018		2.1900		
Nickel	ug/L	OW-403B	09/24/2018	ND	3.0000	1.9000	**
Nickel	ug/L	OW-403B	04/01/2019	ND	1.7000	1.9000	**
Nickel	ug/L	OW-403B	09/24/2019	ND	1.7000	1.9000	**
Selenium	ug/L	OW-403B	03/18/2014		2.2300		
Selenium	ug/L	OW-403B	08/26/2014	ND	3.3400	0.9600	**
Selenium	ug/L	OW-403B	03/11/2015	ND	3.3400	0.9600	**
Selenium	ug/L	OW-403B	08/24/2015	ND	3.3400	0.9600	**
Selenium	ug/L	OW-403B	03/10/2016		1.1400		
Selenium	ug/L	OW-403B	09/14/2016	ND	0.6300	0.9600	**
Selenium	ug/L	OW-403B	03/20/2017		0.9870		
Selenium	ug/L	OW-403B	09/07/2017	ND	0.9280	0.9600	**
Selenium	ug/L	OW-403B	03/13/2018		1.0700		
Selenium	ug/L	OW-403B	09/24/2018	ND	0.9000	0.9600	**
Selenium	ug/L	OW-403B	04/01/2019	ND	1.0000	0.9600	**
Selenium	ug/L	OW-403B	09/24/2019	ND	1.0000	0.9600	**
Silver	ug/L	OW-403B	03/18/2014	ND	0.0330	0.3700	**
Silver	ug/L	OW-403B	08/26/2014	ND	0.0420	0.3700	**
Silver	ug/L	OW-403B	03/11/2015	ND	0.0420	0.3700	**
Silver	ug/L	OW-403B	08/24/2015	ND	0.0420	0.3700	**
Silver	ug/L	OW-403B	03/10/2016	ND	0.1530	0.3700	**
Silver	ug/L	OW-403B	09/14/2016	ND	0.1530	0.3700	**
Silver	ug/L	OW-403B	03/20/2017	ND	0.1400	0.3700	**
Silver	ug/L	OW-403B	09/07/2017	ND	0.1400	0.3700	**
Silver	ug/L	OW-403B	03/13/2018	ND	0.1400	0.3700	**
Silver	ug/L	OW-403B	09/24/2018	ND	0.3000	0.3700	**
Silver	ug/L	OW-403B	04/01/2019	ND	0.3700		
Silver	ug/L	OW-403B	09/24/2019	ND	0.3700		
Thallium	ug/L	OW-403B	03/18/2014	ND	0.0500	0.2600	**
Thallium	ug/L	OW-403B	08/26/2014	ND	0.0325	0.2600	**
Thallium	ug/L	OW-403B	03/11/2015	ND	0.0325	0.2600	**
Thallium	ug/L	OW-403B	08/24/2015	ND	0.0325	0.2600	**
Thallium	ug/L	OW-403B	03/10/2016	ND	0.0255	0.2600	**
Thallium	ug/L	OW-403B	09/14/2016	ND	0.0255	0.2600	**
Thallium	ug/L	OW-403B	03/20/2017	ND	0.0644	0.2600	**
Thallium	ug/L	OW-403B	09/07/2017	ND	0.0644	0.2600	**
Thallium	ug/L	OW-403B	03/13/2018	ND	0.0644	0.2600	**
Thallium	ug/L	OW-403B	09/24/2018	ND	0.1700	0.2600	**
Thallium	ug/L	OW-403B	04/01/2019	ND	0.2700	0.2600	**
Thallium	ug/L	OW-403B	09/24/2019	ND	0.2700	0.2600	**
Vanadium	ug/L	OW-403B	03/18/2014		2.5900		
Vanadium	ug/L	OW-403B	08/26/2014		1.2300		
Vanadium	ug/L	OW-403B	03/11/2015		0.8660		
Vanadium	ug/L	OW-403B	08/24/2015		0.9760		
Vanadium	ug/L	OW-403B	03/10/2016		0.5180		
Vanadium	ug/L	OW-403B	09/14/2016	ND	0.2550		*
Vanadium	ug/L	OW-403B	03/20/2017	ND	0.8400	1.1000	**
Vanadium	ug/L	OW-403B	09/07/2017		0.8780		
Vanadium	ug/L	OW-403B	03/13/2018		0.8710		
Vanadium	ug/L	OW-403B	09/24/2018		0.8380		
Vanadium	ug/L	OW-403B	04/01/2019	ND	0.8200	1.1000	**
Vanadium	ug/L	OW-403B	09/24/2019	ND	0.8200	1.1000	**
Vinyl chloride	ug/L	OW-403B	03/18/2014	ND	0.1000	0.1800	**
Vinyl chloride	ug/L	OW-403B	08/26/2014	ND	0.1000	0.1800	**
Vinyl chloride	ug/L	OW-403B	03/11/2015	ND	0.1000	0.1800	**
Vinyl chloride	ug/L	OW-403B	08/24/2015	ND	0.1000	0.1800	**
Vinyl chloride	ug/L	OW-403B	03/10/2016	ND	0.1000	0.1800	**
Vinyl chloride	ug/L	OW-403B	09/14/2016	ND	0.1000	0.1800	**

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Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Vinyl chloride	ug/L	OW-403B	03/20/2017	ND	0.1000	0.1800	**
Vinyl chloride	ug/L	OW-403B	09/07/2017	ND	0.1000	0.1800	**
Vinyl chloride	ug/L	OW-403B	03/13/2018	ND	0.1000	0.1800	**
Vinyl chloride	ug/L	OW-403B	09/24/2018	ND	0.6000		*
Vinyl chloride	ug/L	OW-403B	04/01/2019	ND	0.6000		*
Vinyl chloride	ug/L	OW-403B	09/24/2019	ND	0.1800		
Zinc	ug/L	OW-403B	03/18/2014	ND	2.0000	10.0000	**
Zinc	ug/L	OW-403B	08/26/2014		8.3100		
Zinc	ug/L	OW-403B	03/11/2015	ND	6.9500	10.0000	**
Zinc	ug/L	OW-403B	08/24/2015	ND	6.9500	10.0000	**
Zinc	ug/L	OW-403B	03/10/2016	ND	5.2100	10.0000	**
Zinc	ug/L	OW-403B	09/14/2016	ND	5.2100	10.0000	**
Zinc	ug/L	OW-403B	03/20/2017	ND	11.5000	10.0000	**
Zinc	ug/L	OW-403B	09/07/2017	ND	11.5000	10.0000	**
Zinc	ug/L	OW-403B	03/13/2018	ND	11.5000	10.0000	**
Zinc	ug/L	OW-403B	09/24/2018	ND	10.0000		
Zinc	ug/L	OW-403B	04/01/2019	ND	10.0000		
Zinc	ug/L	OW-403B	09/24/2019	ND	10.0000		
1,4-dichlorobenzene	ug/L	OW-405B	03/18/2014	ND	0.2000	0.2300	**
1,4-dichlorobenzene	ug/L	OW-405B	08/27/2014	ND	0.2000	0.2300	**
1,4-dichlorobenzene	ug/L	OW-405B	03/11/2015	ND	0.2000	0.2300	**
1,4-dichlorobenzene	ug/L	OW-405B	08/24/2015	ND	0.2000	0.2300	**
1,4-dichlorobenzene	ug/L	OW-405B	03/07/2016	ND	0.2000	0.2300	**
1,4-dichlorobenzene	ug/L	OW-405B	09/19/2016	ND	0.2000	0.2300	**
1,4-dichlorobenzene	ug/L	OW-405B	03/22/2017	ND	0.2000	0.2300	**
1,4-dichlorobenzene	ug/L	OW-405B	09/06/2017	ND	0.2000	0.2300	**
1,4-dichlorobenzene	ug/L	OW-405B	03/13/2018	ND	0.2000	0.2300	**
1,4-dichlorobenzene	ug/L	OW-405B	08/29/2018	ND	0.2300		
1,4-dichlorobenzene	ug/L	OW-405B	04/01/2019	ND	0.2300		
1,4-dichlorobenzene	ug/L	OW-405B	09/24/2019	ND	0.2300		
Antimony	ug/L	OW-405B	03/18/2014		0.4200		
Antimony	ug/L	OW-405B	08/27/2014		0.2480		
Antimony	ug/L	OW-405B	03/11/2015	ND	0.1610	0.6900	**
Antimony	ug/L	OW-405B	08/24/2015	ND	0.1610	0.6900	**
Antimony	ug/L	OW-405B	03/07/2016	ND	0.2370	0.6900	**
Antimony	ug/L	OW-405B	09/19/2016	ND	0.2370	0.6900	**
Antimony	ug/L	OW-405B	03/22/2017	ND	0.1850	0.6900	**
Antimony	ug/L	OW-405B	09/06/2017	ND	0.1850	0.6900	**
Antimony	ug/L	OW-405B	03/13/2018	ND	0.1850	0.6900	**
Antimony	ug/L	OW-405B	08/29/2018	ND	0.4200	0.6900	**
Antimony	ug/L	OW-405B	04/01/2019	ND	0.5300	0.6900	**
Antimony	ug/L	OW-405B	09/24/2019	ND	0.5300	0.6900	**
Arsenic	ug/L	OW-405B	03/18/2014		1.1100		
Arsenic	ug/L	OW-405B	08/27/2014	ND	0.9450	0.7500	**
Arsenic	ug/L	OW-405B	03/11/2015	ND	0.9450	0.7500	**
Arsenic	ug/L	OW-405B	08/24/2015	ND	0.9450	0.7500	**
Arsenic	ug/L	OW-405B	03/07/2016	ND	0.6720	0.7500	**
Arsenic	ug/L	OW-405B	09/19/2016	ND	0.6720	0.7500	**
Arsenic	ug/L	OW-405B	03/22/2017	ND	0.5050	0.7500	**
Arsenic	ug/L	OW-405B	09/06/2017	ND	0.5050	0.7500	**
Arsenic	ug/L	OW-405B	03/13/2018	ND	0.5050	0.7500	**
Arsenic	ug/L	OW-405B	08/29/2018	ND	0.5700	0.7500	**
Arsenic	ug/L	OW-405B	04/01/2019	ND	0.7500		
Arsenic	ug/L	OW-405B	09/24/2019	ND	0.7500		
Barium	ug/L	OW-405B	03/18/2014		378.0000		
Barium	ug/L	OW-405B	08/27/2014		404.0000		
Barium	ug/L	OW-405B	03/11/2015		367.0000		
Barium	ug/L	OW-405B	08/24/2015		376.0000		
Barium	ug/L	OW-405B	03/07/2016		363.0000		
Barium	ug/L	OW-405B	09/19/2016		411.0000		
Barium	ug/L	OW-405B	03/22/2017		386.0000		
Barium	ug/L	OW-405B	09/06/2017		423.0000		
Barium	ug/L	OW-405B	03/13/2018		325.0000		

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Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Barium	ug/L	OW-405B	07/10/2018		412.0000		
Barium	ug/L	OW-405B	08/29/2018		412.0000		
Barium	ug/L	OW-405B	04/01/2019		409.0000		
Barium	ug/L	OW-405B	09/24/2019		484.0000		
Benzene	ug/L	OW-405B	03/18/2014	ND	0.1100	0.2200	**
Benzene	ug/L	OW-405B	08/27/2014	ND	0.1100	0.2200	**
Benzene	ug/L	OW-405B	03/11/2015	ND	0.1100	0.2200	**
Benzene	ug/L	OW-405B	08/24/2015	ND	0.1100	0.2200	**
Benzene	ug/L	OW-405B	03/07/2016	ND	0.1100	0.2200	**
Benzene	ug/L	OW-405B	09/19/2016	ND	0.1100	0.2200	**
Benzene	ug/L	OW-405B	03/22/2017	ND	0.1100	0.2200	**
Benzene	ug/L	OW-405B	09/06/2017	ND	0.1100	0.2200	**
Benzene	ug/L	OW-405B	03/13/2018	ND	0.1100	0.2200	**
Benzene	ug/L	OW-405B	08/29/2018	ND	0.2200		
Benzene	ug/L	OW-405B	04/01/2019	ND	0.2200		
Benzene	ug/L	OW-405B	09/24/2019	ND	0.2200		
Beryllium	ug/L	OW-405B	03/18/2014		0.1210		
Beryllium	ug/L	OW-405B	08/27/2014	ND	0.0390	0.2700	**
Beryllium	ug/L	OW-405B	03/11/2015	ND	0.0390	0.2700	**
Beryllium	ug/L	OW-405B	08/24/2015	ND	0.0390	0.2700	**
Beryllium	ug/L	OW-405B	03/07/2016	ND	0.2210	0.2700	**
Beryllium	ug/L	OW-405B	09/19/2016	ND	0.2210	0.2700	**
Beryllium	ug/L	OW-405B	03/22/2017	ND	0.1250	0.2700	**
Beryllium	ug/L	OW-405B	09/06/2017	ND	0.1250	0.2700	**
Beryllium	ug/L	OW-405B	03/13/2018	ND	0.1250	0.2700	**
Beryllium	ug/L	OW-405B	08/29/2018	ND	0.1900	0.2700	**
Beryllium	ug/L	OW-405B	04/01/2019	ND	0.2700		
Beryllium	ug/L	OW-405B	09/24/2019	ND	0.2700		
Cadmium	ug/L	OW-405B	03/18/2014		0.1360		
Cadmium	ug/L	OW-405B	08/27/2014	ND	0.1120	0.0550	**
Cadmium	ug/L	OW-405B	03/11/2015	ND	0.1120	0.0550	**
Cadmium	ug/L	OW-405B	08/24/2015	ND	0.1120	0.0550	**
Cadmium	ug/L	OW-405B	03/07/2016		0.0530		
Cadmium	ug/L	OW-405B	09/19/2016		0.0460		
Cadmium	ug/L	OW-405B	03/22/2017	ND	0.0441	0.0550	**
Cadmium	ug/L	OW-405B	09/06/2017	ND	0.0441	0.0550	**
Cadmium	ug/L	OW-405B	03/13/2018	ND	0.0441	0.0550	**
Cadmium	ug/L	OW-405B	08/29/2018	ND	0.0600	0.0550	**
Cadmium	ug/L	OW-405B	04/01/2019	ND	0.0770	0.0550	**
Cadmium	ug/L	OW-405B	09/24/2019	ND	0.0390	0.0550	**
Chromium	ug/L	OW-405B	03/18/2014		6.5900		
Chromium	ug/L	OW-405B	08/27/2014	ND	1.2400	1.1000	**
Chromium	ug/L	OW-405B	03/11/2015	ND	1.2400	1.1000	**
Chromium	ug/L	OW-405B	08/24/2015	ND	1.2400	1.1000	**
Chromium	ug/L	OW-405B	03/07/2016		1.6700		
Chromium	ug/L	OW-405B	09/19/2016		1.6700		
Chromium	ug/L	OW-405B	03/22/2017		0.9620		
Chromium	ug/L	OW-405B	09/06/2017		1.9400		
Chromium	ug/L	OW-405B	03/13/2018		1.9800		
Chromium	ug/L	OW-405B	08/29/2018		4.2200		
Chromium	ug/L	OW-405B	04/01/2019	ND	0.9800	1.1000	**
Chromium	ug/L	OW-405B	09/24/2019	ND	0.9800	1.1000	**
Cis-1,2-dichloroethylene	ug/L	OW-405B	03/18/2014	ND	0.1300	0.2100	**
Cis-1,2-dichloroethylene	ug/L	OW-405B	08/27/2014	ND	0.1300	0.2100	**
Cis-1,2-dichloroethylene	ug/L	OW-405B	03/11/2015	ND	0.1300	0.2100	**
Cis-1,2-dichloroethylene	ug/L	OW-405B	08/24/2015	ND	0.1300	0.2100	**
Cis-1,2-dichloroethylene	ug/L	OW-405B	03/07/2016	ND	0.1300	0.2100	**
Cis-1,2-dichloroethylene	ug/L	OW-405B	09/19/2016	ND	0.1300	0.2100	**
Cis-1,2-dichloroethylene	ug/L	OW-405B	03/22/2017	ND	0.1300	0.2100	**
Cis-1,2-dichloroethylene	ug/L	OW-405B	09/06/2017	ND	0.1300	0.2100	**
Cis-1,2-dichloroethylene	ug/L	OW-405B	03/13/2018	ND	0.1300	0.2100	**
Cis-1,2-dichloroethylene	ug/L	OW-405B	08/29/2018	ND	0.2100		
Cis-1,2-dichloroethylene	ug/L	OW-405B	04/01/2019	ND	0.2100		

* - Outlier for that well and constituent.
** - ND value replaced with median RL.
*** - ND value replaced with manual RL.
ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Cis-1,2-dichloroethylene	ug/L	OW-405B	09/24/2019	ND	0.2100		
Cobalt	ug/L	OW-405B	03/18/2014		3.7600		
Cobalt	ug/L	OW-405B	08/27/2014		0.4010		
Cobalt	ug/L	OW-405B	03/11/2015		0.1160		
Cobalt	ug/L	OW-405B	08/24/2015		0.4330		
Cobalt	ug/L	OW-405B	03/07/2016		0.3870		
Cobalt	ug/L	OW-405B	09/19/2016		0.6330		
Cobalt	ug/L	OW-405B	03/22/2017		0.0860		
Cobalt	ug/L	OW-405B	09/06/2017		0.5990		
Cobalt	ug/L	OW-405B	03/13/2018		0.1150		
Cobalt	ug/L	OW-405B	08/29/2018		0.2140		
Cobalt	ug/L	OW-405B	04/01/2019	ND	0.0910	0.1900	**
Cobalt	ug/L	OW-405B	09/24/2019		1.6500		
Copper	ug/L	OW-405B	03/18/2014		11.5000		
Copper	ug/L	OW-405B	08/27/2014		0.7530		
Copper	ug/L	OW-405B	03/11/2015	ND	0.4850	1.8000	**
Copper	ug/L	OW-405B	08/24/2015	ND	0.4850	1.8000	**
Copper	ug/L	OW-405B	03/07/2016	ND	1.2200	1.8000	**
Copper	ug/L	OW-405B	09/19/2016	ND	1.2200	1.8000	**
Copper	ug/L	OW-405B	03/22/2017	ND	2.1900	1.8000	**
Copper	ug/L	OW-405B	09/06/2017	ND	2.1900	1.8000	**
Copper	ug/L	OW-405B	03/13/2018	ND	2.1900	1.8000	**
Copper	ug/L	OW-405B	08/29/2018	ND	1.6000	1.8000	**
Copper	ug/L	OW-405B	04/01/2019	ND	2.0000	1.8000	**
Copper	ug/L	OW-405B	09/24/2019	ND	2.0000	1.8000	**
Lead	ug/L	OW-405B	03/18/2014		1.4800		
Lead	ug/L	OW-405B	08/27/2014		0.1380		
Lead	ug/L	OW-405B	03/11/2015	ND	0.0967	0.2400	**
Lead	ug/L	OW-405B	08/24/2015	ND	0.0967	0.2400	**
Lead	ug/L	OW-405B	03/07/2016	ND	0.2110	0.2400	**
Lead	ug/L	OW-405B	09/19/2016	ND	0.2110	0.2400	**
Lead	ug/L	OW-405B	03/22/2017	ND	0.3240	0.2400	**
Lead	ug/L	OW-405B	09/06/2017	ND	0.3240	0.2400	**
Lead	ug/L	OW-405B	03/13/2018	ND	0.3240	0.2400	**
Lead	ug/L	OW-405B	08/29/2018	ND	0.2500	0.2400	**
Lead	ug/L	OW-405B	04/01/2019	ND	0.2700	0.2400	**
Lead	ug/L	OW-405B	09/24/2019	ND	0.2700	0.2400	**
Nickel	ug/L	OW-405B	03/18/2014		9.0900		
Nickel	ug/L	OW-405B	08/27/2014		3.2500		
Nickel	ug/L	OW-405B	03/11/2015		1.5900		
Nickel	ug/L	OW-405B	08/24/2015		2.7700		
Nickel	ug/L	OW-405B	03/07/2016	ND	1.5300	1.9000	**
Nickel	ug/L	OW-405B	09/19/2016		5.7200		
Nickel	ug/L	OW-405B	03/22/2017		2.3700		
Nickel	ug/L	OW-405B	09/06/2017		6.5400		
Nickel	ug/L	OW-405B	03/13/2018		1.5000		
Nickel	ug/L	OW-405B	08/29/2018		3.6400		
Nickel	ug/L	OW-405B	04/01/2019	ND	1.7000	1.9000	**
Nickel	ug/L	OW-405B	09/24/2019		24.2000		
Selenium	ug/L	OW-405B	03/18/2014	ND	0.7000	0.9600	**
Selenium	ug/L	OW-405B	08/27/2014	ND	3.3400		*
Selenium	ug/L	OW-405B	03/11/2015	ND	3.3400		*
Selenium	ug/L	OW-405B	08/24/2015	ND	3.3400		*
Selenium	ug/L	OW-405B	03/07/2016	ND	0.6300	0.9600	**
Selenium	ug/L	OW-405B	09/19/2016	ND	0.6300	0.9600	**
Selenium	ug/L	OW-405B	03/22/2017	ND	0.9280	0.9600	**
Selenium	ug/L	OW-405B	09/06/2017	ND	0.9280	0.9600	**
Selenium	ug/L	OW-405B	03/13/2018	ND	0.9280	0.9600	**
Selenium	ug/L	OW-405B	08/29/2018	ND	0.9000	0.9600	**
Selenium	ug/L	OW-405B	04/01/2019	ND	1.0000	0.9600	**
Selenium	ug/L	OW-405B	09/24/2019	ND	1.0000	0.9600	**
Silver	ug/L	OW-405B	03/18/2014	ND	0.0330	0.3700	**
Silver	ug/L	OW-405B	08/27/2014	ND	0.0420	0.3700	**

* - Outlier for that well and constituent.
** - ND value replaced with median RL.
*** - ND value replaced with manual RL.
ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Silver	ug/L	OW-405B	03/11/2015	ND	0.0420	0.3700	**
Silver	ug/L	OW-405B	08/24/2015	ND	0.0420	0.3700	**
Silver	ug/L	OW-405B	03/07/2016	ND	0.1530	0.3700	**
Silver	ug/L	OW-405B	09/19/2016	ND	0.1530	0.3700	**
Silver	ug/L	OW-405B	03/22/2017	ND	0.1400	0.3700	**
Silver	ug/L	OW-405B	09/06/2017	ND	0.1400	0.3700	**
Silver	ug/L	OW-405B	03/13/2018	ND	0.1400	0.3700	**
Silver	ug/L	OW-405B	08/29/2018		0.3120		
Silver	ug/L	OW-405B	04/01/2019	ND	0.3700		
Silver	ug/L	OW-405B	09/24/2019	ND	0.3700		
Thallium	ug/L	OW-405B	03/18/2014		0.0519		
Thallium	ug/L	OW-405B	08/27/2014	ND	0.0325	0.2600	**
Thallium	ug/L	OW-405B	03/11/2015	ND	0.0325	0.2600	**
Thallium	ug/L	OW-405B	08/24/2015		0.0380		
Thallium	ug/L	OW-405B	03/07/2016	ND	0.0255	0.2600	**
Thallium	ug/L	OW-405B	09/19/2016	ND	0.0255	0.2600	**
Thallium	ug/L	OW-405B	03/22/2017	ND	0.0644	0.2600	**
Thallium	ug/L	OW-405B	09/06/2017	ND	0.0644	0.2600	**
Thallium	ug/L	OW-405B	03/13/2018	ND	0.0644	0.2600	**
Thallium	ug/L	OW-405B	08/29/2018	ND	0.1700	0.2600	**
Thallium	ug/L	OW-405B	04/01/2019	ND	0.2700	0.2600	**
Thallium	ug/L	OW-405B	09/24/2019	ND	0.2700	0.2600	**
Vanadium	ug/L	OW-405B	03/18/2014		4.9600		*
Vanadium	ug/L	OW-405B	08/27/2014		0.6950		
Vanadium	ug/L	OW-405B	03/11/2015		0.4570		
Vanadium	ug/L	OW-405B	08/24/2015		0.4830		
Vanadium	ug/L	OW-405B	03/07/2016		0.5840		
Vanadium	ug/L	OW-405B	09/19/2016		0.5240		
Vanadium	ug/L	OW-405B	03/22/2017	ND	0.8400	1.1000	**
Vanadium	ug/L	OW-405B	09/06/2017	ND	0.8400	1.1000	**
Vanadium	ug/L	OW-405B	03/13/2018	ND	0.8400	1.1000	**
Vanadium	ug/L	OW-405B	08/29/2018		0.6280		
Vanadium	ug/L	OW-405B	04/01/2019	ND	0.8200	1.1000	**
Vanadium	ug/L	OW-405B	09/24/2019	ND	0.8200	1.1000	**
Vinyl chloride	ug/L	OW-405B	03/18/2014	ND	0.1000	0.1800	**
Vinyl chloride	ug/L	OW-405B	08/27/2014	ND	0.1000	0.1800	**
Vinyl chloride	ug/L	OW-405B	03/11/2015	ND	0.1000	0.1800	**
Vinyl chloride	ug/L	OW-405B	08/24/2015	ND	0.1000	0.1800	**
Vinyl chloride	ug/L	OW-405B	03/07/2016	ND	0.1000	0.1800	**
Vinyl chloride	ug/L	OW-405B	09/19/2016	ND	0.1000	0.1800	**
Vinyl chloride	ug/L	OW-405B	03/22/2017	ND	0.1000	0.1800	**
Vinyl chloride	ug/L	OW-405B	09/06/2017	ND	0.1000	0.1800	**
Vinyl chloride	ug/L	OW-405B	03/13/2018	ND	0.1000	0.1800	**
Vinyl chloride	ug/L	OW-405B	08/29/2018	ND	0.6000		*
Vinyl chloride	ug/L	OW-405B	04/01/2019	ND	0.6000		*
Vinyl chloride	ug/L	OW-405B	09/24/2019	ND	0.1800		
Zinc	ug/L	OW-405B	03/18/2014		15.4000		
Zinc	ug/L	OW-405B	08/27/2014	ND	6.9500	10.0000	**
Zinc	ug/L	OW-405B	03/11/2015	ND	6.9500	10.0000	**
Zinc	ug/L	OW-405B	08/24/2015	ND	6.9500	10.0000	**
Zinc	ug/L	OW-405B	03/07/2016	ND	5.2100	10.0000	**
Zinc	ug/L	OW-405B	09/19/2016	ND	5.2100	10.0000	**
Zinc	ug/L	OW-405B	03/22/2017		21.0000		
Zinc	ug/L	OW-405B	09/06/2017	ND	11.5000	10.0000	**
Zinc	ug/L	OW-405B	03/13/2018	ND	11.5000	10.0000	**
Zinc	ug/L	OW-405B	08/29/2018	ND	10.0000		
Zinc	ug/L	OW-405B	04/01/2019	ND	10.0000		
Zinc	ug/L	OW-405B	09/24/2019	ND	10.0000		

* - Outlier for that well and constituent.
** - ND value replaced with median RL.
*** - ND value replaced with manual RL.
ND = Not detected, Result = detection limit.

Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
1,4-dichlorobenzene	ug/L	MW-409B	10/25/2024	ND	0.2300		0.4270
Antimony	ug/L	MW-409B	10/25/2024	ND	1.0000		0.6900
Arsenic	ug/L	MW-409B	10/25/2024		5.0600	*	4.1800
Barium	ug/L	MW-409B	10/25/2024		28.7000		484.0000
Benzene	ug/L	MW-409B	10/25/2024	ND	0.2200		0.2290
Beryllium	ug/L	MW-409B	10/25/2024	ND	0.3300		0.2700
Beta-bhc	ug/L	MW-409B	11/09/2022	ND	0.0394		0.0177
Cadmium	ug/L	MW-409B	10/25/2024	ND	0.1000		12.2000
Chromium	ug/L	MW-409B	10/25/2024	ND	1.2000		27.0000
Cis-1,2-dichloroethylene	ug/L	MW-409B	10/25/2024	ND	0.2100		0.2960
Cobalt	ug/L	MW-409B	10/25/2024		7.8800	***	5.7900
Copper	ug/L	MW-409B	10/25/2024	ND	1.8000		11.5000
Lead	ug/L	MW-409B	10/25/2024	ND	0.2600		1.4800
Mercury	ug/L	MW-409B	11/09/2022	ND	0.1100		*****
Nickel	ug/L	MW-409B	10/25/2024		6.6600		55.9916
Selenium	ug/L	MW-409B	10/25/2024	ND	1.4000		2.2300
Silver	ug/L	MW-409B	10/25/2024	ND	0.5000		0.3700
Thallium	ug/L	MW-409B	10/25/2024	ND	0.5700		0.2600
Vanadium	ug/L	MW-409B	10/25/2024	ND	1.1000		2.5900
Vinyl chloride	ug/L	MW-409B	10/25/2024	ND	0.1800		0.1800
Zinc	ug/L	MW-409B	10/25/2024	ND	9.7000		28.4000
1,4-dichlorobenzene	ug/L	MW-501B	10/21/2024	ND	0.2300		0.4270
Antimony	ug/L	MW-501B	10/21/2024	ND	1.0000		0.6900
Arsenic	ug/L	MW-501B	10/21/2024	ND	0.5300		4.1800
Barium	ug/L	MW-501B	10/21/2024		128.0000		484.0000
Benzene	ug/L	MW-501B	10/21/2024	ND	0.2200		0.2290
Beryllium	ug/L	MW-501B	10/21/2024	ND	0.3300		0.2700
Beta-bhc	ug/L	MW-501B	09/22/2020	ND	0.0054		0.0177
Cadmium	ug/L	MW-501B	10/21/2024	ND	0.1000		12.2000
Chromium	ug/L	MW-501B	10/21/2024	ND	1.2000		27.0000
Cis-1,2-dichloroethylene	ug/L	MW-501B	10/21/2024	ND	0.2100		0.2960
Cobalt	ug/L	MW-501B	10/21/2024	ND	0.1700		5.7900
Copper	ug/L	MW-501B	10/21/2024	ND	1.8000		11.5000
Lead	ug/L	MW-501B	10/21/2024	ND	0.2600		1.4800
Mercury	ug/L	MW-501B	09/22/2020	ND	0.1000		*****
Nickel	ug/L	MW-501B	10/21/2024		14.0000		55.9916
Selenium	ug/L	MW-501B	10/21/2024	ND	1.4000		2.2300
Silver	ug/L	MW-501B	10/21/2024	ND	0.5000		0.3700
Thallium	ug/L	MW-501B	10/21/2024	ND	0.5700		0.2600
Vanadium	ug/L	MW-501B	10/21/2024	ND	1.1000		2.5900
Vinyl chloride	ug/L	MW-501B	10/21/2024	ND	0.1800		0.1800
Zinc	ug/L	MW-501B	10/21/2024	ND	9.7000		28.4000
1,4-dichlorobenzene	ug/L	MW-602B	10/21/2024	ND	0.2300		0.4270
Antimony	ug/L	MW-602B	10/21/2024	ND	1.0000		0.6900
Arsenic	ug/L	MW-602B	10/21/2024	ND	0.5300		4.1800
Barium	ug/L	MW-602B	10/21/2024		109.0000		484.0000
Benzene	ug/L	MW-602B	10/21/2024	ND	0.2200		0.2290
Beryllium	ug/L	MW-602B	10/21/2024	ND	0.3300		0.2700
Cadmium	ug/L	MW-602B	10/21/2024	ND	0.1000		12.2000
Chromium	ug/L	MW-602B	10/21/2024	ND	1.2000		27.0000
Cis-1,2-dichloroethylene	ug/L	MW-602B	10/21/2024	ND	0.2100		0.2960
Cobalt	ug/L	MW-602B	10/21/2024		1.9900		5.7900
Copper	ug/L	MW-602B	10/21/2024	ND	1.8000		11.5000
Lead	ug/L	MW-602B	10/21/2024	ND	0.2600		1.4800
Nickel	ug/L	MW-602B	10/21/2024		27.5000		55.9916
Selenium	ug/L	MW-602B	10/21/2024	ND	1.4000		2.2300
Silver	ug/L	MW-602B	10/21/2024	ND	0.5000		0.3700
Thallium	ug/L	MW-602B	10/21/2024	ND	0.5700		0.2600
Vanadium	ug/L	MW-602B	10/21/2024	ND	1.1000		2.5900
Vinyl chloride	ug/L	MW-602B	10/21/2024	ND	0.1800		0.1800
Zinc	ug/L	MW-602B	10/21/2024	ND	9.7000		28.4000

* - Current value failed - awaiting verification.
** - Current value passed - previous exceedance not verified.
*** - Current value failed - exceedance verified.
**** - Current value passed - awaiting one more verification.
***** - Insufficient background data to compute prediction limit.
ND = Not Detected, Result = detection limit.

Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
1,4-dichlorobenzene	ug/L	MW-603B	10/21/2024	ND	0.2300		0.4270
Antimony	ug/L	MW-603B	10/21/2024	ND	1.0000		0.6900
Arsenic	ug/L	MW-603B	10/21/2024	ND	0.5300		4.1800
Barium	ug/L	MW-603B	10/21/2024		34.3000		484.0000
Benzene	ug/L	MW-603B	10/21/2024	ND	0.2200		0.2290
Beryllium	ug/L	MW-603B	10/21/2024	ND	0.3300		0.2700
Cadmium	ug/L	MW-603B	10/21/2024	ND	0.1000		12.2000
Chromium	ug/L	MW-603B	10/21/2024	ND	1.2000		27.0000
Cis-1,2-dichloroethylene	ug/L	MW-603B	10/21/2024	ND	0.2100		0.2960
Cobalt	ug/L	MW-603B	10/21/2024	ND	0.1700		5.7900
Copper	ug/L	MW-603B	10/21/2024	ND	1.8000		11.5000
Lead	ug/L	MW-603B	10/21/2024	ND	0.2600		1.4800
Nickel	ug/L	MW-603B	10/21/2024	ND	2.1000		55.9916
Selenium	ug/L	MW-603B	10/21/2024	ND	1.4000		2.2300
Silver	ug/L	MW-603B	10/21/2024	ND	0.5000		0.3700
Thallium	ug/L	MW-603B	10/21/2024	ND	0.5700		0.2600
Vanadium	ug/L	MW-603B	10/21/2024	ND	1.1000		2.5900
Vinyl chloride	ug/L	MW-603B	10/21/2024	ND	0.1800		0.1800
Zinc	ug/L	MW-603B	10/21/2024	ND	9.7000		28.4000
1,4-dichlorobenzene	ug/L	MW-604B	10/21/2024	ND	0.2300		0.4270
Antimony	ug/L	MW-604B	10/21/2024	ND	1.0000		0.6900
Arsenic	ug/L	MW-604B	10/21/2024	ND	0.5300		4.1800
Barium	ug/L	MW-604B	10/21/2024		77.5000		484.0000
Benzene	ug/L	MW-604B	10/21/2024	ND	0.2200		0.2290
Beryllium	ug/L	MW-604B	10/21/2024	ND	0.3300		0.2700
Cadmium	ug/L	MW-604B	10/21/2024	ND	0.1000		12.2000
Chromium	ug/L	MW-604B	10/21/2024	ND	1.2000		27.0000
Cis-1,2-dichloroethylene	ug/L	MW-604B	10/21/2024	ND	0.2100		0.2960
Cobalt	ug/L	MW-604B	10/21/2024	ND	0.1700		5.7900
Copper	ug/L	MW-604B	10/21/2024	ND	1.8000		11.5000
Lead	ug/L	MW-604B	10/21/2024	ND	0.2600		1.4800
Nickel	ug/L	MW-604B	10/21/2024		5.5000		55.9916
Selenium	ug/L	MW-604B	10/21/2024	ND	1.4000		2.2300
Silver	ug/L	MW-604B	10/21/2024	ND	0.5000		0.3700
Thallium	ug/L	MW-604B	10/21/2024	ND	0.5700		0.2600
Vanadium	ug/L	MW-604B	10/21/2024	ND	1.1000		2.5900
Vinyl chloride	ug/L	MW-604B	10/21/2024	ND	0.1800		0.1800
Zinc	ug/L	MW-604B	10/21/2024	ND	9.7000		28.4000
1,4-dichlorobenzene	ug/L	MW-711B	10/23/2024	ND	0.2300		0.4270
Antimony	ug/L	MW-711B	10/23/2024	ND	1.0000		0.6900
Arsenic	ug/L	MW-711B	10/23/2024	ND	0.5300		4.1800
Barium	ug/L	MW-711B	10/23/2024		40.3000		484.0000
Benzene	ug/L	MW-711B	10/23/2024	ND	0.2200		0.2290
Beryllium	ug/L	MW-711B	10/23/2024	ND	0.3300		0.2700
Cadmium	ug/L	MW-711B	10/23/2024	ND	0.1000		12.2000
Chromium	ug/L	MW-711B	10/23/2024	ND	1.2000		27.0000
Cis-1,2-dichloroethylene	ug/L	MW-711B	10/23/2024	ND	0.2100		0.2960
Cobalt	ug/L	MW-711B	10/23/2024		3.7700		5.7900
Copper	ug/L	MW-711B	10/23/2024	ND	1.8000		11.5000
Lead	ug/L	MW-711B	10/23/2024	ND	0.2600		1.4800
Nickel	ug/L	MW-711B	10/23/2024		14.7000		55.9916
Selenium	ug/L	MW-711B	10/23/2024	ND	1.4000		2.2300
Silver	ug/L	MW-711B	10/23/2024	ND	0.5000		0.3700
Thallium	ug/L	MW-711B	10/23/2024	ND	0.5700		0.2600
Vanadium	ug/L	MW-711B	10/23/2024	ND	1.1000		2.5900
Vinyl chloride	ug/L	MW-711B	10/23/2024	ND	0.1800		0.1800
Zinc	ug/L	MW-711B	10/23/2024	ND	9.7000		28.4000
1,4-dichlorobenzene	ug/L	MW-712B	10/25/2024	ND	0.2300		0.4270
Antimony	ug/L	MW-712B	10/25/2024	ND	1.0000		0.6900
Arsenic	ug/L	MW-712B	10/25/2024	ND	0.5300		4.1800
Barium	ug/L	MW-712B	10/25/2024		68.1000		484.0000

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Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
Benzene	ug/L	MW-712B	10/25/2024	ND	0.2200		0.2290
Beryllium	ug/L	MW-712B	10/25/2024	ND	0.3300		0.2700
Cadmium	ug/L	MW-712B	10/25/2024	ND	0.1000		12.2000
Chromium	ug/L	MW-712B	10/25/2024	ND	1.2000		27.0000
Cis-1,2-dichloroethylene	ug/L	MW-712B	10/25/2024	ND	0.2100		0.2960
Cobalt	ug/L	MW-712B	10/25/2024		5.5900		5.7900
Copper	ug/L	MW-712B	10/25/2024	ND	1.8000		11.5000
Lead	ug/L	MW-712B	10/25/2024	ND	0.2600		1.4800
Nickel	ug/L	MW-712B	10/25/2024		8.5600		55.9916
Selenium	ug/L	MW-712B	10/25/2024	ND	1.4000		2.2300
Silver	ug/L	MW-712B	10/25/2024	ND	0.5000		0.3700
Thallium	ug/L	MW-712B	10/25/2024	ND	0.5700		0.2600
Vanadium	ug/L	MW-712B	10/25/2024	ND	1.1000		2.5900
Vinyl chloride	ug/L	MW-712B	10/25/2024	ND	0.1800		0.1800
Zinc	ug/L	MW-712B	10/25/2024	ND	9.7000		28.4000
1,4-dichlorobenzene	ug/L	OW-101B	10/01/2024	ND	0.2300		0.4270
Antimony	ug/L	OW-101B	10/01/2024	ND	1.0000		0.6900
Arsenic	ug/L	OW-101B	10/01/2024	ND	0.5300		4.1800
Barium	ug/L	OW-101B	10/01/2024		193.0000		484.0000
Benzene	ug/L	OW-101B	10/01/2024	ND	0.2200		0.2290
Beryllium	ug/L	OW-101B	10/01/2024	ND	0.3300		0.2700
Cadmium	ug/L	OW-101B	10/01/2024	ND	0.1000		12.2000
Chromium	ug/L	OW-101B	10/01/2024	ND	1.2000		27.0000
Cis-1,2-dichloroethylene	ug/L	OW-101B	10/01/2024	ND	0.2100		0.2960
Cobalt	ug/L	OW-101B	10/01/2024	ND	0.1700		5.7900
Copper	ug/L	OW-101B	10/01/2024	ND	1.8000		11.5000
Lead	ug/L	OW-101B	10/01/2024	ND	0.2600		1.4800
Nickel	ug/L	OW-101B	10/01/2024	ND	2.1000		55.9916
Selenium	ug/L	OW-101B	10/01/2024	ND	1.4000		2.2300
Silver	ug/L	OW-101B	10/01/2024	ND	0.5000		0.3700
Thallium	ug/L	OW-101B	10/01/2024	ND	0.5700		0.2600
Vanadium	ug/L	OW-101B	10/01/2024	ND	1.1000		2.5900
Vinyl chloride	ug/L	OW-101B	10/01/2024	ND	0.1800		0.1800
Zinc	ug/L	OW-101B	10/01/2024	ND	9.7000		28.4000
1,4-dichlorobenzene	ug/L	OW-105B	10/01/2024	ND	0.2300		0.4270
Antimony	ug/L	OW-105B	10/01/2024	ND	1.0000		0.6900
Arsenic	ug/L	OW-105B	10/01/2024	ND	0.5300		4.1800
Barium	ug/L	OW-105B	10/01/2024		89.0000		484.0000
Benzene	ug/L	OW-105B	10/01/2024	ND	0.2200		0.2290
Beryllium	ug/L	OW-105B	10/01/2024	ND	0.3300		0.2700
Cadmium	ug/L	OW-105B	10/01/2024	ND	0.1000		12.2000
Chromium	ug/L	OW-105B	10/01/2024	ND	1.2000		27.0000
Cis-1,2-dichloroethylene	ug/L	OW-105B	10/01/2024	ND	0.2100		0.2960
Cobalt	ug/L	OW-105B	10/01/2024	ND	0.1700		5.7900
Copper	ug/L	OW-105B	10/01/2024	ND	1.8000		11.5000
Lead	ug/L	OW-105B	10/01/2024	ND	0.2600		1.4800
Nickel	ug/L	OW-105B	10/01/2024	ND	2.1000		55.9916
Selenium	ug/L	OW-105B	10/01/2024	ND	1.4000		2.2300
Silver	ug/L	OW-105B	10/01/2024	ND	0.5000		0.3700
Thallium	ug/L	OW-105B	10/01/2024	ND	0.5700		0.2600
Vanadium	ug/L	OW-105B	10/01/2024	ND	1.1000		2.5900
Vinyl chloride	ug/L	OW-105B	10/01/2024	ND	0.1800		0.1800
Zinc	ug/L	OW-105B	10/01/2024	ND	9.7000		28.4000
1,4-dichlorobenzene	ug/L	OW-113B	10/01/2024	ND	0.2300		0.4270
Antimony	ug/L	OW-113B	10/01/2024	ND	1.0000		0.6900
Arsenic	ug/L	OW-113B	10/01/2024	ND	0.5300		4.1800
Barium	ug/L	OW-113B	10/01/2024		15.8000		484.0000
Benzene	ug/L	OW-113B	10/01/2024	ND	0.2200		0.2290
Beryllium	ug/L	OW-113B	10/01/2024	ND	0.3300		0.2700
Beta-bhc	ug/L	OW-113B	11/03/2022	ND	0.0430		0.0177
Cadmium	ug/L	OW-113B	10/01/2024	ND	0.1000		12.2000

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Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
Chromium	ug/L	OW-113B	10/01/2024	ND	1.2000		27.0000
Cis-1,2-dichloroethylene	ug/L	OW-113B	10/01/2024	ND	0.2100		0.2960
Cobalt	ug/L	OW-113B	10/01/2024		12.6000	***	5.7900
Copper	ug/L	OW-113B	10/01/2024	ND	1.8000		11.5000
Lead	ug/L	OW-113B	10/01/2024	ND	0.2600		1.4800
Mercury	ug/L	OW-113B	11/03/2022	ND	0.1100		*****
Nickel	ug/L	OW-113B	10/01/2024		15.9000		55.9916
Selenium	ug/L	OW-113B	10/01/2024	ND	1.4000		2.2300
Silver	ug/L	OW-113B	10/01/2024	ND	0.5000		0.3700
Thallium	ug/L	OW-113B	10/01/2024	ND	0.5700		0.2600
Vanadium	ug/L	OW-113B	10/01/2024	ND	1.1000		2.5900
Vinyl chloride	ug/L	OW-113B	10/01/2024	ND	0.1800		0.1800
Zinc	ug/L	OW-113B	10/01/2024	ND	9.7000		28.4000
1,4-dichlorobenzene	ug/L	OW-205B	04/24/2024	ND	0.2300		0.4270
Antimony	ug/L	OW-205B	04/24/2024	ND	1.0000		0.6900
Arsenic	ug/L	OW-205B	04/24/2024		9.0600	***	4.1800
Barium	ug/L	OW-205B	04/24/2024		171.0000		484.0000
Benzene	ug/L	OW-205B	04/24/2024	ND	0.2200		0.2290
Beryllium	ug/L	OW-205B	04/24/2024	ND	0.3300		0.2700
Beta-bhc	ug/L	OW-205B	11/08/2022	ND	0.0430		0.0177
Cadmium	ug/L	OW-205B	04/24/2024	ND	0.1000		12.2000
Chromium	ug/L	OW-205B	04/24/2024	ND	1.2000		27.0000
Cis-1,2-dichloroethylene	ug/L	OW-205B	04/24/2024	ND	0.2100		0.2960
Cobalt	ug/L	OW-205B	04/24/2024		3.6900		5.7900
Copper	ug/L	OW-205B	04/24/2024	ND	1.8000		11.5000
Lead	ug/L	OW-205B	04/24/2024	ND	0.2600		1.4800
Mercury	ug/L	OW-205B	11/08/2022	ND	0.1100		*****
Nickel	ug/L	OW-205B	04/24/2024		12.6000		55.9916
Selenium	ug/L	OW-205B	04/24/2024	ND	1.4000		2.2300
Silver	ug/L	OW-205B	04/24/2024	ND	0.5000		0.3700
Thallium	ug/L	OW-205B	04/24/2024	ND	0.5700		0.2600
Vanadium	ug/L	OW-205B	04/24/2024	ND	1.1000		2.5900
Vinyl chloride	ug/L	OW-205B	04/24/2024	ND	0.1800		0.1800
Zinc	ug/L	OW-205B	04/24/2024	ND	9.7000		28.4000
1,4-dichlorobenzene	ug/L	OW-209B	10/02/2024	ND	0.2300		0.4270
Antimony	ug/L	OW-209B	10/02/2024	ND	1.0000		0.6900
Arsenic	ug/L	OW-209B	10/02/2024	ND	0.5300		4.1800
Barium	ug/L	OW-209B	10/02/2024		39.3000		484.0000
Benzene	ug/L	OW-209B	10/02/2024	ND	0.2200		0.2290
Beryllium	ug/L	OW-209B	10/02/2024	ND	0.3300		0.2700
Beta-bhc	ug/L	OW-209B	09/28/2020	ND	0.0056		0.0177
Cadmium	ug/L	OW-209B	10/02/2024	ND	0.1000		12.2000
Chromium	ug/L	OW-209B	10/02/2024	ND	1.2000		27.0000
Cis-1,2-dichloroethylene	ug/L	OW-209B	10/02/2024	ND	0.2100		0.2960
Cobalt	ug/L	OW-209B	10/02/2024	ND	0.1700		5.7900
Copper	ug/L	OW-209B	10/02/2024	ND	1.8000		11.5000
Lead	ug/L	OW-209B	10/02/2024	ND	0.2600		1.4800
Mercury	ug/L	OW-209B	09/28/2020	ND	0.1000		*****
Nickel	ug/L	OW-209B	10/02/2024		7.3900		55.9916
Selenium	ug/L	OW-209B	10/02/2024	ND	1.4000		2.2300
Silver	ug/L	OW-209B	10/02/2024	ND	0.5000		0.3700
Thallium	ug/L	OW-209B	10/02/2024	ND	0.5700		0.2600
Vanadium	ug/L	OW-209B	10/02/2024	ND	1.1000		2.5900
Vinyl chloride	ug/L	OW-209B	10/02/2024	ND	0.1800		0.1800
Zinc	ug/L	OW-209B	10/02/2024	ND	9.7000		28.4000
1,4-dichlorobenzene	ug/L	OW-212B	10/02/2024	ND	0.2300		0.4270
Antimony	ug/L	OW-212B	10/02/2024	ND	1.0000		0.6900
Arsenic	ug/L	OW-212B	10/02/2024	ND	0.5300		4.1800
Barium	ug/L	OW-212B	10/02/2024		22.8000		484.0000
Benzene	ug/L	OW-212B	10/02/2024	ND	0.2200		0.2290
Beryllium	ug/L	OW-212B	10/02/2024	ND	0.3300		0.2700

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Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
Beta-bhc	ug/L	OW-212B	11/08/2022	ND	0.0430		0.0177
Cadmium	ug/L	OW-212B	10/02/2024		0.2470		12.2000
Chromium	ug/L	OW-212B	10/02/2024	ND	1.2000		27.0000
Cis-1,2-dichloroethylene	ug/L	OW-212B	10/02/2024	ND	0.2100		0.2960
Cobalt	ug/L	OW-212B	10/02/2024		20.6000	***	5.7900
Copper	ug/L	OW-212B	10/02/2024	ND	1.8000		11.5000
Lead	ug/L	OW-212B	10/02/2024	ND	0.2600		1.4800
Mercury	ug/L	OW-212B	11/08/2022	ND	0.1100		*****
Nickel	ug/L	OW-212B	10/02/2024		42.4000		55.9916
Selenium	ug/L	OW-212B	10/02/2024	ND	1.4000		2.2300
Silver	ug/L	OW-212B	10/02/2024	ND	0.5000		0.3700
Thallium	ug/L	OW-212B	10/02/2024		1.2400	*	0.2600
Vanadium	ug/L	OW-212B	10/02/2024	ND	1.1000		2.5900
Vinyl chloride	ug/L	OW-212B	10/02/2024	ND	0.1800		0.1800
Zinc	ug/L	OW-212B	10/02/2024	ND	9.7000		28.4000
1,4-dichlorobenzene	ug/L	OW-220B	10/04/2024		2.3500	*	0.4270
Antimony	ug/L	OW-220B	10/04/2024	ND	1.0000		0.6900
Arsenic	ug/L	OW-220B	10/04/2024		25.3000	***	4.1800
Barium	ug/L	OW-220B	10/04/2024		1010.0000	***	484.0000
Benzene	ug/L	OW-220B	10/04/2024		2.2900	***	0.2290
Beryllium	ug/L	OW-220B	10/04/2024	ND	0.3300		0.2700
Beta-bhc	ug/L	OW-220B	11/03/2022	ND	0.0378		0.0177
Cadmium	ug/L	OW-220B	10/04/2024	ND	0.1000		12.2000
Chromium	ug/L	OW-220B	10/04/2024		6.6200		27.0000
Cis-1,2-dichloroethylene	ug/L	OW-220B	10/04/2024	ND	0.2100		0.2960
Cobalt	ug/L	OW-220B	10/04/2024		15.8000	***	5.7900
Copper	ug/L	OW-220B	10/04/2024	ND	1.8000		11.5000
Lead	ug/L	OW-220B	10/04/2024		0.6970		1.4800
Mercury	ug/L	OW-220B	11/03/2022	ND	0.1100		*****
Nickel	ug/L	OW-220B	10/04/2024		130.0000	***	55.9916
Selenium	ug/L	OW-220B	10/04/2024	ND	1.4000		2.2300
Silver	ug/L	OW-220B	10/04/2024	ND	0.5000		0.3700
Thallium	ug/L	OW-220B	10/04/2024		1.5400	*	0.2600
Vanadium	ug/L	OW-220B	10/04/2024	ND	1.1000		2.5900
Vinyl chloride	ug/L	OW-220B	10/04/2024	ND	0.1800		0.1800
Zinc	ug/L	OW-220B	10/04/2024	ND	9.7000		28.4000
1,4-dichlorobenzene	ug/L	OW-221B	10/07/2024	ND	0.2300		0.4270
Antimony	ug/L	OW-221B	10/07/2024	ND	1.0000		0.6900
Arsenic	ug/L	OW-221B	10/07/2024		13.9000	***	4.1800
Barium	ug/L	OW-221B	10/07/2024		575.0000	***	484.0000
Benzene	ug/L	OW-221B	10/07/2024		0.8560	*	0.2290
Beryllium	ug/L	OW-221B	10/07/2024	ND	0.3300		0.2700
Beta-bhc	ug/L	OW-221B	10/26/2022	ND	0.0402		0.0177
Cadmium	ug/L	OW-221B	10/07/2024	ND	0.1000		12.2000
Chromium	ug/L	OW-221B	10/07/2024	ND	1.2000		27.0000
Cis-1,2-dichloroethylene	ug/L	OW-221B	10/07/2024		1.2900	*	0.2960
Cobalt	ug/L	OW-221B	10/07/2024		3.4000		5.7900
Copper	ug/L	OW-221B	10/07/2024	ND	1.8000		11.5000
Lead	ug/L	OW-221B	10/07/2024	ND	0.2600		1.4800
Mercury	ug/L	OW-221B	10/26/2022	ND	0.1100		*****
Nickel	ug/L	OW-221B	10/07/2024	ND	2.1000		55.9916
Selenium	ug/L	OW-221B	10/07/2024	ND	1.4000		2.2300
Silver	ug/L	OW-221B	10/07/2024	ND	0.5000		0.3700
Thallium	ug/L	OW-221B	10/07/2024	ND	0.5700		0.2600
Vanadium	ug/L	OW-221B	10/07/2024	ND	1.1000		2.5900
Vinyl chloride	ug/L	OW-221B	10/07/2024	ND	0.1800		0.1800
Zinc	ug/L	OW-221B	10/07/2024	ND	9.7000		28.4000
1,4-dichlorobenzene	ug/L	OW-222B	10/07/2024	ND	0.2300		0.4270
Antimony	ug/L	OW-222B	10/07/2024	ND	1.0000		0.6900
Arsenic	ug/L	OW-222B	10/07/2024		2.4000		4.1800
Barium	ug/L	OW-222B	10/07/2024		154.0000		484.0000

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Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
Benzene	ug/L	OW-222B	10/07/2024	ND	0.2200		0.2290
Beryllium	ug/L	OW-222B	10/07/2024	ND	0.3300		0.2700
Beta-bhc	ug/L	OW-222B	10/27/2022	ND	0.0420		0.0177
Cadmium	ug/L	OW-222B	10/07/2024	ND	0.1000		12.2000
Chromium	ug/L	OW-222B	10/07/2024	ND	1.2000		27.0000
Cis-1,2-dichloroethylene	ug/L	OW-222B	10/07/2024	ND	0.2100		0.2960
Cobalt	ug/L	OW-222B	10/07/2024		5.2100	**	5.7900
Copper	ug/L	OW-222B	10/07/2024	ND	1.8000		11.5000
Lead	ug/L	OW-222B	10/07/2024	ND	0.2600		1.4800
Mercury	ug/L	OW-222B	10/27/2022	ND	0.1100		*****
Nickel	ug/L	OW-222B	10/07/2024	ND	2.1000		55.9916
Selenium	ug/L	OW-222B	10/07/2024	ND	1.4000		2.2300
Silver	ug/L	OW-222B	10/07/2024	ND	0.5000		0.3700
Thallium	ug/L	OW-222B	10/07/2024	ND	0.5700		0.2600
Vanadium	ug/L	OW-222B	10/07/2024	ND	1.1000		2.5900
Vinyl chloride	ug/L	OW-222B	10/07/2024	ND	0.1800		0.1800
Zinc	ug/L	OW-222B	10/07/2024	ND	9.7000		28.4000
1,4-dichlorobenzene	ug/L	OW-223B	10/08/2024	ND	0.2300		0.4270
Antimony	ug/L	OW-223B	10/08/2024	ND	1.0000		0.6900
Arsenic	ug/L	OW-223B	10/08/2024	ND	0.5300		4.1800
Barium	ug/L	OW-223B	10/08/2024		88.0000		484.0000
Benzene	ug/L	OW-223B	10/08/2024	ND	0.2200		0.2290
Beryllium	ug/L	OW-223B	10/08/2024	ND	0.3300		0.2700
Beta-bhc	ug/L	OW-223B	10/25/2022	ND	0.0420		0.0177
Cadmium	ug/L	OW-223B	10/08/2024	ND	0.1000		12.2000
Chromium	ug/L	OW-223B	10/08/2024	ND	1.2000		27.0000
Cis-1,2-dichloroethylene	ug/L	OW-223B	10/08/2024	ND	0.2100		0.2960
Cobalt	ug/L	OW-223B	10/08/2024	ND	0.1700		5.7900
Copper	ug/L	OW-223B	10/08/2024	ND	1.8000		11.5000
Lead	ug/L	OW-223B	10/08/2024	ND	0.2600		1.4800
Mercury	ug/L	OW-223B	10/25/2022	ND	0.1100		*****
Nickel	ug/L	OW-223B	10/08/2024	ND	2.1000		55.9916
Selenium	ug/L	OW-223B	10/08/2024	ND	1.4000		2.2300
Silver	ug/L	OW-223B	10/08/2024	ND	0.5000		0.3700
Thallium	ug/L	OW-223B	10/08/2024		1.4200	*	0.2600
Vanadium	ug/L	OW-223B	10/08/2024	ND	1.1000		2.5900
Vinyl chloride	ug/L	OW-223B	10/08/2024	ND	0.1800		0.1800
Zinc	ug/L	OW-223B	10/08/2024	ND	9.7000		28.4000
1,4-dichlorobenzene	ug/L	OW-224B	10/07/2024		3.5200	*	0.4270
Antimony	ug/L	OW-224B	10/07/2024	ND	1.0000		0.6900
Arsenic	ug/L	OW-224B	10/07/2024		7.7000	***	4.1800
Barium	ug/L	OW-224B	10/07/2024		2570.0000	***	484.0000
Benzene	ug/L	OW-224B	10/07/2024		4.2100	*	0.2290
Beryllium	ug/L	OW-224B	10/07/2024	ND	0.3300		0.2700
Beta-bhc	ug/L	OW-224B	10/07/2024	ND	0.0401		0.0177
Cadmium	ug/L	OW-224B	10/07/2024		0.2400		12.2000
Chromium	ug/L	OW-224B	10/07/2024		8.2000		27.0000
Cis-1,2-dichloroethylene	ug/L	OW-224B	10/07/2024	ND	0.2100		0.2960
Cobalt	ug/L	OW-224B	10/07/2024		23.0000	***	5.7900
Copper	ug/L	OW-224B	10/07/2024	ND	1.8000		11.5000
Lead	ug/L	OW-224B	10/07/2024		1.7400	*	1.4800
Mercury	ug/L	OW-224B	10/07/2024	ND	0.1100		*****
Nickel	ug/L	OW-224B	10/07/2024		116.0000	***	55.9916
Selenium	ug/L	OW-224B	10/07/2024	ND	1.4000		2.2300
Silver	ug/L	OW-224B	10/07/2024	ND	0.5000		0.3700
Thallium	ug/L	OW-224B	10/07/2024		1.3700	*	0.2600
Vanadium	ug/L	OW-224B	10/07/2024	ND	1.1000		2.5900
Vinyl chloride	ug/L	OW-224B	10/07/2024	ND	0.1800		0.1800
Zinc	ug/L	OW-224B	10/07/2024	ND	9.7000		28.4000
1,4-dichlorobenzene	ug/L	OW-225B	10/08/2024	ND	0.2300		0.4270
Antimony	ug/L	OW-225B	10/08/2024	ND	1.0000		0.6900

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Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
Arsenic	ug/L	OW-225B	10/08/2024		6.2900	***	4.1800
Barium	ug/L	OW-225B	10/08/2024		1380.0000	***	484.0000
Benzene	ug/L	OW-225B	10/08/2024		0.9830	***	0.2290
Beryllium	ug/L	OW-225B	10/08/2024	ND	0.3300		0.2700
Beta-bhc	ug/L	OW-225B	10/08/2024	ND	0.0407		0.0177
Cadmium	ug/L	OW-225B	10/08/2024		0.5020		12.2000
Chromium	ug/L	OW-225B	10/08/2024		10.4000		27.0000
Cis-1,2-dichloroethylene	ug/L	OW-225B	10/08/2024	ND	0.2100		0.2960
Cobalt	ug/L	OW-225B	10/08/2024		30.0000	***	5.7900
Copper	ug/L	OW-225B	10/08/2024	ND	1.8000		11.5000
Lead	ug/L	OW-225B	10/08/2024		1.5500	*	1.4800
Mercury	ug/L	OW-225B	10/08/2024	ND	0.1100		*****
Nickel	ug/L	OW-225B	10/08/2024		124.0000	***	55.9916
Selenium	ug/L	OW-225B	10/08/2024	ND	1.4000		2.2300
Silver	ug/L	OW-225B	10/08/2024	ND	0.5000		0.3700
Thallium	ug/L	OW-225B	10/08/2024	ND	0.5700		0.2600
Vanadium	ug/L	OW-225B	10/08/2024	ND	1.1000		2.5900
Vinyl chloride	ug/L	OW-225B	10/08/2024	ND	0.1800		0.1800
Zinc	ug/L	OW-225B	10/08/2024	ND	9.7000		28.4000
1,4-dichlorobenzene	ug/L	OW-226B	10/09/2024	ND	0.2300		0.4270
Antimony	ug/L	OW-226B	10/09/2024	ND	1.0000		0.6900
Arsenic	ug/L	OW-226B	10/09/2024		10.0000	***	4.1800
Barium	ug/L	OW-226B	10/09/2024		1830.0000	***	484.0000
Benzene	ug/L	OW-226B	10/09/2024		2.5900	***	0.2290
Beryllium	ug/L	OW-226B	10/09/2024	ND	0.3300		0.2700
Beta-bhc	ug/L	OW-226B	10/09/2024	ND	0.0378		0.0177
Cadmium	ug/L	OW-226B	10/09/2024		0.2300		12.2000
Chromium	ug/L	OW-226B	10/09/2024		11.2000		27.0000
Cis-1,2-dichloroethylene	ug/L	OW-226B	10/09/2024	ND	0.2100		0.2960
Cobalt	ug/L	OW-226B	10/09/2024		25.0000	***	5.7900
Copper	ug/L	OW-226B	10/09/2024		5.3500		11.5000
Lead	ug/L	OW-226B	10/09/2024		2.4700	*	1.4800
Mercury	ug/L	OW-226B	10/09/2024	ND	0.1100		*****
Nickel	ug/L	OW-226B	10/09/2024		94.7000	***	55.9916
Selenium	ug/L	OW-226B	10/09/2024	ND	1.4000		2.2300
Silver	ug/L	OW-226B	10/09/2024	ND	0.5000		0.3700
Thallium	ug/L	OW-226B	10/09/2024	ND	0.5700		0.2600
Vanadium	ug/L	OW-226B	10/09/2024	ND	1.1000		2.5900
Vinyl chloride	ug/L	OW-226B	10/09/2024	ND	0.1800		0.1800
Zinc	ug/L	OW-226B	10/09/2024	ND	9.7000		28.4000
1,4-dichlorobenzene	ug/L	OW-227B	10/09/2024	ND	0.2300		0.4270
Antimony	ug/L	OW-227B	10/09/2024	ND	1.0000		0.6900
Arsenic	ug/L	OW-227B	10/09/2024		16.2000	***	4.1800
Barium	ug/L	OW-227B	10/09/2024		2080.0000	***	484.0000
Benzene	ug/L	OW-227B	10/09/2024		2.9200	***	0.2290
Beryllium	ug/L	OW-227B	10/09/2024	ND	0.3300		0.2700
Beta-bhc	ug/L	OW-227B	10/09/2024	ND	0.0369		0.0177
Cadmium	ug/L	OW-227B	10/09/2024	ND	0.1000		12.2000
Chromium	ug/L	OW-227B	10/09/2024		7.4900		27.0000
Cis-1,2-dichloroethylene	ug/L	OW-227B	10/09/2024	ND	0.2100		0.2960
Cobalt	ug/L	OW-227B	10/09/2024		22.1000	***	5.7900
Copper	ug/L	OW-227B	10/09/2024	ND	1.8000		11.5000
Lead	ug/L	OW-227B	10/09/2024		0.5820		1.4800
Mercury	ug/L	OW-227B	10/09/2024	ND	0.1100		*****
Nickel	ug/L	OW-227B	10/09/2024		87.0000	***	55.9916
Selenium	ug/L	OW-227B	10/09/2024	ND	1.4000		2.2300
Silver	ug/L	OW-227B	10/09/2024	ND	0.5000		0.3700
Thallium	ug/L	OW-227B	10/09/2024	ND	0.5700		0.2600
Vanadium	ug/L	OW-227B	10/09/2024	ND	1.1000		2.5900
Vinyl chloride	ug/L	OW-227B	10/09/2024	ND	0.1800		0.1800
Zinc	ug/L	OW-227B	10/09/2024	ND	9.7000		28.4000

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Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
1,4-dichlorobenzene	ug/L	OW-401B	10/15/2024	ND	0.2300	**	0.4270
Antimony	ug/L	OW-401B	10/15/2024	ND	1.0000		0.6900
Arsenic	ug/L	OW-401B	10/15/2024		8.7700	***	4.1800
Barium	ug/L	OW-401B	10/15/2024		1760.0000	***	484.0000
Benzene	ug/L	OW-401B	10/15/2024		3.4600	***	0.2290
Beryllium	ug/L	OW-401B	10/15/2024	ND	0.3300		0.2700
Beta-bhc	ug/L	OW-401B	10/15/2024	ND	0.0407		0.0177
Cadmium	ug/L	OW-401B	10/15/2024	ND	0.1000		12.2000
Chromium	ug/L	OW-401B	10/15/2024	ND	1.2000		27.0000
Cis-1,2-dichloroethylene	ug/L	OW-401B	10/15/2024	ND	0.2100		0.2960
Cobalt	ug/L	OW-401B	10/15/2024		2.8700		5.7900
Copper	ug/L	OW-401B	10/15/2024	ND	1.8000		11.5000
Lead	ug/L	OW-401B	10/15/2024	ND	0.2600		1.4800
Mercury	ug/L	OW-401B	11/09/2022	ND	0.1100		*****
Nickel	ug/L	OW-401B	10/15/2024		38.3000		55.9916
Selenium	ug/L	OW-401B	10/15/2024	ND	1.4000		2.2300
Silver	ug/L	OW-401B	10/15/2024	ND	0.5000		0.3700
Thallium	ug/L	OW-401B	10/15/2024	ND	0.5700		0.2600
Vanadium	ug/L	OW-401B	10/15/2024	ND	1.1000		2.5900
Vinyl chloride	ug/L	OW-401B	10/15/2024	ND	0.1800		0.1800
Zinc	ug/L	OW-401B	10/15/2024	ND	9.7000		28.4000
1,4-dichlorobenzene	ug/L	OW-402B	10/16/2024	ND	0.2300		0.4270
Antimony	ug/L	OW-402B	10/16/2024	ND	1.0000		0.6900
Arsenic	ug/L	OW-402B	10/16/2024	ND	0.5300		4.1800
Barium	ug/L	OW-402B	10/16/2024		988.0000	***	484.0000
Benzene	ug/L	OW-402B	10/16/2024		0.9470	*	0.2290
Beryllium	ug/L	OW-402B	10/16/2024	ND	0.3300		0.2700
Beta-bhc	ug/L	OW-402B	10/16/2024	ND	0.0386		0.0177
Cadmium	ug/L	OW-402B	10/16/2024		0.5140		12.2000
Chromium	ug/L	OW-402B	10/16/2024		8.6400		27.0000
Cis-1,2-dichloroethylene	ug/L	OW-402B	10/16/2024		10.4000	*	0.2960
Cobalt	ug/L	OW-402B	10/16/2024		7.9900	*	5.7900
Copper	ug/L	OW-402B	10/16/2024	ND	1.8000		11.5000
Lead	ug/L	OW-402B	10/16/2024	ND	0.2600		1.4800
Mercury	ug/L	OW-402B	11/09/2022	ND	0.1100		*****
Nickel	ug/L	OW-402B	10/16/2024		353.0000	*	55.9916
Selenium	ug/L	OW-402B	10/16/2024	ND	1.4000		2.2300
Silver	ug/L	OW-402B	10/16/2024	ND	0.5000		0.3700
Thallium	ug/L	OW-402B	10/16/2024	ND	0.5700		0.2600
Vanadium	ug/L	OW-402B	10/16/2024	ND	1.1000		2.5900
Vinyl chloride	ug/L	OW-402B	10/16/2024		1.5500	*	0.1800
Zinc	ug/L	OW-402B	10/16/2024	ND	9.7000		28.4000
1,4-dichlorobenzene	ug/L	OW-410B	05/16/2024	ND	0.2300		0.4270
Antimony	ug/L	OW-410B	05/16/2024	ND	1.0000		0.6900
Arsenic	ug/L	OW-410B	05/16/2024		11.8000	***	4.1800
Barium	ug/L	OW-410B	05/16/2024		2750.0000	***	484.0000
Benzene	ug/L	OW-410B	05/16/2024		2.0200	***	0.2290
Beryllium	ug/L	OW-410B	05/16/2024	ND	0.3300		0.2700
Cadmium	ug/L	OW-410B	05/16/2024	ND	0.4000		12.2000
Chromium	ug/L	OW-410B	05/16/2024	ND	1.2000		27.0000
Cis-1,2-dichloroethylene	ug/L	OW-410B	05/16/2024	ND	0.2100		0.2960
Cobalt	ug/L	OW-410B	05/16/2024		13.8000	***	5.7900
Copper	ug/L	OW-410B	05/16/2024	ND	1.8000		11.5000
Lead	ug/L	OW-410B	05/16/2024	ND	0.2600		1.4800
Nickel	ug/L	OW-410B	05/16/2024		52.1000		55.9916
Selenium	ug/L	OW-410B	05/16/2024	ND	1.4000		2.2300
Silver	ug/L	OW-410B	05/16/2024	ND	0.5000		0.3700
Thallium	ug/L	OW-410B	05/16/2024	ND	0.5700		0.2600
Vanadium	ug/L	OW-410B	05/16/2024	ND	1.1000		2.5900
Vinyl chloride	ug/L	OW-410B	05/16/2024	ND	0.1800		0.1800
Zinc	ug/L	OW-410B	05/16/2024	ND	9.7000		28.4000

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Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
1,4-dichlorobenzene	ug/L	OW-411B	05/15/2024	ND	0.2300		0.4270
Antimony	ug/L	OW-411B	05/15/2024	ND	1.0000		0.6900
Arsenic	ug/L	OW-411B	05/15/2024		4.0700	**	4.1800
Barium	ug/L	OW-411B	05/15/2024		687.0000	*	484.0000
Benzene	ug/L	OW-411B	05/15/2024	ND	0.2200		0.2290
Beryllium	ug/L	OW-411B	05/15/2024	ND	0.3300		0.2700
Cadmium	ug/L	OW-411B	05/15/2024	ND	0.1000		12.2000
Chromium	ug/L	OW-411B	05/15/2024	ND	1.2000		27.0000
Cis-1,2-dichloroethylene	ug/L	OW-411B	05/15/2024	ND	0.2100		0.2960
Cobalt	ug/L	OW-411B	05/15/2024		1.4100		5.7900
Copper	ug/L	OW-411B	05/15/2024	ND	1.8000		11.5000
Lead	ug/L	OW-411B	05/15/2024	ND	0.2600		1.4800
Nickel	ug/L	OW-411B	05/15/2024		28.5000		55.9916
Selenium	ug/L	OW-411B	05/15/2024	ND	1.4000		2.2300
Silver	ug/L	OW-411B	05/15/2024	ND	0.5000		0.3700
Thallium	ug/L	OW-411B	05/15/2024	ND	0.5700		0.2600
Vanadium	ug/L	OW-411B	05/15/2024	ND	1.1000		2.5900
Vinyl chloride	ug/L	OW-411B	05/15/2024	ND	0.1800		0.1800
Zinc	ug/L	OW-411B	05/15/2024	ND	9.7000		28.4000
1,4-dichlorobenzene	ug/L	OW-412B	05/15/2024	ND	0.2300		0.4270
Antimony	ug/L	OW-412B	05/15/2024	ND	1.0000		0.6900
Arsenic	ug/L	OW-412B	05/15/2024		4.1800	**	4.1800
Barium	ug/L	OW-412B	05/15/2024		1390.0000	***	484.0000
Benzene	ug/L	OW-412B	05/15/2024	ND	0.2200	**	0.2290
Beryllium	ug/L	OW-412B	05/15/2024	ND	0.3300		0.2700
Cadmium	ug/L	OW-412B	05/15/2024	ND	0.1000		12.2000
Chromium	ug/L	OW-412B	05/15/2024	ND	1.2000		27.0000
Cis-1,2-dichloroethylene	ug/L	OW-412B	05/15/2024		11.8000	***	0.2960
Cobalt	ug/L	OW-412B	05/15/2024		1.0300		5.7900
Copper	ug/L	OW-412B	05/15/2024	ND	1.8000		11.5000
Lead	ug/L	OW-412B	05/15/2024	ND	0.2600		1.4800
Nickel	ug/L	OW-412B	05/15/2024		20.5000		55.9916
Selenium	ug/L	OW-412B	05/15/2024	ND	1.4000		2.2300
Silver	ug/L	OW-412B	05/15/2024	ND	0.5000		0.3700
Thallium	ug/L	OW-412B	05/15/2024	ND	0.5700	**	0.2600
Vanadium	ug/L	OW-412B	05/15/2024	ND	1.1000		2.5900
Vinyl chloride	ug/L	OW-412B	05/15/2024	ND	0.1800	**	0.1800
Zinc	ug/L	OW-412B	05/15/2024	ND	9.7000		28.4000
1,4-dichlorobenzene	ug/L	OW-413B	10/16/2024	ND	0.2300		0.4270
Antimony	ug/L	OW-413B	10/16/2024	ND	1.0000		0.6900
Arsenic	ug/L	OW-413B	10/16/2024		6.3700	***	4.1800
Barium	ug/L	OW-413B	10/16/2024		544.0000	***	484.0000
Benzene	ug/L	OW-413B	10/16/2024		1.9000	***	0.2290
Beryllium	ug/L	OW-413B	10/16/2024	ND	0.3300		0.2700
Cadmium	ug/L	OW-413B	10/16/2024	ND	0.1000		12.2000
Chromium	ug/L	OW-413B	10/16/2024	ND	1.2000		27.0000
Cis-1,2-dichloroethylene	ug/L	OW-413B	10/16/2024	ND	0.2100		0.2960
Cobalt	ug/L	OW-413B	10/16/2024		2.8200		5.7900
Copper	ug/L	OW-413B	10/16/2024	ND	1.8000		11.5000
Lead	ug/L	OW-413B	10/16/2024	ND	0.2600		1.4800
Nickel	ug/L	OW-413B	10/16/2024		5.0100		55.9916
Selenium	ug/L	OW-413B	10/16/2024	ND	1.4000		2.2300
Silver	ug/L	OW-413B	10/16/2024	ND	0.5000		0.3700
Thallium	ug/L	OW-413B	10/16/2024	ND	0.5700		0.2600
Vanadium	ug/L	OW-413B	10/16/2024	ND	1.1000	**	2.5900
Vinyl chloride	ug/L	OW-413B	10/16/2024	ND	0.1800		0.1800
Zinc	ug/L	OW-413B	10/16/2024	ND	9.7000		28.4000
1,4-dichlorobenzene	ug/L	OW-414B	05/08/2024		1.8400	***	0.4270
Antimony	ug/L	OW-414B	05/08/2024	ND	1.0000		0.6900
Arsenic	ug/L	OW-414B	05/08/2024		9.8500	***	4.1800
Barium	ug/L	OW-414B	05/08/2024		642.0000	*	484.0000

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Table 2

Most Current Downgradient Monitoring Data

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Benzene	ug/L	OW-414B	05/08/2024		1.9800	***	0.2290
Beryllium	ug/L	OW-414B	05/08/2024	ND	0.3300		0.2700
Cadmium	ug/L	OW-414B	05/08/2024	ND	0.1000		12.2000
Chromium	ug/L	OW-414B	05/08/2024	ND	1.2000		27.0000
Cis-1,2-dichloroethylene	ug/L	OW-414B	05/08/2024		6.9800	***	0.2960
Cobalt	ug/L	OW-414B	05/08/2024		19.1000	***	5.7900
Copper	ug/L	OW-414B	05/08/2024	ND	1.8000		11.5000
Lead	ug/L	OW-414B	05/08/2024	ND	0.2600		1.4800
Nickel	ug/L	OW-414B	05/08/2024		67.2000	***	55.9916
Selenium	ug/L	OW-414B	05/08/2024	ND	1.4000		2.2300
Silver	ug/L	OW-414B	05/08/2024	ND	0.5000		0.3700
Thallium	ug/L	OW-414B	05/08/2024	ND	0.5700		0.2600
Vanadium	ug/L	OW-414B	05/08/2024	ND	1.1000		2.5900
Vinyl chloride	ug/L	OW-414B	05/08/2024	ND	0.1800		0.1800
Zinc	ug/L	OW-414B	05/08/2024	ND	9.7000		28.4000

* - Current value failed - awaiting verification.
** - Current value passed - previous exceedance not verified.
*** - Current value failed - exceedance verified.
**** - Current value passed - awaiting one more verification.
***** - Insufficient background data to compute prediction limit.
ND = Not Detected, Result = detection limit.

Table 3

Detection Frequencies in Upgradient and Downgradient Wells

Constituent	Detect	Upgradient N	Proportion	Detect	Downgradient N	Proportion
1,4-dichlorobenzene	2	184	0.011	46	498	0.092
Antimony	13	184	0.071	43	498	0.086
Arsenic	18	181	0.099	236	502	0.470
Barium	184	184	1.000	499	499	1.000
Benzene	1	182	0.005	214	501	0.427
Beryllium	3	181	0.017	9	498	0.018
Beta-bhc	3	15	0.200	21	90	0.233
Cadmium	33	183	0.180	146	501	0.291
Chromium	49	179	0.274	195	499	0.391
Cis-1,2-dichloroethylene	2	184	0.011	134	495	0.271
Cobalt	98	178	0.551	385	505	0.762
Copper	18	173	0.104	141	500	0.282
Lead	13	179	0.073	103	498	0.207
Mercury	0	7	0.000	4	72	0.056
Nickel	105	183	0.574	395	501	0.788
Selenium	8	172	0.047	16	498	0.032
Silver	6	183	0.033	20	498	0.040
Thallium	6	180	0.033	25	499	0.050
Vanadium	33	178	0.185	100	498	0.201
Vinyl chloride	0	172	0.000	73	499	0.146
Zinc	10	180	0.056	66	498	0.133

N = Total number of measurements in all wells.
Detect = Total number of detections in all wells.
Proportion = Detect/N.

Table 4

Shapiro-Wilk Multiple Group Test of Normality

Constituent	Detect	N	Detect Freq	G raw	G log	G cbrt	G sqrt	G sqr	G cub	Crit Value	Dist Form
1,4-dichlorobenzene	2	184	0.011								
Antimony	13	184	0.071	1.006	1.056					2.326	normal
Arsenic	18	181	0.099	0.164	0.247					2.326	normal
Barium	184	184	1.000	5.066	4.620					2.326	non-norm
Benzene	1	182	0.005								
Beryllium	3	181	0.017								
Beta-bhc	3	15	0.200	0.486	0.024					2.326	normal
Cadmium	33	183	0.180	2.948	2.143					2.326	lognor
Chromium	49	179	0.274	1.725	0.426					2.326	normal
Cis-1,2-dichloroethylene	2	184	0.011								
Cobalt	98	178	0.551	4.157	0.202					2.326	lognor
Copper	18	173	0.104	0.101	0.191					2.326	normal
Lead	13	179	0.073	0.140	0.178					2.326	normal
Mercury	0	7	0.000								
Nickel	105	183	0.574	5.105	2.297					2.326	lognor
Selenium	8	172	0.047	1.962	1.535					2.326	normal
Silver	6	183	0.033								
Thallium	6	180	0.033	0.454	0.341					2.326	normal
Vanadium	33	178	0.185	0.146	1.017					2.326	normal
Vinyl chloride	0	172	0.000								
Zinc	10	180	0.056	0.041	1.280					2.326	normal

* - Distribution override for that constituent.
Fit to distribution is confirmed if G <= critical value.
Model type may not match distributional form when detection frequency < 50%.

Table 4

Shapiro-Wilk Multiple Group Test of Normality

Constituent	Model Type
1,4-dichlorobenzene	nonpar
Antimony	nonpar
Arsenic	nonpar
Barium	nonpar
Benzene	nonpar
Beryllium	nonpar
Beta-bhc	nonpar
Cadmium	nonpar
Chromium	nonpar
Cis-1,2-dichloroethylene	nonpar
Cobalt	lognor
Copper	nonpar
Lead	nonpar
Mercury	too few
Nickel	lognor
Selenium	nonpar
Silver	nonpar
Thallium	nonpar
Vanadium	nonpar
Vinyl chloride	nonpar
Zinc	nonpar

* - Distribution override for that constituent.
Fit to distribution is confirmed if G <= critical value.
Model type may not match distributional form when detection frequency < 50%.

Table 5

Summary Statistics and Prediction Limits

Constituent	Units	Detect	N	Mean	SD	alpha	Factor	Pred Limit	Type		Conf
1,4-dichlorobenzene	ug/L	2	184					0.4270	nonpar		0.99
Antimony	ug/L	13	184					0.6900	nonpar	***	0.99
Arsenic	ug/L	18	181					4.1800	nonpar		0.99
Barium	ug/L	184	184					484.0000	nonpar		0.99
Benzene	ug/L	1	182					0.2290	nonpar		0.99
Beryllium	ug/L	3	181					0.2700	nonpar	***	0.99
Beta-bhc	ug/L	3	15					0.0177	nonpar		0.97
Cadmium	ug/L	33	183					12.2000	nonpar		0.99
Chromium	ug/L	49	179					27.0000	nonpar		0.99
Cis-1,2-dichloroethylene	ug/L	2	184					0.2960	nonpar		0.99
Cobalt	ug/L	98	178	-0.1274	1.0973	0.0443	1.7165	5.7900	lognor		
Copper	ug/L	18	173					11.5000	nonpar		0.99
Lead	ug/L	13	179					1.4800	nonpar		0.99
Mercury	ug/L	0	7							*	
Nickel	ug/L	105	183	1.3276	1.5719	0.0443	1.7161	55.9916	lognor		
Selenium	ug/L	8	172					2.2300	nonpar		0.99
Silver	ug/L	6	183					0.3700	nonpar	***	0.99
Thallium	ug/L	6	180					0.2600	nonpar	***	0.99
Vanadium	ug/L	33	178					2.5900	nonpar		0.99
Vinyl chloride	ug/L	0	172					0.1800	nonpar	***	0.99
Zinc	ug/L	10	180					28.4000	nonpar		0.99

Conf = confidence level for passing initial test or one of two verification resamples at all downgradient wells for a single constituent (nonparametric test only).
* - Insufficient Data.
** - Calculated limit raised to Manual Reporting Limit.
*** - Nonparametric limit based on ND value.
For transformed data, mean and SD in transformed units and prediction limit in original units.
All sample sizes and statistics are based on outlier free data.
For nonparametric limits, median reporting limits are substituted for extreme reporting limit values.

Table 6

Dixon's Test Outliers
1% Significance Level

Constituent	Units	Well	Date	Result	ND Qualifier	Date Range	N	Critical Value
Thallium	ug/L	MW-304B	09/26/2023	13.2000		11/03/2022-12/06/2023	5	0.7819
Copper	ug/L	MW-308B	03/18/2014	13.6000		03/18/2014-09/17/2019	12	0.6425
Vinyl chloride	ug/L	MW-308B	08/30/2018	0.6000	< 0.6000	03/18/2014-09/17/2019	12	0.6736
Vinyl chloride	ug/L	MW-308B	04/02/2019	0.6000	< 0.6000	03/18/2014-09/17/2019	12	0.6736
Zinc	ug/L	MW-308B	03/18/2014	2.0000	< 2.0000	03/18/2014-09/17/2019	12	0.6425
Barium	ug/L	MW-319B	03/16/2015	67.6000		03/21/2014-09/20/2023	20	0.5381
Chromium	ug/L	MW-319B	03/21/2014	2920.0000		03/21/2014-09/20/2023	21	0.5263
Copper	ug/L	MW-319B	03/21/2014	13.7000		03/21/2014-09/20/2023	20	0.5381
Copper	ug/L	MW-319B	03/16/2015	0.4850	< 0.4850	03/21/2014-09/20/2023	20	0.5503
Copper	ug/L	MW-319B	09/02/2015	0.4850	< 0.4850	03/21/2014-09/20/2023	20	0.5503
Selenium	ug/L	MW-319B	09/05/2014	3.3400	< 3.3400	03/21/2014-09/20/2023	20	0.5503
Selenium	ug/L	MW-319B	03/16/2015	3.3400	< 3.3400	03/21/2014-09/20/2023	20	0.5503
Selenium	ug/L	MW-319B	09/02/2015	3.3400	< 3.3400	03/21/2014-09/20/2023	20	0.5503
Vanadium	ug/L	MW-319B	03/21/2014	97.5000		03/21/2014-09/20/2023	20	0.5381
Vinyl chloride	ug/L	MW-319B	08/29/2018	0.6000	< 0.6000	03/21/2014-09/20/2023	20	0.5503
Vinyl chloride	ug/L	MW-319B	04/03/2019	0.6000	< 0.6000	03/21/2014-09/20/2023	20	0.5503
Arsenic	ug/L	MW-704B	04/28/2022	3.0000	< 3.0000	10/29/2021-12/14/2022	5	0.7819
Beryllium	ug/L	MW-704B	04/28/2022	1.0800	< 1.0800	10/29/2021-12/14/2022	5	0.7819
Chromium	ug/L	MW-704B	04/28/2022	4.4000	< 4.4000	10/29/2021-12/14/2022	5	0.7819
Copper	ug/L	MW-704B	04/28/2022	7.2000	< 7.2000	10/29/2021-12/14/2022	5	0.7819
Lead	ug/L	MW-704B	04/28/2022	0.9600	< 0.9600	10/29/2021-12/14/2022	5	0.7819
Selenium	ug/L	MW-704B	04/28/2022	3.8400	< 3.8400	10/29/2021-12/14/2022	5	0.7819
Silver	ug/L	MW-704B	04/28/2022	4.6700		10/29/2021-12/14/2022	5	0.7819
Thallium	ug/L	MW-704B	04/28/2022	1.0400	< 1.0400	10/29/2021-12/14/2022	5	0.7819
Vanadium	ug/L	MW-704B	04/28/2022	4.4000	< 4.4000	10/29/2021-12/14/2022	5	0.7819
Zinc	ug/L	MW-704B	04/28/2022	40.0000	< 40.0000	10/29/2021-12/14/2022	5	0.7819
Cobalt	ug/L	MW-705B	10/29/2021	0.8430		10/29/2021-12/14/2022	5	0.7819
Arsenic	ug/L	MW-706B	10/19/2022	13.8000		10/29/2021-02/07/2023	5	0.7819
Beryllium	ug/L	MW-706B	10/19/2022	12.9000		10/29/2021-02/07/2023	5	0.7819
Chromium	ug/L	MW-706B	10/19/2022	67.4000		10/29/2021-02/07/2023	5	0.7819
Cobalt	ug/L	MW-706B	10/29/2021	0.1900	< 0.1900	10/29/2021-02/07/2023	5	0.7819
Copper	ug/L	MW-706B	10/19/2022	24.0000		10/29/2021-02/07/2023	5	0.7819
Lead	ug/L	MW-706B	10/19/2022	3.0900		10/29/2021-02/07/2023	5	0.7819
Selenium	ug/L	MW-706B	10/19/2022	22.9000		10/29/2021-02/07/2023	5	0.7819
Vanadium	ug/L	MW-706B	10/19/2022	6.8600		10/29/2021-02/07/2023	5	0.7819
Zinc	ug/L	MW-706B	10/19/2022	186.0000		10/29/2021-02/07/2023	5	0.7819
Arsenic	ug/L	MW-707B	10/19/2022	7.7400		11/16/2021-02/08/2023	5	0.7819
Beryllium	ug/L	MW-707B	10/19/2022	5.4800		11/16/2021-02/08/2023	5	0.7819
Cadmium	ug/L	MW-707B	10/19/2022	5.6700		11/16/2021-02/08/2023	5	0.7819
Chromium	ug/L	MW-707B	10/19/2022	1680.0000		11/16/2021-02/08/2023	5	0.7819
Cobalt	ug/L	MW-707B	10/19/2022	43.1000		11/16/2021-02/08/2023	5	0.7819
Copper	ug/L	MW-707B	10/19/2022	55.8000		11/16/2021-02/08/2023	5	0.7819
Lead	ug/L	MW-707B	11/16/2021	0.7290		11/16/2021-02/08/2023	5	0.8886
Lead	ug/L	MW-707B	10/19/2022	23.3000		11/16/2021-02/08/2023	5	0.8886
Nickel	ug/L	MW-707B	10/19/2022	159.0000		11/16/2021-02/08/2023	5	0.7819
Selenium	ug/L	MW-707B	10/19/2022	19.4000		11/16/2021-02/08/2023	5	0.7819
Vanadium	ug/L	MW-707B	10/19/2022	19.6000		11/16/2021-02/08/2023	5	0.7819
Zinc	ug/L	MW-707B	10/19/2022	310.0000		11/16/2021-02/08/2023	5	0.7819
Cobalt	ug/L	MW-709B	11/16/2021	3.3400		11/16/2021-09/12/2023	7	0.6371
Thallium	ug/L	MW-709B	04/11/2023	3.8300		11/16/2021-09/12/2023	7	0.6371
Benzene	ug/L	OW-114B	09/20/2018	3.5800		03/18/2014-10/05/2023	21	0.5263
Beta-bhc	ug/L	OW-114B	08/27/2015	0.0367		03/18/2014-03/26/2021	17	0.5973
Beta-bhc	ug/L	OW-114B	09/27/2017	0.0570		03/18/2014-03/26/2021	17	0.5973
Chromium	ug/L	OW-114B	03/28/2016	0.3550	< 0.3550	03/18/2014-10/05/2023	21	0.5381
Chromium	ug/L	OW-114B	12/12/2016	0.3550	< 0.3550	03/18/2014-10/05/2023	21	0.5381
Copper	ug/L	OW-114B	03/12/2015	0.4850	< 0.4850	03/18/2014-10/05/2023	21	0.5263
Lead	ug/L	OW-114B	09/27/2017	0.9790		03/18/2014-10/05/2023	21	0.5263
Vinyl chloride	ug/L	OW-114B	09/20/2018	0.6000	< 0.6000	03/18/2014-10/05/2023	21	0.5381
Vinyl chloride	ug/L	OW-114B	03/27/2019	0.6000	< 0.6000	03/18/2014-10/05/2023	21	0.5381
Benzene	ug/L	OW-216B	03/27/2018	0.7470		03/21/2014-09/26/2023	20	0.5381
Copper	ug/L	OW-216B	03/06/2015	0.4850	< 0.4850	03/21/2014-09/26/2023	20	0.5503
Copper	ug/L	OW-216B	09/01/2015	0.4850	< 0.4850	03/21/2014-09/26/2023	20	0.5503
Selenium	ug/L	OW-216B	09/05/2014	3.3400	< 3.3400	03/21/2014-09/26/2023	20	0.5503

N = Total number of independent measurements in background at each well.
Date Range = Dates of the first and last measurements included in background at each well.
Critical Value depends on the significance level and on N-1 when the two most extreme values are tested or N for the most extreme value.

Table 6

Dixon's Test Outliers
1% Significance Level

Constituent	Units	Well	Date	Result	ND Qualifier	Date Range	N	Critical Value
Selenium	ug/L	OW-216B	03/06/2015	3.3400	< 3.3400	03/21/2014-09/26/2023	20	0.5503
Selenium	ug/L	OW-216B	09/01/2015	3.3400	< 3.3400	03/21/2014-09/26/2023	20	0.5503
Vinyl chloride	ug/L	OW-216B	09/05/2018	0.6000	< 0.6000	03/21/2014-09/26/2023	20	0.5503
Vinyl chloride	ug/L	OW-216B	04/15/2019	0.6000	< 0.6000	03/21/2014-09/26/2023	20	0.5503
Thallium	ug/L	OW-219B	04/18/2023	3.4800		03/25/2020-09/20/2023	10	0.5972
Cobalt	ug/L	OW-403B	03/18/2014	2.7100		03/18/2014-09/24/2019	12	0.6736
Cobalt	ug/L	OW-403B	09/14/2016	7.9000		03/18/2014-09/24/2019	12	0.6736
Copper	ug/L	OW-403B	03/18/2014	9.0200		03/18/2014-09/24/2019	12	0.6425
Nickel	ug/L	OW-403B	09/14/2016	9.3700		03/18/2014-09/24/2019	12	0.6425
Vanadium	ug/L	OW-403B	09/14/2016	0.2550	< 0.2550	03/18/2014-09/24/2019	12	0.6425
Vinyl chloride	ug/L	OW-403B	09/24/2018	0.6000	< 0.6000	03/18/2014-09/24/2019	12	0.6736
Vinyl chloride	ug/L	OW-403B	04/01/2019	0.6000	< 0.6000	03/18/2014-09/24/2019	12	0.6736
Selenium	ug/L	OW-405B	08/27/2014	3.3400	< 3.3400	03/18/2014-09/24/2019	12	0.6736
Selenium	ug/L	OW-405B	03/11/2015	3.3400	< 3.3400	03/18/2014-09/24/2019	12	0.6736
Selenium	ug/L	OW-405B	08/24/2015	3.3400	< 3.3400	03/18/2014-09/24/2019	12	0.6736
Vanadium	ug/L	OW-405B	03/18/2014	4.9600		03/18/2014-09/24/2019	12	0.6425
Vinyl chloride	ug/L	OW-405B	08/29/2018	0.6000	< 0.6000	03/18/2014-09/24/2019	12	0.6736
Vinyl chloride	ug/L	OW-405B	04/01/2019	0.6000	< 0.6000	03/18/2014-09/24/2019	12	0.6736

N = Total number of independent measurements in background at each well.
Date Range = Dates of the first and last measurements included in background at each well.
Critical Value depends on the significance level and on N-1 when the two most extreme values are tested or N for the most extreme value.

Table 8

Historical Downgradient Data for Constituent-Well Combinations that Failed the Current Statistical Evaluation or are in Verification Resampling Mode

Constituent	Units	Well	Date		Result		Pred. Limit
Arsenic	ug/L	MW-409B	07/28/2010	ND	1.0000		4.1800
Arsenic	ug/L	MW-409B	09/30/2010	ND	1.0000		4.1800
Arsenic	ug/L	MW-409B	12/28/2010	ND	2.0000		4.1800
Arsenic	ug/L	MW-409B	02/23/2011	ND	1.0000		4.1800
Arsenic	ug/L	MW-409B	05/02/2011	ND	18.0000		4.1800
Arsenic	ug/L	MW-409B	08/26/2011	ND	2.0000		4.1800
Arsenic	ug/L	MW-409B	11/07/2011		1.2800		4.1800
Arsenic	ug/L	MW-409B	02/22/2012		4.1400		4.1800
Arsenic	ug/L	MW-409B	05/10/2012	ND	3.6500		4.1800
Arsenic	ug/L	MW-409B	12/03/2012		3.3600		4.1800
Arsenic	ug/L	MW-409B	04/26/2013		3.4100		4.1800
Arsenic	ug/L	MW-409B	10/23/2013		3.2900		4.1800
Arsenic	ug/L	MW-409B	03/20/2014		1.5500		4.1800
Arsenic	ug/L	MW-409B	08/26/2014		1.5700		4.1800
Arsenic	ug/L	MW-409B	02/24/2015		2.1300		4.1800
Arsenic	ug/L	MW-409B	08/20/2015		1.1700		4.1800
Arsenic	ug/L	MW-409B	03/09/2016		1.2400		4.1800
Arsenic	ug/L	MW-409B	09/27/2016		1.7000		4.1800
Arsenic	ug/L	MW-409B	03/21/2017		1.0200		4.1800
Arsenic	ug/L	MW-409B	09/11/2017		1.4500		4.1800
Arsenic	ug/L	MW-409B	03/28/2018		1.1600		4.1800
Arsenic	ug/L	MW-409B	07/12/2018		1.8400		4.1800
Arsenic	ug/L	MW-409B	09/11/2018		3.8200		4.1800
Arsenic	ug/L	MW-409B	04/03/2019	ND	0.7500		4.1800
Arsenic	ug/L	MW-409B	09/23/2019		4.5600	*	4.1800
Arsenic	ug/L	MW-409B	04/15/2020		2.0200		4.1800
Arsenic	ug/L	MW-409B	09/17/2020		2.8100		4.1800
Arsenic	ug/L	MW-409B	03/30/2021	ND	0.7500		4.1800
Arsenic	ug/L	MW-409B	11/10/2021		4.0100		4.1800
Arsenic	ug/L	MW-409B	04/12/2022	ND	0.7500		4.1800
Arsenic	ug/L	MW-409B	11/09/2022		5.7300	*	4.1800
Arsenic	ug/L	MW-409B	03/24/2023	ND	0.7500		4.1800
Arsenic	ug/L	MW-409B	09/12/2023		2.0400		4.1800
Arsenic	ug/L	MW-409B	05/16/2024		3.8300		4.1800
Arsenic	ug/L	MW-409B	10/25/2024		5.0600	*	4.1800
Cobalt	ug/L	MW-409B	07/28/2010	ND	20.0000		5.7900
Cobalt	ug/L	MW-409B	09/30/2010	ND	20.0000		5.7900
Cobalt	ug/L	MW-409B	12/28/2010	ND	20.0000		5.7900
Cobalt	ug/L	MW-409B	02/23/2011	ND	20.0000		5.7900
Cobalt	ug/L	MW-409B	05/02/2011	ND	20.0000		5.7900
Cobalt	ug/L	MW-409B	08/26/2011		20.5000	*	5.7900
Cobalt	ug/L	MW-409B	11/07/2011		17.3000	*	5.7900
Cobalt	ug/L	MW-409B	02/22/2012		20.7000	*	5.7900
Cobalt	ug/L	MW-409B	05/10/2012		17.4000	*	5.7900
Cobalt	ug/L	MW-409B	12/03/2012		20.0000	*	5.7900
Cobalt	ug/L	MW-409B	04/26/2013		22.6000	*	5.7900
Cobalt	ug/L	MW-409B	10/23/2013		28.1000	*	5.7900
Cobalt	ug/L	MW-409B	03/20/2014		20.9000	*	5.7900
Cobalt	ug/L	MW-409B	08/26/2014		19.6000	*	5.7900
Cobalt	ug/L	MW-409B	02/24/2015		20.0000	*	5.7900
Cobalt	ug/L	MW-409B	08/20/2015		18.7000	*	5.7900
Cobalt	ug/L	MW-409B	03/09/2016		16.4000	*	5.7900
Cobalt	ug/L	MW-409B	09/27/2016		16.3000	*	5.7900
Cobalt	ug/L	MW-409B	03/21/2017		11.8000	*	5.7900
Cobalt	ug/L	MW-409B	09/11/2017		16.3000	*	5.7900
Cobalt	ug/L	MW-409B	03/28/2018		7.1100	*	5.7900
Cobalt	ug/L	MW-409B	07/12/2018		13.4000	*	5.7900
Cobalt	ug/L	MW-409B	09/11/2018		7.9000	*	5.7900
Cobalt	ug/L	MW-409B	04/03/2019		13.8000	*	5.7900
Cobalt	ug/L	MW-409B	09/23/2019		14.5000	*	5.7900

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Table 8

Historical Downgradient Data for Constituent-Well Combinations that Failed the Current Statistical Evaluation or are in Verification Resampling Mode

Constituent	Units	Well	Date		Result		Pred. Limit
Cobalt	ug/L	MW-409B	04/15/2020		2.4300		5.7900
Cobalt	ug/L	MW-409B	09/17/2020		6.5900	*	5.7900
Cobalt	ug/L	MW-409B	03/30/2021		5.4100		5.7900
Cobalt	ug/L	MW-409B	11/10/2021		9.5800	*	5.7900
Cobalt	ug/L	MW-409B	04/12/2022		7.8800	*	5.7900
Cobalt	ug/L	MW-409B	11/09/2022		6.2200	*	5.7900
Cobalt	ug/L	MW-409B	03/24/2023		7.2100	*	5.7900
Cobalt	ug/L	MW-409B	09/12/2023		5.8100	*	5.7900
Cobalt	ug/L	MW-409B	05/16/2024		11.1000	*	5.7900
Cobalt	ug/L	MW-409B	10/25/2024		7.8800	*	5.7900
Cobalt	ug/L	OW-113B	10/24/2007	ND	20.0000		5.7900
Cobalt	ug/L	OW-113B	01/14/2008	ND	20.0000		5.7900
Cobalt	ug/L	OW-113B	04/24/2008	ND	20.0000		5.7900
Cobalt	ug/L	OW-113B	06/21/2008	ND	20.0000		5.7900
Cobalt	ug/L	OW-113B	09/17/2008		28.3000	*	5.7900
Cobalt	ug/L	OW-113B	02/20/2009		37.7000	*	5.7900
Cobalt	ug/L	OW-113B	08/12/2009	ND	20.0000		5.7900
Cobalt	ug/L	OW-113B	03/18/2010	ND	20.0000		5.7900
Cobalt	ug/L	OW-113B	09/28/2010	ND	20.0000		5.7900
Cobalt	ug/L	OW-113B	05/11/2011	ND	20.0000		5.7900
Cobalt	ug/L	OW-113B	11/10/2011		4.9900		5.7900
Cobalt	ug/L	OW-113B	05/10/2012		8.7200	*	5.7900
Cobalt	ug/L	OW-113B	12/07/2012	ND	1.5500		5.7900
Cobalt	ug/L	OW-113B	05/01/2013		9.2500	*	5.7900
Cobalt	ug/L	OW-113B	10/18/2013		5.0200		5.7900
Cobalt	ug/L	OW-113B	03/21/2014		2.1700		5.7900
Cobalt	ug/L	OW-113B	09/04/2014		5.7400		5.7900
Cobalt	ug/L	OW-113B	03/18/2015		0.8850		5.7900
Cobalt	ug/L	OW-113B	08/26/2015		7.0900	*	5.7900
Cobalt	ug/L	OW-113B	03/22/2016		2.3700		5.7900
Cobalt	ug/L	OW-113B	09/14/2016		1.9300		5.7900
Cobalt	ug/L	OW-113B	03/22/2017		3.2500		5.7900
Cobalt	ug/L	OW-113B	09/12/2017		4.1800		5.7900
Cobalt	ug/L	OW-113B	03/19/2018		0.5260		5.7900
Cobalt	ug/L	OW-113B	09/17/2018		10.9000	*	5.7900
Cobalt	ug/L	OW-113B	12/16/2018		0.9410		5.7900
Cobalt	ug/L	OW-113B	04/09/2019		4.0100		5.7900
Cobalt	ug/L	OW-113B	06/25/2019		13.2000	*	5.7900
Cobalt	ug/L	OW-113B	09/18/2019		13.0000	*	5.7900
Cobalt	ug/L	OW-113B	04/22/2020		15.7000	*	5.7900
Cobalt	ug/L	OW-113B	08/17/2020		21.8000	*	5.7900
Cobalt	ug/L	OW-113B	10/01/2020		8.5500	*	5.7900
Cobalt	ug/L	OW-113B	03/22/2021		1.7100		5.7900
Cobalt	ug/L	OW-113B	11/09/2021		5.4100		5.7900
Cobalt	ug/L	OW-113B	04/11/2022		4.7300		5.7900
Cobalt	ug/L	OW-113B	11/03/2022		26.1000	*	5.7900
Cobalt	ug/L	OW-113B	04/10/2023		2.6200		5.7900
Cobalt	ug/L	OW-113B	09/14/2023		18.9000	*	5.7900
Cobalt	ug/L	OW-113B	05/23/2024		14.4000	*	5.7900
Cobalt	ug/L	OW-113B	10/01/2024		12.6000	*	5.7900
Arsenic	ug/L	OW-205B	03/29/2016		14.8000	*	4.1800
Arsenic	ug/L	OW-205B	12/07/2016		13.9000	*	4.1800
Arsenic	ug/L	OW-205B	03/21/2017		12.9000	*	4.1800
Arsenic	ug/L	OW-205B	06/15/2017		7.5000	*	4.1800
Arsenic	ug/L	OW-205B	09/07/2017		6.5500	*	4.1800
Arsenic	ug/L	OW-205B	11/28/2017		6.4000	*	4.1800
Arsenic	ug/L	OW-205B	03/16/2018		7.2500	*	4.1800
Arsenic	ug/L	OW-205B	07/10/2018	ND	11.4000		4.1800
Arsenic	ug/L	OW-205B	09/24/2018		5.3100	*	4.1800
Arsenic	ug/L	OW-205B	03/26/2019		11.9000	*	4.1800

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Table 8

Historical Downgradient Data for Constituent-Well Combinations that Failed the Current Statistical Evaluation or are in Verification Resampling Mode

Constituent	Units	Well	Date		Result		Pred. Limit
Arsenic	ug/L	OW-205B	10/03/2019		18.8000	*	4.1800
Arsenic	ug/L	OW-205B	03/23/2020		13.4000	*	4.1800
Arsenic	ug/L	OW-205B	09/29/2020		6.8500	*	4.1800
Arsenic	ug/L	OW-205B	03/22/2021		17.5000	*	4.1800
Arsenic	ug/L	OW-205B	11/01/2021		12.4000	*	4.1800
Arsenic	ug/L	OW-205B	04/11/2022		10.2000	*	4.1800
Arsenic	ug/L	OW-205B	11/08/2022		11.1000	*	4.1800
Arsenic	ug/L	OW-205B	04/10/2023		18.3000	*	4.1800
Arsenic	ug/L	OW-205B	09/06/2023		9.1400	*	4.1800
Arsenic	ug/L	OW-205B	04/24/2024		9.0600	*	4.1800
Cobalt	ug/L	OW-212B	03/25/2020		9.1700	*	5.7900
Cobalt	ug/L	OW-212B	08/13/2020		7.9200	*	5.7900
Cobalt	ug/L	OW-212B	09/17/2020		6.5800	*	5.7900
Cobalt	ug/L	OW-212B	03/29/2021		2.0300		5.7900
Cobalt	ug/L	OW-212B	06/21/2021		7.2600	*	5.7900
Cobalt	ug/L	OW-212B	11/09/2021		0.5450		5.7900
Cobalt	ug/L	OW-212B	04/12/2022		7.1300	*	5.7900
Cobalt	ug/L	OW-212B	07/14/2022		46.9000	*	5.7900
Cobalt	ug/L	OW-212B	11/08/2022		3.3600		5.7900
Cobalt	ug/L	OW-212B	04/18/2023		27.1000	*	5.7900
Cobalt	ug/L	OW-212B	05/06/2024		11.9000	*	5.7900
Cobalt	ug/L	OW-212B	07/31/2024		27.5000	*	5.7900
Cobalt	ug/L	OW-212B	10/02/2024		20.6000	*	5.7900
Thallium	ug/L	OW-212B	03/25/2020	ND	0.2600		0.2600
Thallium	ug/L	OW-212B	08/13/2020	ND	0.2600		0.2600
Thallium	ug/L	OW-212B	09/17/2020	ND	0.2600		0.2600
Thallium	ug/L	OW-212B	03/29/2021	ND	0.2600		0.2600
Thallium	ug/L	OW-212B	06/21/2021	ND	0.2600		0.2600
Thallium	ug/L	OW-212B	11/09/2021	ND	0.2600		0.2600
Thallium	ug/L	OW-212B	04/12/2022	ND	0.2600		0.2600
Thallium	ug/L	OW-212B	11/08/2022	ND	0.2600		0.2600
Thallium	ug/L	OW-212B	04/18/2023	ND	0.2600		0.2600
Thallium	ug/L	OW-212B	05/06/2024	ND	0.5700		0.2600
Thallium	ug/L	OW-212B	10/02/2024		1.2400	*	0.2600
1,4-dichlorobenzene	ug/L	OW-220B	03/31/2020		3.2900	*	0.4270
1,4-dichlorobenzene	ug/L	OW-220B	08/06/2020		20.5000	*	0.4270
1,4-dichlorobenzene	ug/L	OW-220B	09/16/2020		2.5600	*	0.4270
1,4-dichlorobenzene	ug/L	OW-220B	12/09/2020		1.8600	*	0.4270
1,4-dichlorobenzene	ug/L	OW-220B	03/22/2021		1.9700	*	0.4270
1,4-dichlorobenzene	ug/L	OW-220B	10/27/2021	ND	0.2300		0.4270
1,4-dichlorobenzene	ug/L	OW-220B	04/11/2022		1.8100	*	0.4270
1,4-dichlorobenzene	ug/L	OW-220B	11/03/2022		1.5400	*	0.4270
1,4-dichlorobenzene	ug/L	OW-220B	04/10/2023		2.1400	*	0.4270
1,4-dichlorobenzene	ug/L	OW-220B	09/12/2023	ND	0.2300		0.4270
1,4-dichlorobenzene	ug/L	OW-220B	05/16/2024		1.8700	*	0.4270
1,4-dichlorobenzene	ug/L	OW-220B	10/04/2024		2.3500	*	0.4270
Arsenic	ug/L	OW-220B	03/31/2020		13.3000	*	4.1800
Arsenic	ug/L	OW-220B	08/06/2020		9.7400	*	4.1800
Arsenic	ug/L	OW-220B	09/16/2020		13.4000	*	4.1800
Arsenic	ug/L	OW-220B	12/09/2020		12.8000	*	4.1800
Arsenic	ug/L	OW-220B	03/22/2021		13.2000	*	4.1800
Arsenic	ug/L	OW-220B	10/27/2021		14.5000	*	4.1800
Arsenic	ug/L	OW-220B	04/11/2022	ND	3.0000		4.1800
Arsenic	ug/L	OW-220B	11/03/2022		14.5000	*	4.1800
Arsenic	ug/L	OW-220B	04/10/2023		16.4000	*	4.1800
Arsenic	ug/L	OW-220B	09/12/2023		14.5000	*	4.1800
Arsenic	ug/L	OW-220B	05/16/2024		14.4000	*	4.1800
Arsenic	ug/L	OW-220B	10/04/2024		25.3000	*	4.1800
Barium	ug/L	OW-220B	03/31/2020		706.0000	*	484.0000
Barium	ug/L	OW-220B	08/06/2020		867.0000	*	484.0000

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Constituent	Units	Well	Date		Result		Pred. Limit
Barium	ug/L	OW-220B	09/16/2020		732.0000	*	484.0000
Barium	ug/L	OW-220B	12/09/2020		853.0000	*	484.0000
Barium	ug/L	OW-220B	03/22/2021		722.0000	*	484.0000
Barium	ug/L	OW-220B	10/27/2021		792.0000	*	484.0000
Barium	ug/L	OW-220B	04/11/2022		847.0000	*	484.0000
Barium	ug/L	OW-220B	11/03/2022		706.0000	*	484.0000
Barium	ug/L	OW-220B	04/10/2023		1120.0000	*	484.0000
Barium	ug/L	OW-220B	09/12/2023		664.0000	*	484.0000
Barium	ug/L	OW-220B	05/16/2024		904.0000	*	484.0000
Barium	ug/L	OW-220B	10/04/2024		1010.0000	*	484.0000
Benzene	ug/L	OW-220B	03/31/2020		3.9100	*	0.2290
Benzene	ug/L	OW-220B	08/06/2020		32.5000	*	0.2290
Benzene	ug/L	OW-220B	09/16/2020		2.9800	*	0.2290
Benzene	ug/L	OW-220B	12/09/2020		2.7800	*	0.2290
Benzene	ug/L	OW-220B	03/22/2021		2.7500	*	0.2290
Benzene	ug/L	OW-220B	10/27/2021		2.3200	*	0.2290
Benzene	ug/L	OW-220B	04/11/2022		2.4200	*	0.2290
Benzene	ug/L	OW-220B	11/03/2022		1.9100	*	0.2290
Benzene	ug/L	OW-220B	04/10/2023		2.6400	*	0.2290
Benzene	ug/L	OW-220B	09/12/2023		1.7700	*	0.2290
Benzene	ug/L	OW-220B	05/16/2024		2.2900	*	0.2290
Benzene	ug/L	OW-220B	10/04/2024		2.2900	*	0.2290
Cobalt	ug/L	OW-220B	03/31/2020		32.5000	*	5.7900
Cobalt	ug/L	OW-220B	08/06/2020		30.9000	*	5.7900
Cobalt	ug/L	OW-220B	09/16/2020		25.4000	*	5.7900
Cobalt	ug/L	OW-220B	12/09/2020		26.3000	*	5.7900
Cobalt	ug/L	OW-220B	03/22/2021		27.4000	*	5.7900
Cobalt	ug/L	OW-220B	10/27/2021		21.4000	*	5.7900
Cobalt	ug/L	OW-220B	04/11/2022		25.4000	*	5.7900
Cobalt	ug/L	OW-220B	11/03/2022		18.9000	*	5.7900
Cobalt	ug/L	OW-220B	04/10/2023		24.9000	*	5.7900
Cobalt	ug/L	OW-220B	09/12/2023		17.3000	*	5.7900
Cobalt	ug/L	OW-220B	05/16/2024		21.7000	*	5.7900
Cobalt	ug/L	OW-220B	10/04/2024		15.8000	*	5.7900
Nickel	ug/L	OW-220B	03/31/2020		123.0000	*	55.9916
Nickel	ug/L	OW-220B	08/06/2020		106.0000	*	55.9916
Nickel	ug/L	OW-220B	09/16/2020		108.0000	*	55.9916
Nickel	ug/L	OW-220B	12/09/2020		109.0000	*	55.9916
Nickel	ug/L	OW-220B	03/22/2021		124.0000	*	55.9916
Nickel	ug/L	OW-220B	10/27/2021		108.0000	*	55.9916
Nickel	ug/L	OW-220B	04/11/2022		147.0000	*	55.9916
Nickel	ug/L	OW-220B	11/03/2022		99.7000	*	55.9916
Nickel	ug/L	OW-220B	04/10/2023		141.0000	*	55.9916
Nickel	ug/L	OW-220B	09/12/2023		106.0000	*	55.9916
Nickel	ug/L	OW-220B	05/16/2024		135.0000	*	55.9916
Nickel	ug/L	OW-220B	10/04/2024		130.0000	*	55.9916
Thallium	ug/L	OW-220B	03/31/2020	ND	0.2600		0.2600
Thallium	ug/L	OW-220B	08/06/2020	ND	0.2600		0.2600
Thallium	ug/L	OW-220B	09/16/2020	ND	0.2600		0.2600
Thallium	ug/L	OW-220B	12/09/2020	ND	0.2600		0.2600
Thallium	ug/L	OW-220B	03/22/2021	ND	0.2600		0.2600
Thallium	ug/L	OW-220B	10/27/2021	ND	0.2600		0.2600
Thallium	ug/L	OW-220B	04/11/2022	ND	0.2600		0.2600
Thallium	ug/L	OW-220B	11/03/2022	ND	0.2600		0.2600
Thallium	ug/L	OW-220B	04/10/2023	ND	0.2600		0.2600
Thallium	ug/L	OW-220B	09/12/2023	ND	0.2600		0.2600
Thallium	ug/L	OW-220B	05/16/2024	ND	0.5700		0.2600
Thallium	ug/L	OW-220B	10/04/2024		1.5400	*	0.2600
Arsenic	ug/L	OW-221B	03/24/2020	ND	0.8800		4.1800
Arsenic	ug/L	OW-221B	08/06/2020	ND	0.8800		4.1800

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Constituent	Units	Well	Date		Result		Pred. Limit
Arsenic	ug/L	OW-221B	09/24/2020	ND	0.8800		4.1800
Arsenic	ug/L	OW-221B	12/10/2020	ND	0.8800		4.1800
Arsenic	ug/L	OW-221B	03/17/2021		2.7200		4.1800
Arsenic	ug/L	OW-221B	10/26/2021		2.5500		4.1800
Arsenic	ug/L	OW-221B	04/27/2022		3.2400		4.1800
Arsenic	ug/L	OW-221B	10/26/2022		7.5100	*	4.1800
Arsenic	ug/L	OW-221B	04/13/2023		10.2000	*	4.1800
Arsenic	ug/L	OW-221B	09/18/2023		10.3000	*	4.1800
Arsenic	ug/L	OW-221B	04/23/2024		10.6000	*	4.1800
Arsenic	ug/L	OW-221B	10/07/2024		13.9000	*	4.1800
Barium	ug/L	OW-221B	03/24/2020		221.0000		484.0000
Barium	ug/L	OW-221B	08/06/2020		225.0000		484.0000
Barium	ug/L	OW-221B	09/24/2020		283.0000		484.0000
Barium	ug/L	OW-221B	12/10/2020		369.0000		484.0000
Barium	ug/L	OW-221B	03/17/2021		285.0000		484.0000
Barium	ug/L	OW-221B	10/26/2021		255.0000		484.0000
Barium	ug/L	OW-221B	04/27/2022		286.0000		484.0000
Barium	ug/L	OW-221B	10/26/2022		938.0000	*	484.0000
Barium	ug/L	OW-221B	04/13/2023		936.0000	*	484.0000
Barium	ug/L	OW-221B	09/18/2023		628.0000	*	484.0000
Barium	ug/L	OW-221B	04/23/2024		566.0000	*	484.0000
Barium	ug/L	OW-221B	10/07/2024		575.0000	*	484.0000
Benzene	ug/L	OW-221B	03/24/2020		0.8470	*	0.2290
Benzene	ug/L	OW-221B	08/06/2020		1.8300	*	0.2290
Benzene	ug/L	OW-221B	09/24/2020		1.4400	*	0.2290
Benzene	ug/L	OW-221B	12/10/2020		0.9340	*	0.2290
Benzene	ug/L	OW-221B	03/17/2021		0.6610	*	0.2290
Benzene	ug/L	OW-221B	10/26/2021		0.9860	*	0.2290
Benzene	ug/L	OW-221B	04/27/2022		0.5450	*	0.2290
Benzene	ug/L	OW-221B	10/26/2022		0.7110	*	0.2290
Benzene	ug/L	OW-221B	04/13/2023		0.5640	*	0.2290
Benzene	ug/L	OW-221B	09/18/2023		1.2900	*	0.2290
Benzene	ug/L	OW-221B	04/23/2024	ND	0.2200		0.2290
Benzene	ug/L	OW-221B	10/07/2024		0.8560	*	0.2290
Cis-1,2-dichloroethylene	ug/L	OW-221B	03/24/2020		1.0400	*	0.2960
Cis-1,2-dichloroethylene	ug/L	OW-221B	08/06/2020		2.0400	*	0.2960
Cis-1,2-dichloroethylene	ug/L	OW-221B	09/24/2020		1.1000	*	0.2960
Cis-1,2-dichloroethylene	ug/L	OW-221B	12/10/2020		1.0300	*	0.2960
Cis-1,2-dichloroethylene	ug/L	OW-221B	03/17/2021	ND	0.2100		0.2960
Cis-1,2-dichloroethylene	ug/L	OW-221B	10/26/2021		1.2400	*	0.2960
Cis-1,2-dichloroethylene	ug/L	OW-221B	04/27/2022	ND	0.2100		0.2960
Cis-1,2-dichloroethylene	ug/L	OW-221B	10/26/2022		1.2500	*	0.2960
Cis-1,2-dichloroethylene	ug/L	OW-221B	04/13/2023	ND	0.2100		0.2960
Cis-1,2-dichloroethylene	ug/L	OW-221B	09/18/2023		1.9900	*	0.2960
Cis-1,2-dichloroethylene	ug/L	OW-221B	04/23/2024	ND	0.2100		0.2960
Cis-1,2-dichloroethylene	ug/L	OW-221B	10/07/2024		1.2900	*	0.2960
Cobalt	ug/L	OW-222B	03/24/2020		9.9600	*	5.7900
Cobalt	ug/L	OW-222B	08/12/2020		8.8600	*	5.7900
Cobalt	ug/L	OW-222B	09/23/2020		8.9200	*	5.7900
Cobalt	ug/L	OW-222B	12/10/2020		8.9700	*	5.7900
Cobalt	ug/L	OW-222B	03/17/2021		9.3700	*	5.7900
Cobalt	ug/L	OW-222B	10/26/2021		8.4100	*	5.7900
Cobalt	ug/L	OW-222B	04/15/2022		8.7300	*	5.7900
Cobalt	ug/L	OW-222B	10/27/2022		8.1400	*	5.7900
Cobalt	ug/L	OW-222B	04/13/2023		8.3400	*	5.7900
Cobalt	ug/L	OW-222B	09/07/2023		8.2900	*	5.7900
Cobalt	ug/L	OW-222B	04/23/2024		8.1100	*	5.7900
Cobalt	ug/L	OW-222B	10/07/2024		5.2100		5.7900
Thallium	ug/L	OW-223B	03/24/2020	ND	0.2600		0.2600
Thallium	ug/L	OW-223B	08/12/2020	ND	0.2600		0.2600

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ND = Not Detected, Result = detection limit.

Table 8

Historical Downgradient Data for Constituent-Well Combinations that Failed the Current Statistical Evaluation or are in Verification Resampling Mode

Constituent	Units	Well	Date		Result		Pred. Limit
Thallium	ug/L	OW-223B	09/21/2020	ND	0.2600		0.2600
Thallium	ug/L	OW-223B	12/10/2020	ND	0.2600		0.2600
Thallium	ug/L	OW-223B	03/17/2021	ND	0.2600		0.2600
Thallium	ug/L	OW-223B	11/03/2021	ND	0.2600		0.2600
Thallium	ug/L	OW-223B	04/15/2022	ND	0.2600		0.2600
Thallium	ug/L	OW-223B	10/25/2022	ND	0.2600		0.2600
Thallium	ug/L	OW-223B	03/21/2023	ND	0.2600		0.2600
Thallium	ug/L	OW-223B	09/13/2023	ND	0.2600		0.2600
Thallium	ug/L	OW-223B	04/23/2024	ND	0.5700		0.2600
Thallium	ug/L	OW-223B	10/08/2024		1.4200	*	0.2600
1,4-dichlorobenzene	ug/L	OW-224B	01/11/2023		1.9700	*	0.4270
1,4-dichlorobenzene	ug/L	OW-224B	03/20/2023		3.1800	*	0.4270
1,4-dichlorobenzene	ug/L	OW-224B	08/01/2023	ND	2.3000		0.4270
1,4-dichlorobenzene	ug/L	OW-224B	09/07/2023		3.2900	*	0.4270
1,4-dichlorobenzene	ug/L	OW-224B	12/05/2023		2.9500	*	0.4270
1,4-dichlorobenzene	ug/L	OW-224B	04/24/2024	ND	2.3000		0.4270
1,4-dichlorobenzene	ug/L	OW-224B	10/07/2024		3.5200	*	0.4270
Arsenic	ug/L	OW-224B	01/11/2023		2.9800		4.1800
Arsenic	ug/L	OW-224B	03/20/2023		3.5100		4.1800
Arsenic	ug/L	OW-224B	08/01/2023		4.9900	*	4.1800
Arsenic	ug/L	OW-224B	09/07/2023		6.5700	*	4.1800
Arsenic	ug/L	OW-224B	12/05/2023		6.2600	*	4.1800
Arsenic	ug/L	OW-224B	04/24/2024		5.7000	*	4.1800
Arsenic	ug/L	OW-224B	10/07/2024		7.7000	*	4.1800
Barium	ug/L	OW-224B	01/11/2023		1700.0000	*	484.0000
Barium	ug/L	OW-224B	03/20/2023		1860.0000	*	484.0000
Barium	ug/L	OW-224B	08/01/2023		2120.0000	*	484.0000
Barium	ug/L	OW-224B	09/07/2023		1770.0000	*	484.0000
Barium	ug/L	OW-224B	12/05/2023		2370.0000	*	484.0000
Barium	ug/L	OW-224B	04/24/2024		2580.0000	*	484.0000
Barium	ug/L	OW-224B	10/07/2024		2570.0000	*	484.0000
Benzene	ug/L	OW-224B	01/11/2023		2.0500	*	0.2290
Benzene	ug/L	OW-224B	03/20/2023		3.2400	*	0.2290
Benzene	ug/L	OW-224B	08/01/2023	ND	2.2000		0.2290
Benzene	ug/L	OW-224B	09/07/2023		4.3600	*	0.2290
Benzene	ug/L	OW-224B	12/05/2023		4.2000	*	0.2290
Benzene	ug/L	OW-224B	04/24/2024	ND	2.2000		0.2290
Benzene	ug/L	OW-224B	10/07/2024		4.2100	*	0.2290
Cobalt	ug/L	OW-224B	01/11/2023		55.4000	*	5.7900
Cobalt	ug/L	OW-224B	03/20/2023		62.0000	*	5.7900
Cobalt	ug/L	OW-224B	08/01/2023		29.9000	*	5.7900
Cobalt	ug/L	OW-224B	09/07/2023		24.8000	*	5.7900
Cobalt	ug/L	OW-224B	12/05/2023		21.7000	*	5.7900
Cobalt	ug/L	OW-224B	04/24/2024		32.5000	*	5.7900
Cobalt	ug/L	OW-224B	10/07/2024		23.0000	*	5.7900
Lead	ug/L	OW-224B	01/11/2023		0.8010		1.4800
Lead	ug/L	OW-224B	03/20/2023		1.2700		1.4800
Lead	ug/L	OW-224B	08/01/2023		0.9260		1.4800
Lead	ug/L	OW-224B	09/07/2023		1.6100	*	1.4800
Lead	ug/L	OW-224B	12/05/2023		1.3700		1.4800
Lead	ug/L	OW-224B	04/24/2024		1.4400		1.4800
Lead	ug/L	OW-224B	10/07/2024		1.7400	*	1.4800
Nickel	ug/L	OW-224B	01/11/2023		280.0000	*	55.9916
Nickel	ug/L	OW-224B	03/20/2023		272.0000	*	55.9916
Nickel	ug/L	OW-224B	08/01/2023		143.0000	*	55.9916
Nickel	ug/L	OW-224B	09/07/2023		125.0000	*	55.9916
Nickel	ug/L	OW-224B	12/05/2023		105.0000	*	55.9916
Nickel	ug/L	OW-224B	04/24/2024		172.0000	*	55.9916
Nickel	ug/L	OW-224B	10/07/2024		116.0000	*	55.9916
Thallium	ug/L	OW-224B	01/11/2023	ND	0.2600		0.2600

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Table 8

Historical Downgradient Data for Constituent-Well Combinations that Failed the Current Statistical Evaluation or are in Verification Resampling Mode

Constituent	Units	Well	Date		Result		Pred. Limit
Thallium	ug/L	OW-224B	03/20/2023	ND	0.2600		0.2600
Thallium	ug/L	OW-224B	08/01/2023		1.4200	*	0.2600
Thallium	ug/L	OW-224B	09/07/2023	ND	0.2600		0.2600
Thallium	ug/L	OW-224B	12/05/2023	ND	0.2600		0.2600
Thallium	ug/L	OW-224B	04/24/2024	ND	0.5700		0.2600
Thallium	ug/L	OW-224B	10/07/2024		1.3700	*	0.2600
Arsenic	ug/L	OW-225B	01/11/2023	ND	0.7500		4.1800
Arsenic	ug/L	OW-225B	03/20/2023	ND	0.7500		4.1800
Arsenic	ug/L	OW-225B	08/03/2023		2.4200		4.1800
Arsenic	ug/L	OW-225B	09/18/2023		2.1600		4.1800
Arsenic	ug/L	OW-225B	12/05/2023		2.7400		4.1800
Arsenic	ug/L	OW-225B	04/24/2024		5.8600	*	4.1800
Arsenic	ug/L	OW-225B	07/29/2024		6.5200	*	4.1800
Arsenic	ug/L	OW-225B	10/08/2024		6.2900	*	4.1800
Barium	ug/L	OW-225B	01/11/2023		1510.0000	*	484.0000
Barium	ug/L	OW-225B	03/20/2023		1360.0000	*	484.0000
Barium	ug/L	OW-225B	08/03/2023		1680.0000	*	484.0000
Barium	ug/L	OW-225B	09/18/2023		1070.0000	*	484.0000
Barium	ug/L	OW-225B	12/05/2023		1420.0000	*	484.0000
Barium	ug/L	OW-225B	04/24/2024		1710.0000	*	484.0000
Barium	ug/L	OW-225B	10/08/2024		1380.0000	*	484.0000
Benzene	ug/L	OW-225B	01/11/2023		0.7770	*	0.2290
Benzene	ug/L	OW-225B	03/20/2023		0.9720	*	0.2290
Benzene	ug/L	OW-225B	08/03/2023		1.0000	*	0.2290
Benzene	ug/L	OW-225B	09/18/2023		1.2800	*	0.2290
Benzene	ug/L	OW-225B	12/05/2023		1.2000	*	0.2290
Benzene	ug/L	OW-225B	04/24/2024		1.1800	*	0.2290
Benzene	ug/L	OW-225B	10/08/2024		0.9830	*	0.2290
Cobalt	ug/L	OW-225B	01/11/2023		26.9000	*	5.7900
Cobalt	ug/L	OW-225B	03/20/2023		30.9000	*	5.7900
Cobalt	ug/L	OW-225B	08/03/2023		34.9000	*	5.7900
Cobalt	ug/L	OW-225B	09/18/2023		21.0000	*	5.7900
Cobalt	ug/L	OW-225B	12/05/2023		30.6000	*	5.7900
Cobalt	ug/L	OW-225B	04/24/2024		33.3000	*	5.7900
Cobalt	ug/L	OW-225B	10/08/2024		30.0000	*	5.7900
Lead	ug/L	OW-225B	01/11/2023	ND	0.2400		1.4800
Lead	ug/L	OW-225B	03/20/2023	ND	0.2400		1.4800
Lead	ug/L	OW-225B	08/03/2023		0.8860		1.4800
Lead	ug/L	OW-225B	09/18/2023		0.5610		1.4800
Lead	ug/L	OW-225B	12/05/2023		0.6730		1.4800
Lead	ug/L	OW-225B	04/24/2024		0.9570		1.4800
Lead	ug/L	OW-225B	10/08/2024		1.5500	*	1.4800
Nickel	ug/L	OW-225B	01/11/2023		102.0000	*	55.9916
Nickel	ug/L	OW-225B	03/20/2023		120.0000	*	55.9916
Nickel	ug/L	OW-225B	08/03/2023		126.0000	*	55.9916
Nickel	ug/L	OW-225B	09/18/2023		85.0000	*	55.9916
Nickel	ug/L	OW-225B	12/05/2023		126.0000	*	55.9916
Nickel	ug/L	OW-225B	04/24/2024		144.0000	*	55.9916
Nickel	ug/L	OW-225B	10/08/2024		124.0000	*	55.9916
Arsenic	ug/L	OW-226B	01/24/2023		5.5300	*	4.1800
Arsenic	ug/L	OW-226B	03/21/2023		5.0800	*	4.1800
Arsenic	ug/L	OW-226B	08/03/2023		7.8800	*	4.1800
Arsenic	ug/L	OW-226B	09/18/2023	ND	2.6500		4.1800
Arsenic	ug/L	OW-226B	12/05/2023		8.0900	*	4.1800
Arsenic	ug/L	OW-226B	05/23/2024		8.0500	*	4.1800
Arsenic	ug/L	OW-226B	07/31/2024		7.4800	*	4.1800
Arsenic	ug/L	OW-226B	10/09/2024		10.0000	*	4.1800
Barium	ug/L	OW-226B	01/24/2023		1400.0000	*	484.0000
Barium	ug/L	OW-226B	03/21/2023		1790.0000	*	484.0000
Barium	ug/L	OW-226B	08/03/2023		1720.0000	*	484.0000

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Constituent	Units	Well	Date		Result		Pred. Limit
Barium	ug/L	OW-226B	09/18/2023		1500.0000	*	484.0000
Barium	ug/L	OW-226B	12/05/2023		1660.0000	*	484.0000
Barium	ug/L	OW-226B	05/23/2024		1450.0000	*	484.0000
Barium	ug/L	OW-226B	10/09/2024		1830.0000	*	484.0000
Benzene	ug/L	OW-226B	01/24/2023		2.4100	*	0.2290
Benzene	ug/L	OW-226B	03/21/2023		2.5100	*	0.2290
Benzene	ug/L	OW-226B	08/03/2023		2.4400	*	0.2290
Benzene	ug/L	OW-226B	09/18/2023		2.1600	*	0.2290
Benzene	ug/L	OW-226B	12/05/2023		2.7700	*	0.2290
Benzene	ug/L	OW-226B	05/23/2024		2.0200	*	0.2290
Benzene	ug/L	OW-226B	10/09/2024		2.5900	*	0.2290
Cobalt	ug/L	OW-226B	01/24/2023		34.5000	*	5.7900
Cobalt	ug/L	OW-226B	03/21/2023		28.7000	*	5.7900
Cobalt	ug/L	OW-226B	08/03/2023		26.0000	*	5.7900
Cobalt	ug/L	OW-226B	09/18/2023		19.7000	*	5.7900
Cobalt	ug/L	OW-226B	12/05/2023		24.6000	*	5.7900
Cobalt	ug/L	OW-226B	05/23/2024		18.8000	*	5.7900
Cobalt	ug/L	OW-226B	10/09/2024		25.0000	*	5.7900
Lead	ug/L	OW-226B	01/24/2023		2.6100	*	1.4800
Lead	ug/L	OW-226B	03/21/2023		1.2700		1.4800
Lead	ug/L	OW-226B	08/03/2023		1.2800		1.4800
Lead	ug/L	OW-226B	09/18/2023	ND	1.2000		1.4800
Lead	ug/L	OW-226B	12/05/2023		2.0200	*	1.4800
Lead	ug/L	OW-226B	05/23/2024		0.9780		1.4800
Lead	ug/L	OW-226B	10/09/2024		2.4700	*	1.4800
Nickel	ug/L	OW-226B	01/24/2023		84.3000	*	55.9916
Nickel	ug/L	OW-226B	03/21/2023		81.2000	*	55.9916
Nickel	ug/L	OW-226B	08/03/2023		78.9000	*	55.9916
Nickel	ug/L	OW-226B	09/18/2023		66.6000	*	55.9916
Nickel	ug/L	OW-226B	12/05/2023		85.1000	*	55.9916
Nickel	ug/L	OW-226B	05/23/2024		70.5000	*	55.9916
Nickel	ug/L	OW-226B	10/09/2024		94.7000	*	55.9916
Arsenic	ug/L	OW-227B	01/24/2023		6.9100	*	4.1800
Arsenic	ug/L	OW-227B	03/21/2023		2.6700		4.1800
Arsenic	ug/L	OW-227B	08/03/2023		4.1400		4.1800
Arsenic	ug/L	OW-227B	09/20/2023		7.8500	*	4.1800
Arsenic	ug/L	OW-227B	12/06/2023		5.3200	*	4.1800
Arsenic	ug/L	OW-227B	05/23/2024		16.9000	*	4.1800
Arsenic	ug/L	OW-227B	10/09/2024		16.2000	*	4.1800
Barium	ug/L	OW-227B	01/24/2023		1330.0000	*	484.0000
Barium	ug/L	OW-227B	03/21/2023		1690.0000	*	484.0000
Barium	ug/L	OW-227B	08/03/2023		1740.0000	*	484.0000
Barium	ug/L	OW-227B	09/20/2023		1460.0000	*	484.0000
Barium	ug/L	OW-227B	12/06/2023		1560.0000	*	484.0000
Barium	ug/L	OW-227B	05/23/2024		1920.0000	*	484.0000
Barium	ug/L	OW-227B	10/09/2024		2080.0000	*	484.0000
Benzene	ug/L	OW-227B	01/24/2023		1.3100	*	0.2290
Benzene	ug/L	OW-227B	03/21/2023		1.9500	*	0.2290
Benzene	ug/L	OW-227B	08/03/2023		2.6900	*	0.2290
Benzene	ug/L	OW-227B	09/20/2023		2.7700	*	0.2290
Benzene	ug/L	OW-227B	12/06/2023		2.7800	*	0.2290
Benzene	ug/L	OW-227B	05/23/2024		2.9900	*	0.2290
Benzene	ug/L	OW-227B	10/09/2024		2.9200	*	0.2290
Cobalt	ug/L	OW-227B	01/24/2023		17.2000	*	5.7900
Cobalt	ug/L	OW-227B	03/21/2023		25.6000	*	5.7900
Cobalt	ug/L	OW-227B	08/03/2023		33.0000	*	5.7900
Cobalt	ug/L	OW-227B	09/20/2023		34.1000	*	5.7900
Cobalt	ug/L	OW-227B	12/06/2023		26.4000	*	5.7900
Cobalt	ug/L	OW-227B	05/23/2024		23.5000	*	5.7900
Cobalt	ug/L	OW-227B	10/09/2024		22.1000	*	5.7900

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Nickel	ug/L	OW-227B	01/24/2023		73.5000	*	55.9916
Nickel	ug/L	OW-227B	03/21/2023		90.1000	*	55.9916
Nickel	ug/L	OW-227B	08/03/2023		98.9000	*	55.9916
Nickel	ug/L	OW-227B	09/20/2023		76.0000	*	55.9916
Nickel	ug/L	OW-227B	12/06/2023		83.6000	*	55.9916
Nickel	ug/L	OW-227B	05/23/2024		78.4000	*	55.9916
Nickel	ug/L	OW-227B	10/09/2024		87.0000	*	55.9916
1,4-dichlorobenzene	ug/L	OW-401B	09/27/2010	ND	1.0000		0.4270
1,4-dichlorobenzene	ug/L	OW-401B	02/23/2011	ND	1.0000		0.4270
1,4-dichlorobenzene	ug/L	OW-401B	03/25/2011	ND	4.0000		0.4270
1,4-dichlorobenzene	ug/L	OW-401B	05/03/2011	ND	1.0000		0.4270
1,4-dichlorobenzene	ug/L	OW-401B	06/23/2011	ND	1.0000		0.4270
1,4-dichlorobenzene	ug/L	OW-401B	08/26/2011	ND	1.0000		0.4270
1,4-dichlorobenzene	ug/L	OW-401B	11/07/2011		1.3800	*	0.4270
1,4-dichlorobenzene	ug/L	OW-401B	02/22/2012		1.0200	*	0.4270
1,4-dichlorobenzene	ug/L	OW-401B	05/11/2012		0.7100	*	0.4270
1,4-dichlorobenzene	ug/L	OW-401B	12/06/2012		1.4300	*	0.4270
1,4-dichlorobenzene	ug/L	OW-401B	04/26/2013		1.4500	*	0.4270
1,4-dichlorobenzene	ug/L	OW-401B	10/14/2013		1.6600	*	0.4270
1,4-dichlorobenzene	ug/L	OW-401B	04/02/2014	ND	0.2000		0.4270
1,4-dichlorobenzene	ug/L	OW-401B	08/29/2014	ND	0.2000		0.4270
1,4-dichlorobenzene	ug/L	OW-401B	03/10/2015		0.9310	*	0.4270
1,4-dichlorobenzene	ug/L	OW-401B	08/26/2015	ND	0.2000		0.4270
1,4-dichlorobenzene	ug/L	OW-401B	03/25/2016	ND	0.2000		0.4270
1,4-dichlorobenzene	ug/L	OW-401B	10/03/2016		0.9240	*	0.4270
1,4-dichlorobenzene	ug/L	OW-401B	12/12/2016		0.8020	*	0.4270
1,4-dichlorobenzene	ug/L	OW-401B	04/06/2017		0.9180	*	0.4270
1,4-dichlorobenzene	ug/L	OW-401B	09/29/2017		0.8110	*	0.4270
1,4-dichlorobenzene	ug/L	OW-401B	04/09/2018		0.9880	*	0.4270
1,4-dichlorobenzene	ug/L	OW-401B	09/20/2018	ND	0.2300		0.4270
1,4-dichlorobenzene	ug/L	OW-401B	04/16/2019	ND	0.2300		0.4270
1,4-dichlorobenzene	ug/L	OW-401B	10/03/2019	ND	0.2300		0.4270
1,4-dichlorobenzene	ug/L	OW-401B	04/14/2020		1.1500	*	0.4270
1,4-dichlorobenzene	ug/L	OW-401B	10/06/2020	ND	0.2300		0.4270
1,4-dichlorobenzene	ug/L	OW-401B	04/02/2021	ND	0.2300		0.4270
1,4-dichlorobenzene	ug/L	OW-401B	11/09/2021	ND	0.2300		0.4270
1,4-dichlorobenzene	ug/L	OW-401B	04/14/2022	ND	0.2300		0.4270
1,4-dichlorobenzene	ug/L	OW-401B	11/09/2022	ND	0.2300		0.4270
1,4-dichlorobenzene	ug/L	OW-401B	03/28/2023		1.1400	*	0.4270
1,4-dichlorobenzene	ug/L	OW-401B	09/28/2023	ND	0.2300		0.4270
1,4-dichlorobenzene	ug/L	OW-401B	05/14/2024		1.2200	*	0.4270
1,4-dichlorobenzene	ug/L	OW-401B	10/15/2024	ND	0.2300		0.4270
Arsenic	ug/L	OW-401B	09/27/2010	ND	10.0000		4.1800
Arsenic	ug/L	OW-401B	02/23/2011		1.0400		4.1800
Arsenic	ug/L	OW-401B	03/25/2011	ND	5.0000		4.1800
Arsenic	ug/L	OW-401B	05/03/2011	ND	6.0000		4.1800
Arsenic	ug/L	OW-401B	06/23/2011	ND	4.0000		4.1800
Arsenic	ug/L	OW-401B	08/26/2011	ND	4.0000		4.1800
Arsenic	ug/L	OW-401B	11/07/2011	ND	0.6000		4.1800
Arsenic	ug/L	OW-401B	02/22/2012		7.5400	*	4.1800
Arsenic	ug/L	OW-401B	05/11/2012		0.6200		4.1800
Arsenic	ug/L	OW-401B	12/06/2012		1.0800		4.1800
Arsenic	ug/L	OW-401B	04/26/2013		7.4500	*	4.1800
Arsenic	ug/L	OW-401B	10/14/2013		6.0400	*	4.1800
Arsenic	ug/L	OW-401B	04/02/2014		6.4200	*	4.1800
Arsenic	ug/L	OW-401B	08/29/2014		8.9400	*	4.1800
Arsenic	ug/L	OW-401B	03/10/2015		9.1300	*	4.1800
Arsenic	ug/L	OW-401B	08/26/2015		10.0000	*	4.1800
Arsenic	ug/L	OW-401B	03/25/2016		8.9800	*	4.1800
Arsenic	ug/L	OW-401B	10/03/2016		13.1000	*	4.1800

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Table 8

Historical Downgradient Data for Constituent-Well Combinations that Failed the Current Statistical Evaluation or are in Verification Resampling Mode

Constituent	Units	Well	Date		Result		Pred. Limit
Arsenic	ug/L	OW-401B	12/12/2016		12.7000	*	4.1800
Arsenic	ug/L	OW-401B	04/06/2017		11.5000	*	4.1800
Arsenic	ug/L	OW-401B	09/29/2017		12.6000	*	4.1800
Arsenic	ug/L	OW-401B	04/09/2018		11.6000	*	4.1800
Arsenic	ug/L	OW-401B	09/20/2018		10.5000	*	4.1800
Arsenic	ug/L	OW-401B	04/16/2019		12.0000	*	4.1800
Arsenic	ug/L	OW-401B	10/03/2019		11.7000	*	4.1800
Arsenic	ug/L	OW-401B	04/14/2020		12.8000	*	4.1800
Arsenic	ug/L	OW-401B	10/06/2020		14.3000	*	4.1800
Arsenic	ug/L	OW-401B	04/02/2021		13.7000	*	4.1800
Arsenic	ug/L	OW-401B	11/09/2021		10.6000	*	4.1800
Arsenic	ug/L	OW-401B	04/14/2022		10.4000	*	4.1800
Arsenic	ug/L	OW-401B	11/09/2022		7.2000	*	4.1800
Arsenic	ug/L	OW-401B	03/28/2023	ND	3.0000		4.1800
Arsenic	ug/L	OW-401B	09/28/2023		4.7500	*	4.1800
Arsenic	ug/L	OW-401B	05/14/2024		5.6700	*	4.1800
Arsenic	ug/L	OW-401B	07/29/2024		7.2500	*	4.1800
Arsenic	ug/L	OW-401B	10/15/2024		8.7700	*	4.1800
Barium	ug/L	OW-401B	09/27/2010		220.0000		484.0000
Barium	ug/L	OW-401B	02/23/2011		462.0000		484.0000
Barium	ug/L	OW-401B	03/25/2011		167.0000		484.0000
Barium	ug/L	OW-401B	05/03/2011		373.0000		484.0000
Barium	ug/L	OW-401B	06/23/2011		198.0000		484.0000
Barium	ug/L	OW-401B	08/26/2011		209.0000		484.0000
Barium	ug/L	OW-401B	11/07/2011		183.0000		484.0000
Barium	ug/L	OW-401B	02/22/2012		256.0000		484.0000
Barium	ug/L	OW-401B	05/11/2012		214.0000		484.0000
Barium	ug/L	OW-401B	12/06/2012		256.0000		484.0000
Barium	ug/L	OW-401B	04/26/2013		207.0000		484.0000
Barium	ug/L	OW-401B	10/14/2013		283.0000		484.0000
Barium	ug/L	OW-401B	04/02/2014		235.0000		484.0000
Barium	ug/L	OW-401B	08/29/2014		312.0000		484.0000
Barium	ug/L	OW-401B	03/10/2015		280.0000		484.0000
Barium	ug/L	OW-401B	08/26/2015		307.0000		484.0000
Barium	ug/L	OW-401B	03/25/2016		317.0000		484.0000
Barium	ug/L	OW-401B	10/03/2016		442.0000		484.0000
Barium	ug/L	OW-401B	12/12/2016		441.0000		484.0000
Barium	ug/L	OW-401B	04/06/2017		427.0000		484.0000
Barium	ug/L	OW-401B	09/29/2017		775.0000	*	484.0000
Barium	ug/L	OW-401B	04/09/2018		575.0000	*	484.0000
Barium	ug/L	OW-401B	09/20/2018		591.0000	*	484.0000
Barium	ug/L	OW-401B	04/16/2019		870.0000	*	484.0000
Barium	ug/L	OW-401B	10/03/2019		1160.0000	*	484.0000
Barium	ug/L	OW-401B	04/14/2020		1650.0000	*	484.0000
Barium	ug/L	OW-401B	10/06/2020		1620.0000	*	484.0000
Barium	ug/L	OW-401B	04/02/2021		1800.0000	*	484.0000
Barium	ug/L	OW-401B	11/09/2021		1490.0000	*	484.0000
Barium	ug/L	OW-401B	04/14/2022		1300.0000	*	484.0000
Barium	ug/L	OW-401B	11/09/2022		1110.0000	*	484.0000
Barium	ug/L	OW-401B	03/28/2023		1230.0000	*	484.0000
Barium	ug/L	OW-401B	09/28/2023		1140.0000	*	484.0000
Barium	ug/L	OW-401B	05/14/2024		1710.0000	*	484.0000
Barium	ug/L	OW-401B	10/15/2024		1760.0000	*	484.0000
Benzene	ug/L	OW-401B	09/27/2010		3.8900	*	0.2290
Benzene	ug/L	OW-401B	02/23/2011		2.9400	*	0.2290
Benzene	ug/L	OW-401B	03/25/2011		3.4400	*	0.2290
Benzene	ug/L	OW-401B	05/03/2011		3.5400	*	0.2290
Benzene	ug/L	OW-401B	06/23/2011		3.1800	*	0.2290
Benzene	ug/L	OW-401B	08/26/2011		4.0500	*	0.2290
Benzene	ug/L	OW-401B	11/07/2011		5.3000	*	0.2290

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Table 8

Historical Downgradient Data for Constituent-Well Combinations that Failed the Current Statistical Evaluation or are in Verification Resampling Mode

Constituent	Units	Well	Date		Result		Pred. Limit
Benzene	ug/L	OW-401B	02/22/2012		4.1100	*	0.2290
Benzene	ug/L	OW-401B	05/11/2012		3.3900	*	0.2290
Benzene	ug/L	OW-401B	12/06/2012		5.6200	*	0.2290
Benzene	ug/L	OW-401B	04/26/2013		4.5400	*	0.2290
Benzene	ug/L	OW-401B	10/14/2013		5.2400	*	0.2290
Benzene	ug/L	OW-401B	04/02/2014		5.1200	*	0.2290
Benzene	ug/L	OW-401B	08/29/2014		5.1400	*	0.2290
Benzene	ug/L	OW-401B	03/10/2015		4.9600	*	0.2290
Benzene	ug/L	OW-401B	08/26/2015		3.7500	*	0.2290
Benzene	ug/L	OW-401B	03/25/2016		4.1600	*	0.2290
Benzene	ug/L	OW-401B	10/03/2016		4.3500	*	0.2290
Benzene	ug/L	OW-401B	12/12/2016		3.6000	*	0.2290
Benzene	ug/L	OW-401B	04/06/2017		4.8400	*	0.2290
Benzene	ug/L	OW-401B	09/29/2017		4.0700	*	0.2290
Benzene	ug/L	OW-401B	04/09/2018		4.7500	*	0.2290
Benzene	ug/L	OW-401B	09/20/2018	ND	0.2200		0.2290
Benzene	ug/L	OW-401B	04/16/2019		5.6700	*	0.2290
Benzene	ug/L	OW-401B	10/03/2019		4.6400	*	0.2290
Benzene	ug/L	OW-401B	04/14/2020		5.8100	*	0.2290
Benzene	ug/L	OW-401B	10/06/2020		4.5000	*	0.2290
Benzene	ug/L	OW-401B	04/02/2021		4.0100	*	0.2290
Benzene	ug/L	OW-401B	11/09/2021		4.1500	*	0.2290
Benzene	ug/L	OW-401B	04/14/2022		4.0800	*	0.2290
Benzene	ug/L	OW-401B	11/09/2022		4.0100	*	0.2290
Benzene	ug/L	OW-401B	03/28/2023		2.7000	*	0.2290
Benzene	ug/L	OW-401B	09/28/2023		4.4100	*	0.2290
Benzene	ug/L	OW-401B	05/14/2024		3.7900	*	0.2290
Benzene	ug/L	OW-401B	10/15/2024		3.4600	*	0.2290
Barium	ug/L	OW-402B	02/23/2011		423.0000		484.0000
Barium	ug/L	OW-402B	03/25/2011		383.0000		484.0000
Barium	ug/L	OW-402B	05/02/2011		355.0000		484.0000
Barium	ug/L	OW-402B	06/23/2011		324.0000		484.0000
Barium	ug/L	OW-402B	08/26/2011		287.0000		484.0000
Barium	ug/L	OW-402B	11/08/2011		266.0000		484.0000
Barium	ug/L	OW-402B	02/22/2012		370.0000		484.0000
Barium	ug/L	OW-402B	05/11/2012		310.0000		484.0000
Barium	ug/L	OW-402B	12/07/2012		380.0000		484.0000
Barium	ug/L	OW-402B	04/26/2013		374.0000		484.0000
Barium	ug/L	OW-402B	10/15/2013		260.0000		484.0000
Barium	ug/L	OW-402B	03/18/2014		357.0000		484.0000
Barium	ug/L	OW-402B	08/29/2014		284.0000		484.0000
Barium	ug/L	OW-402B	02/24/2015		365.0000		484.0000
Barium	ug/L	OW-402B	08/26/2015		294.0000		484.0000
Barium	ug/L	OW-402B	03/25/2016		378.0000		484.0000
Barium	ug/L	OW-402B	09/30/2016		283.0000		484.0000
Barium	ug/L	OW-402B	12/09/2016		381.0000		484.0000
Barium	ug/L	OW-402B	04/06/2017		358.0000		484.0000
Barium	ug/L	OW-402B	09/18/2017		469.0000		484.0000
Barium	ug/L	OW-402B	03/29/2018		609.0000	*	484.0000
Barium	ug/L	OW-402B	09/14/2018		489.0000	*	484.0000
Barium	ug/L	OW-402B	04/16/2019		444.0000		484.0000
Barium	ug/L	OW-402B	10/07/2019		691.0000	*	484.0000
Barium	ug/L	OW-402B	03/25/2020		573.0000	*	484.0000
Barium	ug/L	OW-402B	10/06/2020		892.0000	*	484.0000
Barium	ug/L	OW-402B	04/02/2021		866.0000	*	484.0000
Barium	ug/L	OW-402B	11/22/2021		1010.0000	*	484.0000
Barium	ug/L	OW-402B	04/14/2022		979.0000	*	484.0000
Barium	ug/L	OW-402B	11/09/2022		949.0000	*	484.0000
Barium	ug/L	OW-402B	03/28/2023		857.0000	*	484.0000
Barium	ug/L	OW-402B	09/28/2023		850.0000	*	484.0000

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Table 8

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Constituent	Units	Well	Date		Result		Pred. Limit
Barium	ug/L	OW-402B	05/15/2024		581.0000	*	484.0000
Barium	ug/L	OW-402B	10/16/2024		988.0000	*	484.0000
Benzene	ug/L	OW-402B	02/23/2011		1.1500	*	0.2290
Benzene	ug/L	OW-402B	03/25/2011		1.4200	*	0.2290
Benzene	ug/L	OW-402B	05/02/2011		1.2900	*	0.2290
Benzene	ug/L	OW-402B	06/23/2011		1.6300	*	0.2290
Benzene	ug/L	OW-402B	08/26/2011		1.4900	*	0.2290
Benzene	ug/L	OW-402B	11/08/2011		1.3200	*	0.2290
Benzene	ug/L	OW-402B	02/22/2012		1.2500	*	0.2290
Benzene	ug/L	OW-402B	05/11/2012		0.9800	*	0.2290
Benzene	ug/L	OW-402B	12/07/2012		2.1900	*	0.2290
Benzene	ug/L	OW-402B	04/26/2013		0.9080	*	0.2290
Benzene	ug/L	OW-402B	10/15/2013		1.4000	*	0.2290
Benzene	ug/L	OW-402B	03/18/2014		1.9700	*	0.2290
Benzene	ug/L	OW-402B	08/29/2014		1.4800	*	0.2290
Benzene	ug/L	OW-402B	02/24/2015		1.8800	*	0.2290
Benzene	ug/L	OW-402B	08/26/2015		0.8660	*	0.2290
Benzene	ug/L	OW-402B	03/25/2016	ND	0.1100		0.2290
Benzene	ug/L	OW-402B	09/30/2016		0.6220	*	0.2290
Benzene	ug/L	OW-402B	12/09/2016		1.2900	*	0.2290
Benzene	ug/L	OW-402B	04/06/2017		0.6090	*	0.2290
Benzene	ug/L	OW-402B	09/18/2017		1.5900	*	0.2290
Benzene	ug/L	OW-402B	03/29/2018		1.6000	*	0.2290
Benzene	ug/L	OW-402B	09/14/2018		1.4000	*	0.2290
Benzene	ug/L	OW-402B	04/16/2019		0.6790	*	0.2290
Benzene	ug/L	OW-402B	10/07/2019		1.2200	*	0.2290
Benzene	ug/L	OW-402B	03/25/2020		0.8240	*	0.2290
Benzene	ug/L	OW-402B	10/06/2020		1.5600	*	0.2290
Benzene	ug/L	OW-402B	04/02/2021		0.8000	*	0.2290
Benzene	ug/L	OW-402B	11/22/2021		1.3200	*	0.2290
Benzene	ug/L	OW-402B	04/14/2022		0.5640	*	0.2290
Benzene	ug/L	OW-402B	11/09/2022		1.1400	*	0.2290
Benzene	ug/L	OW-402B	03/28/2023		0.6460	*	0.2290
Benzene	ug/L	OW-402B	09/28/2023		0.9550	*	0.2290
Benzene	ug/L	OW-402B	05/15/2024	ND	0.2200		0.2290
Benzene	ug/L	OW-402B	10/16/2024		0.9470	*	0.2290
Cis-1,2-dichloroethylene	ug/L	OW-402B	02/23/2011		48.6000	*	0.2960
Cis-1,2-dichloroethylene	ug/L	OW-402B	03/25/2011		76.6000	*	0.2960
Cis-1,2-dichloroethylene	ug/L	OW-402B	05/02/2011		70.0000	*	0.2960
Cis-1,2-dichloroethylene	ug/L	OW-402B	06/23/2011		78.0000	*	0.2960
Cis-1,2-dichloroethylene	ug/L	OW-402B	08/26/2011		34.6000	*	0.2960
Cis-1,2-dichloroethylene	ug/L	OW-402B	11/08/2011		36.2000	*	0.2960
Cis-1,2-dichloroethylene	ug/L	OW-402B	02/22/2012		38.0000	*	0.2960
Cis-1,2-dichloroethylene	ug/L	OW-402B	05/11/2012		26.9000	*	0.2960
Cis-1,2-dichloroethylene	ug/L	OW-402B	12/07/2012		56.1000	*	0.2960
Cis-1,2-dichloroethylene	ug/L	OW-402B	04/26/2013		29.9000	*	0.2960
Cis-1,2-dichloroethylene	ug/L	OW-402B	10/15/2013		17.0000	*	0.2960
Cis-1,2-dichloroethylene	ug/L	OW-402B	03/18/2014		47.0000	*	0.2960
Cis-1,2-dichloroethylene	ug/L	OW-402B	08/29/2014		22.1000	*	0.2960
Cis-1,2-dichloroethylene	ug/L	OW-402B	02/24/2015		44.0000	*	0.2960
Cis-1,2-dichloroethylene	ug/L	OW-402B	08/26/2015		16.2000	*	0.2960
Cis-1,2-dichloroethylene	ug/L	OW-402B	03/25/2016		3.6300	*	0.2960
Cis-1,2-dichloroethylene	ug/L	OW-402B	09/30/2016		5.7500	*	0.2960
Cis-1,2-dichloroethylene	ug/L	OW-402B	12/09/2016		20.4000	*	0.2960
Cis-1,2-dichloroethylene	ug/L	OW-402B	04/06/2017		10.3000	*	0.2960
Cis-1,2-dichloroethylene	ug/L	OW-402B	09/18/2017		24.4000	*	0.2960
Cis-1,2-dichloroethylene	ug/L	OW-402B	03/29/2018		38.0000	*	0.2960
Cis-1,2-dichloroethylene	ug/L	OW-402B	09/14/2018		17.7000	*	0.2960
Cis-1,2-dichloroethylene	ug/L	OW-402B	04/16/2019		10.9000	*	0.2960
Cis-1,2-dichloroethylene	ug/L	OW-402B	10/07/2019		20.7000	*	0.2960

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Constituent	Units	Well	Date		Result		Pred. Limit
Cis-1,2-dichloroethylene	ug/L	OW-402B	03/25/2020		14.8000	*	0.2960
Cis-1,2-dichloroethylene	ug/L	OW-402B	10/06/2020		23.5000	*	0.2960
Cis-1,2-dichloroethylene	ug/L	OW-402B	04/02/2021		12.2000	*	0.2960
Cis-1,2-dichloroethylene	ug/L	OW-402B	11/22/2021		16.6000	*	0.2960
Cis-1,2-dichloroethylene	ug/L	OW-402B	04/14/2022		14.3000	*	0.2960
Cis-1,2-dichloroethylene	ug/L	OW-402B	11/09/2022		15.4000	*	0.2960
Cis-1,2-dichloroethylene	ug/L	OW-402B	03/28/2023		14.8000	*	0.2960
Cis-1,2-dichloroethylene	ug/L	OW-402B	09/28/2023		13.1000	*	0.2960
Cis-1,2-dichloroethylene	ug/L	OW-402B	05/15/2024	ND	0.2100		0.2960
Cis-1,2-dichloroethylene	ug/L	OW-402B	10/16/2024		10.4000	*	0.2960
Cobalt	ug/L	OW-402B	02/23/2011		23.0000	*	5.7900
Cobalt	ug/L	OW-402B	03/25/2011	ND	20.0000		5.7900
Cobalt	ug/L	OW-402B	05/02/2011	ND	20.0000		5.7900
Cobalt	ug/L	OW-402B	06/23/2011	ND	20.0000		5.7900
Cobalt	ug/L	OW-402B	08/26/2011	ND	20.0000		5.7900
Cobalt	ug/L	OW-402B	11/08/2011		10.3000	*	5.7900
Cobalt	ug/L	OW-402B	02/22/2012		12.3000	*	5.7900
Cobalt	ug/L	OW-402B	05/11/2012		6.8200	*	5.7900
Cobalt	ug/L	OW-402B	12/07/2012	ND	1.5500		5.7900
Cobalt	ug/L	OW-402B	04/26/2013		26.5000	*	5.7900
Cobalt	ug/L	OW-402B	10/15/2013		5.3300		5.7900
Cobalt	ug/L	OW-402B	03/18/2014		8.6900	*	5.7900
Cobalt	ug/L	OW-402B	08/29/2014		4.7000		5.7900
Cobalt	ug/L	OW-402B	02/24/2015		6.8500	*	5.7900
Cobalt	ug/L	OW-402B	08/26/2015		5.2300		5.7900
Cobalt	ug/L	OW-402B	03/25/2016		7.9300	*	5.7900
Cobalt	ug/L	OW-402B	09/30/2016		3.3000		5.7900
Cobalt	ug/L	OW-402B	12/09/2016		5.1100		5.7900
Cobalt	ug/L	OW-402B	04/06/2017		16.7000	*	5.7900
Cobalt	ug/L	OW-402B	09/18/2017		6.8300	*	5.7900
Cobalt	ug/L	OW-402B	03/29/2018		12.9000	*	5.7900
Cobalt	ug/L	OW-402B	09/14/2018		2.8900		5.7900
Cobalt	ug/L	OW-402B	04/16/2019		7.1300	*	5.7900
Cobalt	ug/L	OW-402B	10/07/2019		4.1200		5.7900
Cobalt	ug/L	OW-402B	03/25/2020		3.0300		5.7900
Cobalt	ug/L	OW-402B	10/06/2020		7.2600	*	5.7900
Cobalt	ug/L	OW-402B	04/02/2021		18.4000	*	5.7900
Cobalt	ug/L	OW-402B	11/22/2021		6.7400	*	5.7900
Cobalt	ug/L	OW-402B	04/14/2022		9.3500	*	5.7900
Cobalt	ug/L	OW-402B	11/09/2022		8.3300	*	5.7900
Cobalt	ug/L	OW-402B	03/28/2023		21.2000	*	5.7900
Cobalt	ug/L	OW-402B	09/28/2023		7.5200	*	5.7900
Cobalt	ug/L	OW-402B	05/15/2024		2.0200		5.7900
Cobalt	ug/L	OW-402B	10/16/2024		7.9900	*	5.7900
Nickel	ug/L	OW-402B	02/23/2011		761.0000	*	55.9916
Nickel	ug/L	OW-402B	03/25/2011		354.0000	*	55.9916
Nickel	ug/L	OW-402B	05/02/2011		313.0000	*	55.9916
Nickel	ug/L	OW-402B	06/23/2011		594.0000	*	55.9916
Nickel	ug/L	OW-402B	08/26/2011		256.0000	*	55.9916
Nickel	ug/L	OW-402B	11/08/2011		505.0000	*	55.9916
Nickel	ug/L	OW-402B	02/22/2012		288.0000	*	55.9916
Nickel	ug/L	OW-402B	05/11/2012		328.0000	*	55.9916
Nickel	ug/L	OW-402B	12/07/2012		282.0000	*	55.9916
Nickel	ug/L	OW-402B	04/26/2013		1070.0000	*	55.9916
Nickel	ug/L	OW-402B	10/15/2013		121.0000	*	55.9916
Nickel	ug/L	OW-402B	03/18/2014		205.0000	*	55.9916
Nickel	ug/L	OW-402B	08/29/2014		105.0000	*	55.9916
Nickel	ug/L	OW-402B	02/24/2015		200.0000	*	55.9916
Nickel	ug/L	OW-402B	08/26/2015		143.0000	*	55.9916
Nickel	ug/L	OW-402B	03/25/2016		441.0000	*	55.9916

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ND = Not Detected, Result = detection limit.

Table 8

Historical Downgradient Data for Constituent-Well Combinations that Failed the Current Statistical Evaluation or are in Verification Resampling Mode

Constituent	Units	Well	Date		Result		Pred. Limit
Nickel	ug/L	OW-402B	09/30/2016		55.0000		55.9916
Nickel	ug/L	OW-402B	12/09/2016		171.0000	*	55.9916
Nickel	ug/L	OW-402B	04/06/2017		722.0000	*	55.9916
Nickel	ug/L	OW-402B	09/18/2017		258.0000	*	55.9916
Nickel	ug/L	OW-402B	03/29/2018		836.0000	*	55.9916
Nickel	ug/L	OW-402B	09/14/2018		97.3000	*	55.9916
Nickel	ug/L	OW-402B	04/16/2019		328.0000	*	55.9916
Nickel	ug/L	OW-402B	10/07/2019		144.0000	*	55.9916
Nickel	ug/L	OW-402B	03/25/2020		73.1000	*	55.9916
Nickel	ug/L	OW-402B	10/06/2020		396.0000	*	55.9916
Nickel	ug/L	OW-402B	04/02/2021		988.0000	*	55.9916
Nickel	ug/L	OW-402B	11/22/2021		322.0000	*	55.9916
Nickel	ug/L	OW-402B	04/14/2022		602.0000	*	55.9916
Nickel	ug/L	OW-402B	11/09/2022		460.0000	*	55.9916
Nickel	ug/L	OW-402B	03/28/2023		1270.0000	*	55.9916
Nickel	ug/L	OW-402B	09/28/2023		402.0000	*	55.9916
Nickel	ug/L	OW-402B	05/15/2024		30.4000		55.9916
Nickel	ug/L	OW-402B	10/16/2024		353.0000	*	55.9916
Vinyl chloride	ug/L	OW-402B	02/23/2011		20.7000	*	0.1800
Vinyl chloride	ug/L	OW-402B	03/25/2011		27.9000	*	0.1800
Vinyl chloride	ug/L	OW-402B	05/02/2011		24.8000	*	0.1800
Vinyl chloride	ug/L	OW-402B	06/23/2011		33.7000	*	0.1800
Vinyl chloride	ug/L	OW-402B	08/26/2011		11.2000	*	0.1800
Vinyl chloride	ug/L	OW-402B	11/08/2011		12.7000	*	0.1800
Vinyl chloride	ug/L	OW-402B	02/22/2012		11.4000	*	0.1800
Vinyl chloride	ug/L	OW-402B	05/11/2012		6.4800	*	0.1800
Vinyl chloride	ug/L	OW-402B	12/07/2012		18.0000	*	0.1800
Vinyl chloride	ug/L	OW-402B	04/26/2013		7.6700	*	0.1800
Vinyl chloride	ug/L	OW-402B	10/15/2013		4.0100	*	0.1800
Vinyl chloride	ug/L	OW-402B	03/18/2014		14.9000	*	0.1800
Vinyl chloride	ug/L	OW-402B	08/29/2014		5.4200	*	0.1800
Vinyl chloride	ug/L	OW-402B	02/24/2015		11.7000	*	0.1800
Vinyl chloride	ug/L	OW-402B	08/26/2015		4.2200	*	0.1800
Vinyl chloride	ug/L	OW-402B	03/25/2016	ND	0.1000		0.1800
Vinyl chloride	ug/L	OW-402B	09/30/2016		1.2700	*	0.1800
Vinyl chloride	ug/L	OW-402B	12/09/2016		4.3500	*	0.1800
Vinyl chloride	ug/L	OW-402B	04/06/2017		1.9000	*	0.1800
Vinyl chloride	ug/L	OW-402B	09/18/2017		5.0800	*	0.1800
Vinyl chloride	ug/L	OW-402B	03/29/2018		7.0600	*	0.1800
Vinyl chloride	ug/L	OW-402B	09/14/2018		3.4900	*	0.1800
Vinyl chloride	ug/L	OW-402B	04/16/2019		1.7600	*	0.1800
Vinyl chloride	ug/L	OW-402B	10/07/2019		3.6500	*	0.1800
Vinyl chloride	ug/L	OW-402B	03/25/2020		2.0200	*	0.1800
Vinyl chloride	ug/L	OW-402B	10/06/2020		3.5600	*	0.1800
Vinyl chloride	ug/L	OW-402B	04/02/2021		2.0600	*	0.1800
Vinyl chloride	ug/L	OW-402B	11/22/2021		2.4500	*	0.1800
Vinyl chloride	ug/L	OW-402B	04/14/2022		1.9900	*	0.1800
Vinyl chloride	ug/L	OW-402B	11/09/2022		1.9600	*	0.1800
Vinyl chloride	ug/L	OW-402B	03/28/2023		2.0700	*	0.1800
Vinyl chloride	ug/L	OW-402B	09/28/2023		1.9000	*	0.1800
Vinyl chloride	ug/L	OW-402B	05/15/2024	ND	0.1800		0.1800
Vinyl chloride	ug/L	OW-402B	10/16/2024		1.5500	*	0.1800
Arsenic	ug/L	OW-410B	12/15/2016		1.7600		4.1800
Arsenic	ug/L	OW-410B	04/08/2017		1.1200		4.1800
Arsenic	ug/L	OW-410B	06/21/2017		0.9170		4.1800
Arsenic	ug/L	OW-410B	09/14/2017		1.2200		4.1800
Arsenic	ug/L	OW-410B	11/30/2017		1.8800		4.1800
Arsenic	ug/L	OW-410B	03/27/2018		1.2300		4.1800
Arsenic	ug/L	OW-410B	09/17/2018		2.2900		4.1800
Arsenic	ug/L	OW-410B	04/02/2019		5.2400	*	4.1800

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Table 8

Historical Downgradient Data for Constituent-Well Combinations that Failed the Current Statistical Evaluation or are in Verification Resampling Mode

Constituent	Units	Well	Date		Result		Pred. Limit
Arsenic	ug/L	OW-410B	09/25/2019	ND	1.5000		4.1800
Arsenic	ug/L	OW-410B	04/08/2020		7.4800	*	4.1800
Arsenic	ug/L	OW-410B	09/22/2020		4.8200	*	4.1800
Arsenic	ug/L	OW-410B	03/30/2021		7.2500	*	4.1800
Arsenic	ug/L	OW-410B	05/05/2022		6.5700	*	4.1800
Arsenic	ug/L	OW-410B	03/24/2023		6.5300	*	4.1800
Arsenic	ug/L	OW-410B	05/16/2024		11.8000	*	4.1800
Barium	ug/L	OW-410B	12/15/2016		902.0000	*	484.0000
Barium	ug/L	OW-410B	04/08/2017		809.0000	*	484.0000
Barium	ug/L	OW-410B	06/21/2017		921.0000	*	484.0000
Barium	ug/L	OW-410B	09/14/2017		1020.0000	*	484.0000
Barium	ug/L	OW-410B	11/30/2017		1030.0000	*	484.0000
Barium	ug/L	OW-410B	03/27/2018		86.9000		484.0000
Barium	ug/L	OW-410B	09/17/2018		1370.0000	*	484.0000
Barium	ug/L	OW-410B	04/02/2019		1800.0000	*	484.0000
Barium	ug/L	OW-410B	09/25/2019		1630.0000	*	484.0000
Barium	ug/L	OW-410B	04/08/2020		2360.0000	*	484.0000
Barium	ug/L	OW-410B	09/22/2020		2270.0000	*	484.0000
Barium	ug/L	OW-410B	03/30/2021		2890.0000	*	484.0000
Barium	ug/L	OW-410B	05/05/2022		2370.0000	*	484.0000
Barium	ug/L	OW-410B	03/24/2023		3030.0000	*	484.0000
Barium	ug/L	OW-410B	05/16/2024		2750.0000	*	484.0000
Benzene	ug/L	OW-410B	12/15/2016		3.8500	*	0.2290
Benzene	ug/L	OW-410B	04/08/2017		0.9730	*	0.2290
Benzene	ug/L	OW-410B	06/21/2017		0.6500	*	0.2290
Benzene	ug/L	OW-410B	09/14/2017		1.1800	*	0.2290
Benzene	ug/L	OW-410B	11/30/2017		1.1500	*	0.2290
Benzene	ug/L	OW-410B	03/27/2018	ND	0.1100		0.2290
Benzene	ug/L	OW-410B	09/17/2018		0.8100	*	0.2290
Benzene	ug/L	OW-410B	04/02/2019	ND	0.2200		0.2290
Benzene	ug/L	OW-410B	09/25/2019		0.9530	*	0.2290
Benzene	ug/L	OW-410B	04/08/2020		2.9600	*	0.2290
Benzene	ug/L	OW-410B	09/22/2020		1.4500	*	0.2290
Benzene	ug/L	OW-410B	03/30/2021		3.6000	*	0.2290
Benzene	ug/L	OW-410B	05/05/2022		1.8800	*	0.2290
Benzene	ug/L	OW-410B	03/24/2023		1.7700	*	0.2290
Benzene	ug/L	OW-410B	05/16/2024		2.0200	*	0.2290
Cobalt	ug/L	OW-410B	12/15/2016		7.6000	*	5.7900
Cobalt	ug/L	OW-410B	04/08/2017		3.6500		5.7900
Cobalt	ug/L	OW-410B	06/21/2017		2.3800		5.7900
Cobalt	ug/L	OW-410B	09/14/2017		3.4800		5.7900
Cobalt	ug/L	OW-410B	11/30/2017		3.1000		5.7900
Cobalt	ug/L	OW-410B	03/27/2018		0.3790		5.7900
Cobalt	ug/L	OW-410B	09/17/2018		4.1000		5.7900
Cobalt	ug/L	OW-410B	04/02/2019		5.4000		5.7900
Cobalt	ug/L	OW-410B	09/25/2019		2.5200		5.7900
Cobalt	ug/L	OW-410B	04/08/2020		7.3400	*	5.7900
Cobalt	ug/L	OW-410B	09/22/2020		2.0400		5.7900
Cobalt	ug/L	OW-410B	03/30/2021		11.6000	*	5.7900
Cobalt	ug/L	OW-410B	05/05/2022		17.3000	*	5.7900
Cobalt	ug/L	OW-410B	03/24/2023		14.3000	*	5.7900
Cobalt	ug/L	OW-410B	05/16/2024		13.8000	*	5.7900
Arsenic	ug/L	OW-411B	12/15/2016		2.0300		4.1800
Arsenic	ug/L	OW-411B	04/07/2017		1.2300		4.1800
Arsenic	ug/L	OW-411B	06/14/2017		1.3800		4.1800
Arsenic	ug/L	OW-411B	09/14/2017		1.1700		4.1800
Arsenic	ug/L	OW-411B	11/28/2017		1.6200		4.1800
Arsenic	ug/L	OW-411B	03/26/2018		1.9400		4.1800
Arsenic	ug/L	OW-411B	09/07/2018		0.9660		4.1800
Arsenic	ug/L	OW-411B	04/05/2019		3.5700		4.1800

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Table 8

Historical Downgradient Data for Constituent-Well Combinations that Failed the Current Statistical Evaluation or are in Verification Resampling Mode

Constituent	Units	Well	Date		Result		Pred. Limit
Arsenic	ug/L	OW-411B	09/23/2019		3.5200		4.1800
Arsenic	ug/L	OW-411B	04/02/2020		4.2000	*	4.1800
Arsenic	ug/L	OW-411B	09/29/2020		3.9700		4.1800
Arsenic	ug/L	OW-411B	03/30/2021		4.9800	*	4.1800
Arsenic	ug/L	OW-411B	04/21/2022		4.8500	*	4.1800
Arsenic	ug/L	OW-411B	04/13/2023		4.7400	*	4.1800
Arsenic	ug/L	OW-411B	05/15/2024		4.0700		4.1800
Barium	ug/L	OW-411B	12/15/2016		483.0000		484.0000
Barium	ug/L	OW-411B	04/07/2017		459.0000		484.0000
Barium	ug/L	OW-411B	06/14/2017		558.0000	*	484.0000
Barium	ug/L	OW-411B	09/14/2017		441.0000		484.0000
Barium	ug/L	OW-411B	11/28/2017		459.0000		484.0000
Barium	ug/L	OW-411B	03/26/2018		510.0000	*	484.0000
Barium	ug/L	OW-411B	09/07/2018		856.0000	*	484.0000
Barium	ug/L	OW-411B	04/05/2019		480.0000		484.0000
Barium	ug/L	OW-411B	09/23/2019		425.0000		484.0000
Barium	ug/L	OW-411B	04/02/2020		454.0000		484.0000
Barium	ug/L	OW-411B	09/29/2020		420.0000		484.0000
Barium	ug/L	OW-411B	03/30/2021		479.0000		484.0000
Barium	ug/L	OW-411B	04/21/2022		477.0000		484.0000
Barium	ug/L	OW-411B	04/13/2023		605.0000	*	484.0000
Barium	ug/L	OW-411B	05/15/2024		687.0000	*	484.0000
Arsenic	ug/L	OW-412B	12/06/2016	ND	0.6720		4.1800
Arsenic	ug/L	OW-412B	04/07/2017		0.9340		4.1800
Arsenic	ug/L	OW-412B	06/13/2017		0.6470		4.1800
Arsenic	ug/L	OW-412B	09/13/2017		0.5840		4.1800
Arsenic	ug/L	OW-412B	11/28/2017		0.7250		4.1800
Arsenic	ug/L	OW-412B	03/22/2018	ND	0.5700		4.1800
Arsenic	ug/L	OW-412B	09/07/2018		3.2900		4.1800
Arsenic	ug/L	OW-412B	04/05/2019	ND	0.7500		4.1800
Arsenic	ug/L	OW-412B	09/23/2019		3.9100		4.1800
Arsenic	ug/L	OW-412B	04/10/2020	ND	0.8800		4.1800
Arsenic	ug/L	OW-412B	09/28/2020		2.1500		4.1800
Arsenic	ug/L	OW-412B	03/11/2021		2.1600		4.1800
Arsenic	ug/L	OW-412B	04/21/2022		5.1400	*	4.1800
Arsenic	ug/L	OW-412B	04/07/2023		4.3500	*	4.1800
Arsenic	ug/L	OW-412B	05/15/2024		4.1800		4.1800
Barium	ug/L	OW-412B	12/06/2016		444.0000		484.0000
Barium	ug/L	OW-412B	04/07/2017		574.0000	*	484.0000
Barium	ug/L	OW-412B	06/13/2017		582.0000	*	484.0000
Barium	ug/L	OW-412B	09/13/2017		614.0000	*	484.0000
Barium	ug/L	OW-412B	11/28/2017		574.0000	*	484.0000
Barium	ug/L	OW-412B	03/22/2018		643.0000	*	484.0000
Barium	ug/L	OW-412B	09/07/2018		167.0000		484.0000
Barium	ug/L	OW-412B	04/05/2019		797.0000	*	484.0000
Barium	ug/L	OW-412B	09/23/2019		951.0000	*	484.0000
Barium	ug/L	OW-412B	04/10/2020		890.0000	*	484.0000
Barium	ug/L	OW-412B	09/28/2020		1070.0000	*	484.0000
Barium	ug/L	OW-412B	03/11/2021		1220.0000	*	484.0000
Barium	ug/L	OW-412B	04/21/2022		1180.0000	*	484.0000
Barium	ug/L	OW-412B	04/07/2023		1510.0000	*	484.0000
Barium	ug/L	OW-412B	05/15/2024		1390.0000	*	484.0000
Benzene	ug/L	OW-412B	12/06/2016		0.2350	*	0.2290
Benzene	ug/L	OW-412B	04/07/2017		0.6050	*	0.2290
Benzene	ug/L	OW-412B	06/13/2017		0.6680	*	0.2290
Benzene	ug/L	OW-412B	09/13/2017		0.6530	*	0.2290
Benzene	ug/L	OW-412B	11/28/2017		0.7060	*	0.2290
Benzene	ug/L	OW-412B	03/22/2018		0.6160	*	0.2290
Benzene	ug/L	OW-412B	09/07/2018		0.8520	*	0.2290
Benzene	ug/L	OW-412B	04/05/2019		0.7190	*	0.2290

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Table 8

Historical Downgradient Data for Constituent-Well Combinations that Failed the Current Statistical Evaluation or are in Verification Resampling Mode

Constituent	Units	Well	Date		Result		Pred. Limit
Benzene	ug/L	OW-412B	09/23/2019		0.9210	*	0.2290
Benzene	ug/L	OW-412B	04/10/2020	ND	0.2200		0.2290
Benzene	ug/L	OW-412B	09/28/2020		0.7240	*	0.2290
Benzene	ug/L	OW-412B	03/11/2021		0.6920	*	0.2290
Benzene	ug/L	OW-412B	04/21/2022		0.5420	*	0.2290
Benzene	ug/L	OW-412B	04/07/2023		0.5250	*	0.2290
Benzene	ug/L	OW-412B	05/15/2024	ND	0.2200		0.2290
Cis-1,2-dichloroethylene	ug/L	OW-412B	12/06/2016		5.9000	*	0.2960
Cis-1,2-dichloroethylene	ug/L	OW-412B	04/07/2017		8.1000	*	0.2960
Cis-1,2-dichloroethylene	ug/L	OW-412B	06/13/2017		9.4700	*	0.2960
Cis-1,2-dichloroethylene	ug/L	OW-412B	09/13/2017		11.3000	*	0.2960
Cis-1,2-dichloroethylene	ug/L	OW-412B	11/28/2017		12.7000	*	0.2960
Cis-1,2-dichloroethylene	ug/L	OW-412B	03/22/2018		14.8000	*	0.2960
Cis-1,2-dichloroethylene	ug/L	OW-412B	09/07/2018		16.7000	*	0.2960
Cis-1,2-dichloroethylene	ug/L	OW-412B	04/05/2019		15.8000	*	0.2960
Cis-1,2-dichloroethylene	ug/L	OW-412B	09/23/2019		18.4000	*	0.2960
Cis-1,2-dichloroethylene	ug/L	OW-412B	04/10/2020		10.2000	*	0.2960
Cis-1,2-dichloroethylene	ug/L	OW-412B	09/28/2020		16.3000	*	0.2960
Cis-1,2-dichloroethylene	ug/L	OW-412B	03/11/2021		16.4000	*	0.2960
Cis-1,2-dichloroethylene	ug/L	OW-412B	04/21/2022		17.5000	*	0.2960
Cis-1,2-dichloroethylene	ug/L	OW-412B	04/07/2023		17.8000	*	0.2960
Cis-1,2-dichloroethylene	ug/L	OW-412B	05/15/2024		11.8000	*	0.2960
Thallium	ug/L	OW-412B	12/06/2016	ND	0.0255		0.2600
Thallium	ug/L	OW-412B	04/07/2017	ND	0.0644		0.2600
Thallium	ug/L	OW-412B	06/13/2017	ND	0.0644		0.2600
Thallium	ug/L	OW-412B	09/13/2017	ND	0.0644		0.2600
Thallium	ug/L	OW-412B	11/28/2017	ND	0.0644		0.2600
Thallium	ug/L	OW-412B	03/22/2018	ND	0.1700		0.2600
Thallium	ug/L	OW-412B	09/07/2018	ND	0.1700		0.2600
Thallium	ug/L	OW-412B	04/05/2019	ND	0.2700		0.2600
Thallium	ug/L	OW-412B	09/23/2019	ND	0.2700		0.2600
Thallium	ug/L	OW-412B	04/10/2020	ND	0.2600		0.2600
Thallium	ug/L	OW-412B	09/28/2020	ND	0.2600		0.2600
Thallium	ug/L	OW-412B	03/11/2021	ND	0.2600		0.2600
Thallium	ug/L	OW-412B	04/21/2022	ND	0.2600		0.2600
Thallium	ug/L	OW-412B	04/07/2023		2.4200	*	0.2600
Thallium	ug/L	OW-412B	05/15/2024	ND	0.5700		0.2600
Vinyl chloride	ug/L	OW-412B	12/06/2016		0.6950	*	0.1800
Vinyl chloride	ug/L	OW-412B	04/07/2017		2.5600	*	0.1800
Vinyl chloride	ug/L	OW-412B	06/13/2017		3.1100	*	0.1800
Vinyl chloride	ug/L	OW-412B	09/13/2017		2.5400	*	0.1800
Vinyl chloride	ug/L	OW-412B	11/28/2017		4.3300	*	0.1800
Vinyl chloride	ug/L	OW-412B	03/22/2018		2.1600	*	0.1800
Vinyl chloride	ug/L	OW-412B	09/07/2018		3.3900	*	0.1800
Vinyl chloride	ug/L	OW-412B	04/05/2019	ND	0.6000		0.1800
Vinyl chloride	ug/L	OW-412B	09/23/2019		5.0600	*	0.1800
Vinyl chloride	ug/L	OW-412B	04/10/2020	ND	0.1800		0.1800
Vinyl chloride	ug/L	OW-412B	09/28/2020		4.1400	*	0.1800
Vinyl chloride	ug/L	OW-412B	03/11/2021		4.8600	*	0.1800
Vinyl chloride	ug/L	OW-412B	04/21/2022		3.6300	*	0.1800
Vinyl chloride	ug/L	OW-412B	04/07/2023		3.3700	*	0.1800
Vinyl chloride	ug/L	OW-412B	05/15/2024	ND	0.1800		0.1800
Arsenic	ug/L	OW-413B	12/06/2016		4.0300		4.1800
Arsenic	ug/L	OW-413B	04/07/2017		3.7100		4.1800
Arsenic	ug/L	OW-413B	06/15/2017		3.3600		4.1800
Arsenic	ug/L	OW-413B	09/29/2017		4.8500	*	4.1800
Arsenic	ug/L	OW-413B	11/28/2017		4.1300		4.1800
Arsenic	ug/L	OW-413B	03/28/2018		8.3300	*	4.1800
Arsenic	ug/L	OW-413B	09/12/2018		7.7900	*	4.1800
Arsenic	ug/L	OW-413B	04/15/2019		5.3600	*	4.1800

* - Significantly increased over background.
** - Detect at limit for 100% NDs in background (NPPL only).
*** - Manual exclusion.
ND = Not Detected, Result = detection limit.

Table 8

Historical Downgradient Data for Constituent-Well Combinations that Failed the Current Statistical Evaluation or are in Verification Resampling Mode

Constituent	Units	Well	Date		Result		Pred. Limit
Arsenic	ug/L	OW-413B	09/25/2019		4.5700	*	4.1800
Arsenic	ug/L	OW-413B	04/10/2020		7.6500	*	4.1800
Arsenic	ug/L	OW-413B	09/28/2020		5.3100	*	4.1800
Arsenic	ug/L	OW-413B	03/11/2021		4.6200	*	4.1800
Arsenic	ug/L	OW-413B	11/22/2021		3.6800		4.1800
Arsenic	ug/L	OW-413B	04/27/2022		4.2200	*	4.1800
Arsenic	ug/L	OW-413B	11/09/2022		4.6400	*	4.1800
Arsenic	ug/L	OW-413B	04/07/2023		9.1400	*	4.1800
Arsenic	ug/L	OW-413B	10/03/2023		8.0800	*	4.1800
Arsenic	ug/L	OW-413B	05/15/2024		10.8000	*	4.1800
Arsenic	ug/L	OW-413B	10/16/2024		6.3700	*	4.1800
Barium	ug/L	OW-413B	12/06/2016		578.0000	*	484.0000
Barium	ug/L	OW-413B	04/07/2017		364.0000		484.0000
Barium	ug/L	OW-413B	06/15/2017		444.0000		484.0000
Barium	ug/L	OW-413B	09/29/2017		510.0000	*	484.0000
Barium	ug/L	OW-413B	11/28/2017		484.0000		484.0000
Barium	ug/L	OW-413B	03/28/2018		447.0000		484.0000
Barium	ug/L	OW-413B	09/12/2018		403.0000		484.0000
Barium	ug/L	OW-413B	04/15/2019		425.0000		484.0000
Barium	ug/L	OW-413B	09/25/2019		378.0000		484.0000
Barium	ug/L	OW-413B	04/10/2020		349.0000		484.0000
Barium	ug/L	OW-413B	09/28/2020		341.0000		484.0000
Barium	ug/L	OW-413B	03/11/2021		432.0000		484.0000
Barium	ug/L	OW-413B	11/22/2021		492.0000	*	484.0000
Barium	ug/L	OW-413B	04/27/2022		423.0000		484.0000
Barium	ug/L	OW-413B	11/09/2022		514.0000	*	484.0000
Barium	ug/L	OW-413B	04/07/2023		543.0000	*	484.0000
Barium	ug/L	OW-413B	10/03/2023		571.0000	*	484.0000
Barium	ug/L	OW-413B	05/15/2024		632.0000	*	484.0000
Barium	ug/L	OW-413B	10/16/2024		544.0000	*	484.0000
Benzene	ug/L	OW-413B	12/06/2016		2.5700	*	0.2290
Benzene	ug/L	OW-413B	04/07/2017		1.8700	*	0.2290
Benzene	ug/L	OW-413B	06/15/2017		1.2900	*	0.2290
Benzene	ug/L	OW-413B	09/29/2017		1.7200	*	0.2290
Benzene	ug/L	OW-413B	11/28/2017		2.2400	*	0.2290
Benzene	ug/L	OW-413B	03/28/2018		1.9800	*	0.2290
Benzene	ug/L	OW-413B	09/12/2018		2.0000	*	0.2290
Benzene	ug/L	OW-413B	04/15/2019		1.4300	*	0.2290
Benzene	ug/L	OW-413B	09/25/2019		1.3900	*	0.2290
Benzene	ug/L	OW-413B	04/10/2020		1.2600	*	0.2290
Benzene	ug/L	OW-413B	09/28/2020		1.0500	*	0.2290
Benzene	ug/L	OW-413B	03/11/2021		1.1600	*	0.2290
Benzene	ug/L	OW-413B	11/22/2021		1.6400	*	0.2290
Benzene	ug/L	OW-413B	04/27/2022		1.3600	*	0.2290
Benzene	ug/L	OW-413B	11/09/2022		1.5700	*	0.2290
Benzene	ug/L	OW-413B	04/07/2023		1.3200	*	0.2290
Benzene	ug/L	OW-413B	10/03/2023		1.5700	*	0.2290
Benzene	ug/L	OW-413B	05/15/2024		1.1700	*	0.2290
Benzene	ug/L	OW-413B	10/16/2024		1.9000	*	0.2290
Vanadium	ug/L	OW-413B	12/06/2016		1.0500		2.5900
Vanadium	ug/L	OW-413B	04/07/2017	ND	0.8400		2.5900
Vanadium	ug/L	OW-413B	06/15/2017		0.9400		2.5900
Vanadium	ug/L	OW-413B	09/29/2017		1.5800		2.5900
Vanadium	ug/L	OW-413B	11/28/2017		1.2300		2.5900
Vanadium	ug/L	OW-413B	03/28/2018		1.7000		2.5900
Vanadium	ug/L	OW-413B	09/12/2018		2.2000		2.5900
Vanadium	ug/L	OW-413B	04/15/2019	ND	0.8200		2.5900
Vanadium	ug/L	OW-413B	09/25/2019	ND	0.8200		2.5900
Vanadium	ug/L	OW-413B	04/10/2020	ND	0.8200		2.5900
Vanadium	ug/L	OW-413B	09/28/2020	ND	0.8500		2.5900

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Table 8

Historical Downgradient Data for Constituent-Well Combinations that Failed the Current Statistical Evaluation or are in Verification Resampling Mode

Constituent	Units	Well	Date		Result		Pred. Limit
Vanadium	ug/L	OW-413B	03/11/2021	ND	1.1000		2.5900
Vanadium	ug/L	OW-413B	11/22/2021	ND	1.1000		2.5900
Vanadium	ug/L	OW-413B	04/27/2022	ND	1.1000		2.5900
Vanadium	ug/L	OW-413B	11/09/2022	ND	1.1000		2.5900
Vanadium	ug/L	OW-413B	04/07/2023	ND	1.1000		2.5900
Vanadium	ug/L	OW-413B	10/03/2023	ND	1.1000		2.5900
Vanadium	ug/L	OW-413B	05/15/2024		5.9100	*	2.5900
Vanadium	ug/L	OW-413B	10/16/2024	ND	1.1000		2.5900
1,4-dichlorobenzene	ug/L	OW-414B	12/07/2016	ND	0.2000		0.4270
1,4-dichlorobenzene	ug/L	OW-414B	04/07/2017		3.4000	*	0.4270
1,4-dichlorobenzene	ug/L	OW-414B	06/14/2017	ND	0.2000		0.4270
1,4-dichlorobenzene	ug/L	OW-414B	09/13/2017	ND	0.2000		0.4270
1,4-dichlorobenzene	ug/L	OW-414B	11/29/2017		1.5300	*	0.4270
1,4-dichlorobenzene	ug/L	OW-414B	03/21/2018		3.4300	*	0.4270
1,4-dichlorobenzene	ug/L	OW-414B	09/12/2018	ND	0.2300		0.4270
1,4-dichlorobenzene	ug/L	OW-414B	04/16/2019		2.0800	*	0.4270
1,4-dichlorobenzene	ug/L	OW-414B	09/30/2019	ND	0.2300		0.4270
1,4-dichlorobenzene	ug/L	OW-414B	04/10/2020		1.6400	*	0.4270
1,4-dichlorobenzene	ug/L	OW-414B	09/28/2020	ND	0.2300		0.4270
1,4-dichlorobenzene	ug/L	OW-414B	03/11/2021	ND	0.2300		0.4270
1,4-dichlorobenzene	ug/L	OW-414B	04/27/2022		1.5600	*	0.4270
1,4-dichlorobenzene	ug/L	OW-414B	04/07/2023		2.7100	*	0.4270
1,4-dichlorobenzene	ug/L	OW-414B	05/08/2024		1.8400	*	0.4270
Arsenic	ug/L	OW-414B	12/07/2016		2.2400		4.1800
Arsenic	ug/L	OW-414B	04/07/2017		5.9900	*	4.1800
Arsenic	ug/L	OW-414B	06/14/2017		4.1800		4.1800
Arsenic	ug/L	OW-414B	09/13/2017		3.0500		4.1800
Arsenic	ug/L	OW-414B	11/29/2017		6.3800	*	4.1800
Arsenic	ug/L	OW-414B	03/21/2018		6.9900	*	4.1800
Arsenic	ug/L	OW-414B	09/12/2018		6.9900	*	4.1800
Arsenic	ug/L	OW-414B	04/16/2019		6.6500	*	4.1800
Arsenic	ug/L	OW-414B	09/30/2019		5.0200	*	4.1800
Arsenic	ug/L	OW-414B	04/10/2020		4.7400	*	4.1800
Arsenic	ug/L	OW-414B	09/28/2020		7.8700	*	4.1800
Arsenic	ug/L	OW-414B	03/11/2021		8.1100	*	4.1800
Arsenic	ug/L	OW-414B	04/27/2022		4.2400	*	4.1800
Arsenic	ug/L	OW-414B	04/07/2023		7.5400	*	4.1800
Arsenic	ug/L	OW-414B	05/08/2024		9.8500	*	4.1800
Barium	ug/L	OW-414B	12/07/2016		533.0000	*	484.0000
Barium	ug/L	OW-414B	04/07/2017		434.0000		484.0000
Barium	ug/L	OW-414B	06/14/2017		447.0000		484.0000
Barium	ug/L	OW-414B	09/13/2017		591.0000	*	484.0000
Barium	ug/L	OW-414B	11/29/2017		558.0000	*	484.0000
Barium	ug/L	OW-414B	03/21/2018		517.0000	*	484.0000
Barium	ug/L	OW-414B	09/12/2018		504.0000	*	484.0000
Barium	ug/L	OW-414B	04/16/2019		490.0000	*	484.0000
Barium	ug/L	OW-414B	09/30/2019		618.0000	*	484.0000
Barium	ug/L	OW-414B	04/10/2020		501.0000	*	484.0000
Barium	ug/L	OW-414B	09/28/2020		680.0000	*	484.0000
Barium	ug/L	OW-414B	03/11/2021		666.0000	*	484.0000
Barium	ug/L	OW-414B	04/27/2022		449.0000		484.0000
Barium	ug/L	OW-414B	04/07/2023		497.0000	*	484.0000
Barium	ug/L	OW-414B	05/08/2024		642.0000	*	484.0000
Benzene	ug/L	OW-414B	12/07/2016		1.9200	*	0.2290
Benzene	ug/L	OW-414B	04/07/2017		3.0200	*	0.2290
Benzene	ug/L	OW-414B	06/14/2017		2.6600	*	0.2290
Benzene	ug/L	OW-414B	09/13/2017		1.4300	*	0.2290
Benzene	ug/L	OW-414B	11/29/2017		1.6600	*	0.2290
Benzene	ug/L	OW-414B	03/21/2018		3.0000	*	0.2290
Benzene	ug/L	OW-414B	09/12/2018		2.3200	*	0.2290

* - Significantly increased over background.
** - Detect at limit for 100% NDs in background (NPPL only).
*** - Manual exclusion.
ND = Not Detected, Result = detection limit.

Table 8

Historical Downgradient Data for Constituent-Well Combinations that Failed the Current Statistical Evaluation or are in Verification Resampling Mode

Constituent	Units	Well	Date		Result		Pred. Limit
Benzene	ug/L	OW-414B	04/16/2019		2.1500	*	0.2290
Benzene	ug/L	OW-414B	09/30/2019		1.5100	*	0.2290
Benzene	ug/L	OW-414B	04/10/2020		1.3900	*	0.2290
Benzene	ug/L	OW-414B	09/28/2020		1.9700	*	0.2290
Benzene	ug/L	OW-414B	03/11/2021		1.4200	*	0.2290
Benzene	ug/L	OW-414B	04/27/2022		2.1500	*	0.2290
Benzene	ug/L	OW-414B	04/07/2023		2.5400	*	0.2290
Benzene	ug/L	OW-414B	05/08/2024		1.9800	*	0.2290
Cis-1,2-dichloroethylene	ug/L	OW-414B	12/07/2016		31.3000	*	0.2960
Cis-1,2-dichloroethylene	ug/L	OW-414B	04/07/2017		17.6000	*	0.2960
Cis-1,2-dichloroethylene	ug/L	OW-414B	06/14/2017		22.5000	*	0.2960
Cis-1,2-dichloroethylene	ug/L	OW-414B	09/13/2017		27.3000	*	0.2960
Cis-1,2-dichloroethylene	ug/L	OW-414B	11/29/2017		21.5000	*	0.2960
Cis-1,2-dichloroethylene	ug/L	OW-414B	03/21/2018		22.3000	*	0.2960
Cis-1,2-dichloroethylene	ug/L	OW-414B	09/12/2018		24.0000	*	0.2960
Cis-1,2-dichloroethylene	ug/L	OW-414B	04/16/2019		17.3000	*	0.2960
Cis-1,2-dichloroethylene	ug/L	OW-414B	09/30/2019		18.9000	*	0.2960
Cis-1,2-dichloroethylene	ug/L	OW-414B	04/10/2020		16.5000	*	0.2960
Cis-1,2-dichloroethylene	ug/L	OW-414B	09/28/2020		10.7000	*	0.2960
Cis-1,2-dichloroethylene	ug/L	OW-414B	03/11/2021		9.2100	*	0.2960
Cis-1,2-dichloroethylene	ug/L	OW-414B	04/27/2022		10.4000	*	0.2960
Cis-1,2-dichloroethylene	ug/L	OW-414B	04/07/2023		8.9900	*	0.2960
Cis-1,2-dichloroethylene	ug/L	OW-414B	05/08/2024		6.9800	*	0.2960
Cobalt	ug/L	OW-414B	12/07/2016		9.9100	*	5.7900
Cobalt	ug/L	OW-414B	04/07/2017		25.5000	*	5.7900
Cobalt	ug/L	OW-414B	06/14/2017		16.8000	*	5.7900
Cobalt	ug/L	OW-414B	09/13/2017		12.6000	*	5.7900
Cobalt	ug/L	OW-414B	11/29/2017		15.1000	*	5.7900
Cobalt	ug/L	OW-414B	03/21/2018		22.4000	*	5.7900
Cobalt	ug/L	OW-414B	09/12/2018		20.5000	*	5.7900
Cobalt	ug/L	OW-414B	04/16/2019		23.5000	*	5.7900
Cobalt	ug/L	OW-414B	09/30/2019		16.9000	*	5.7900
Cobalt	ug/L	OW-414B	04/10/2020		18.6000	*	5.7900
Cobalt	ug/L	OW-414B	09/28/2020		14.2000	*	5.7900
Cobalt	ug/L	OW-414B	03/11/2021		18.8000	*	5.7900
Cobalt	ug/L	OW-414B	04/27/2022		26.6000	*	5.7900
Cobalt	ug/L	OW-414B	04/07/2023		24.7000	*	5.7900
Cobalt	ug/L	OW-414B	05/08/2024		19.1000	*	5.7900
Nickel	ug/L	OW-414B	12/07/2016		118.0000	*	55.9916
Nickel	ug/L	OW-414B	04/07/2017		69.0000	*	55.9916
Nickel	ug/L	OW-414B	06/14/2017		54.3000		55.9916
Nickel	ug/L	OW-414B	09/13/2017		63.9000	*	55.9916
Nickel	ug/L	OW-414B	11/29/2017		67.6000	*	55.9916
Nickel	ug/L	OW-414B	03/21/2018		54.6000		55.9916
Nickel	ug/L	OW-414B	09/12/2018		52.2000		55.9916
Nickel	ug/L	OW-414B	04/16/2019		68.2000	*	55.9916
Nickel	ug/L	OW-414B	09/30/2019		92.9000	*	55.9916
Nickel	ug/L	OW-414B	04/10/2020		83.7000	*	55.9916
Nickel	ug/L	OW-414B	09/28/2020		116.0000	*	55.9916
Nickel	ug/L	OW-414B	03/11/2021		93.3000	*	55.9916
Nickel	ug/L	OW-414B	04/27/2022		72.5000	*	55.9916
Nickel	ug/L	OW-414B	04/07/2023		74.5000	*	55.9916
Nickel	ug/L	OW-414B	05/08/2024		67.2000	*	55.9916

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** - Detect at limit for 100% NDs in background (NPPL only).
*** - Manual exclusion.
ND = Not Detected, Result = detection limit.

Worksheet 1 - Upgradient vs. Downgradient Comparisons
1,4-dichlorobenzene (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **0.427**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Antimony (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **0.69**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Arsenic (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **4.18**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Barium (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **484.0**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Benzene (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **0.229**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Beryllium (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **0.27**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Beta-bhc (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **0.018**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.966**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Cadmium (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **12.2**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Chromium (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **27.0**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Cis-1,2-dichloroethylene (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **0.296**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Cobalt (ug/L)
Lognormal Prediction Limit

Step	Equation	Description
1	$Y = \log_e(X)$	Transform to natural logarithmic scale.
2	$\overline{Y}_1 = \mathbf{sum[Y_1]} / \mathbf{N_1}$ $= \mathbf{-22.671} / \mathbf{98}$ $= \mathbf{-0.231}$	Compute mean of N_1 detected log transformed measurements.
3	$S_{Y_1} = ((\mathbf{sum[Y_1^2]} - \mathbf{sum[Y_1]}^2/\mathbf{N_1}) / (\mathbf{N_1}-1))^{½}$ $= ((\mathbf{215.027} - \mathbf{513.989}/\mathbf{98}) / (\mathbf{98}-1))^{½}$ $= \mathbf{1.471}$	Compute sd of N_1 detected log transformed measurements.
4	$\overline{Y} = (1 - \mathbf{N_0}/\mathbf{N})\ \overline{\mathbf{Y}}_1$ $= (1 - \mathbf{80}/\mathbf{178})\ (\mathbf{-0.231})$ $= \mathbf{-0.127}$	Use Aitchison's method to adjust mean for presence of nondetects (log scale).
5	$S_Y = [(1 - \mathbf{N_0}/\mathbf{N}) * \mathbf{S_{Y_1}}^2 +$ $(\mathbf{N_0}/\mathbf{N}) (1 - (\mathbf{N_0}-1)/(\mathbf{N}-1)) \overline{\mathbf{Y}}_1^{\,2}]^{½}$ $= [(1 - \mathbf{80}/\mathbf{178}) * \mathbf{1.471}^2 +$ $(\mathbf{80}/\mathbf{178}) (1 - (\mathbf{80}-1)/(\mathbf{178}-1)) (\mathbf{-0.231})^2]^{½}$ $= \mathbf{1.097}$	Use Aitchison's method to adjust sd for presence of nondetects (log scale).
6	$alpha = (1-.95^{1/\mathbf{K}})^{1/3}$ $= (1-.95^{1/\mathbf{588}})^{1/3}$ $= \mathbf{0.0443}$	Adjusted per comparison false positive rate. Pass initial or 1 of 2 resamples.
7	$PL = \exp[\overline{\mathbf{Y}} + \mathbf{tS_Y}(1+1/\mathbf{N})^{½}]$ $= \exp[\mathbf{-0.127}$ $+ (\mathbf{1.712}*\mathbf{1.097})(1+1/\mathbf{178})^{½}]$ $= \mathbf{5.79}$	One-sided lognormal prediction limit (t is Student's t on N-1 degrees of freedom and 1-alpha confidence level).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Copper (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	$PL = \max(X)$ $= \mathbf{11.5}$	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Lead (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **1.48**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Nickel (ug/L)
Lognormal Prediction Limit

Step	Equation	Description
1	$Y = \log_e(X)$	Transform to natural logarithmic scale.
2	$\bar{Y}_1 = \mathbf{sum[Y_1]} / \mathbf{N_1}$ = **242.957** / **105** = **2.314**	Compute mean of N_1 detected log transformed measurements.
3	$S_{Y_1} = ((\mathbf{sum[Y_1^2]} - \mathbf{sum[Y_1]}^2/\mathbf{N_1}) / (\mathbf{N_1}-1))^{½}$ = ((**771.39**-**59027.933**/**105**) / (**105**-1))^{½} = **1.418**	Compute sd of N_1 detected log transformed measurements.
4	$\bar{Y} = (1 - \mathbf{N_0}/\mathbf{N})\ \bar{Y}_1$ = (1 - **78**/**183**) **2.314** = **1.328**	Use Aitchison's method to adjust mean for presence of nondetects (log scale).
5	$S_Y = [(1 - \mathbf{N_0}/\mathbf{N}) * S_{Y_1}^2 + (\mathbf{N_0}/\mathbf{N}) (1 - (\mathbf{N_0}-1)/(\mathbf{N}-1)) \bar{Y}_1^2]^{½}$ = [(1 - **78**/**183**) * **1.418**^{2} + (**78**/**183**) (1 - (**78**-1)/(**183**-1)) **2.314**^{2}]^{½} = **1.572**	Use Aitchison's method to adjust sd for presence of nondetects (log scale).
6	alpha = (1-.95$^{1/\mathbf{K}}$)$^{1/3}$ = (1-.95$^{1/\mathbf{588}}$)$^{1/3}$ = **0.0443**	Adjusted per comparison false positive rate. Pass initial or 1 of 2 resamples.
7	$PL = \exp[\bar{Y} + \mathbf{t}S_Y(1+1/\mathbf{N})^{½}]$ = exp[**1.328** + (**1.711***1.572)(1+1/**183**)^{½}] = **55.992**	One-sided lognormal prediction limit (t is Student's t on N-1 degrees of freedom and 1-alpha confidence level).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Selenium (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **2.23**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Silver (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **0.37**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Thallium (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **0.26**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Vanadium (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **2.59**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

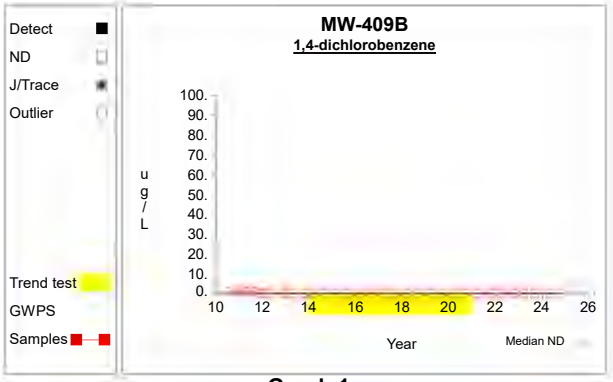
Worksheet 1 - Upgradient vs. Downgradient Comparisons
Vinyl chloride (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **0.18**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

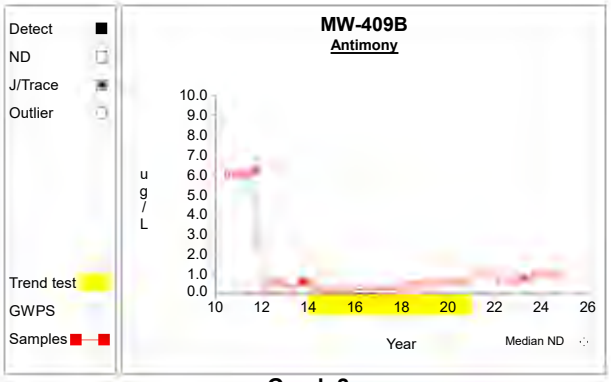
Worksheet 1 - Upgradient vs. Downgradient Comparisons
Zinc (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **28.4**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

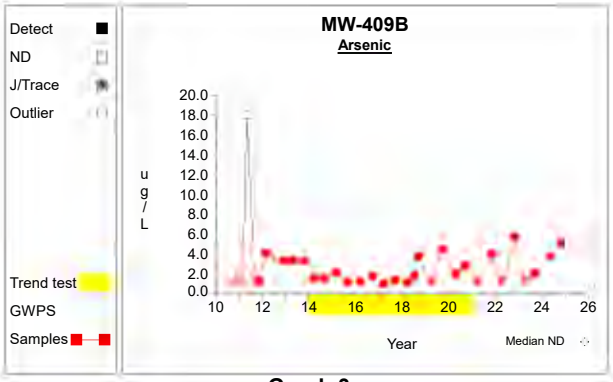
Time Series



Graph 1



Graph 2



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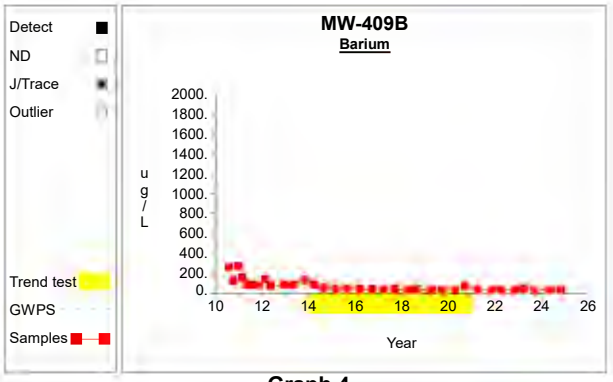

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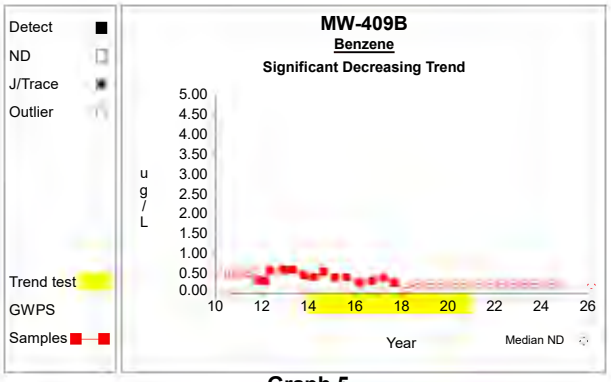
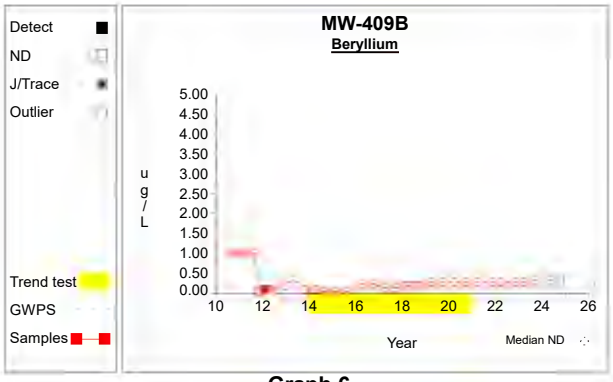


Graph 5



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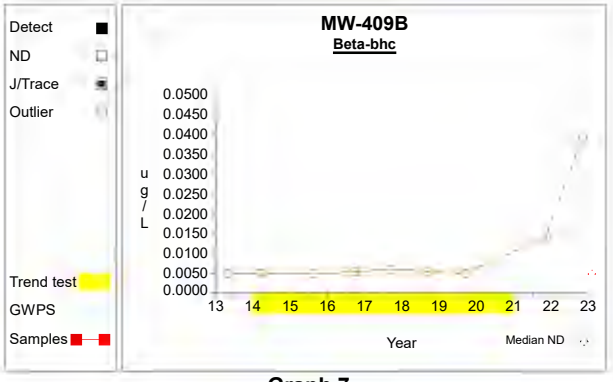

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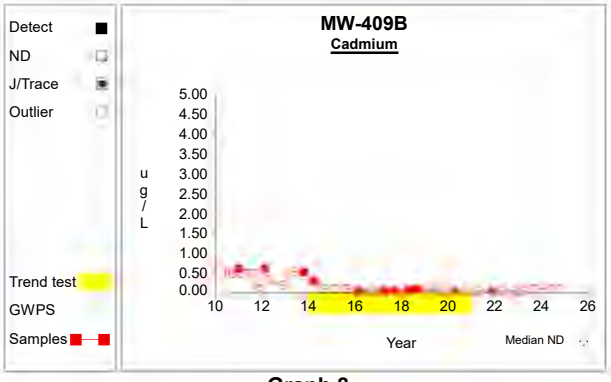

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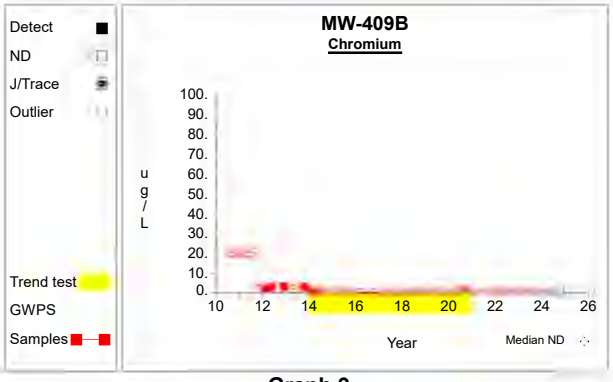
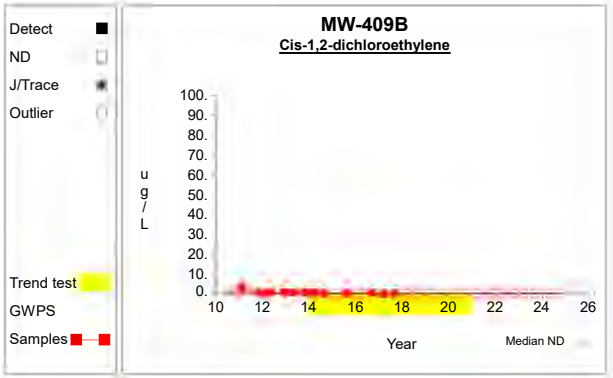
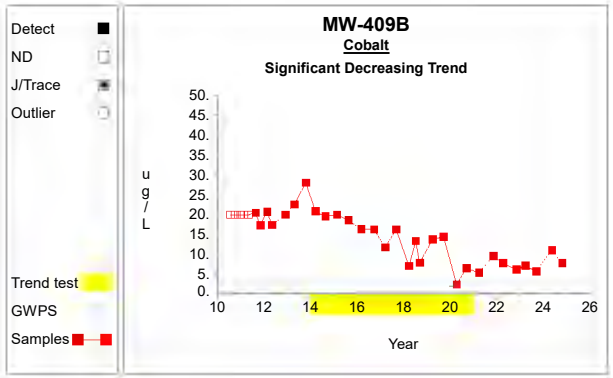


Graph 9

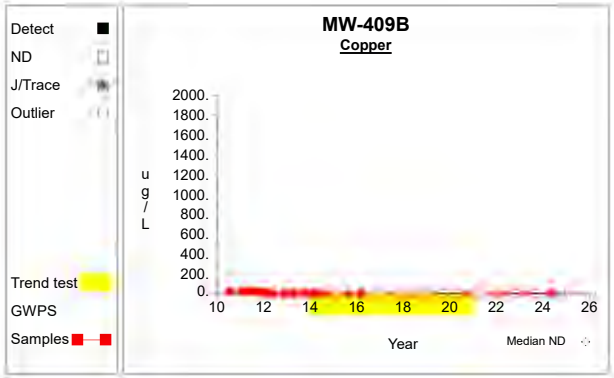
Time Series



Graph 10



Graph 11



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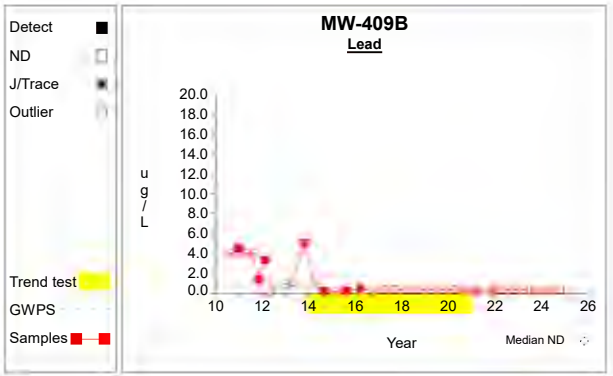
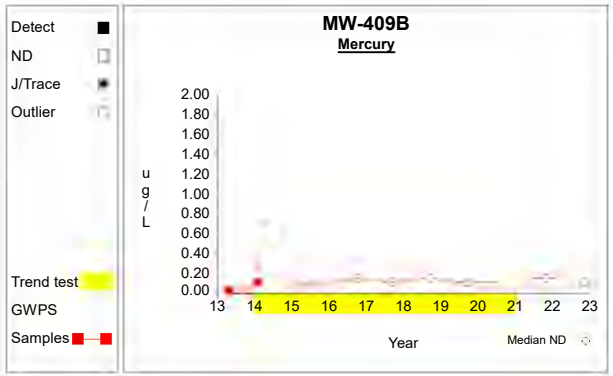


Graph 13



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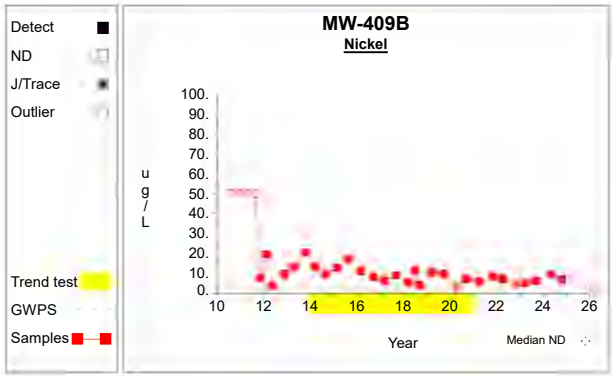
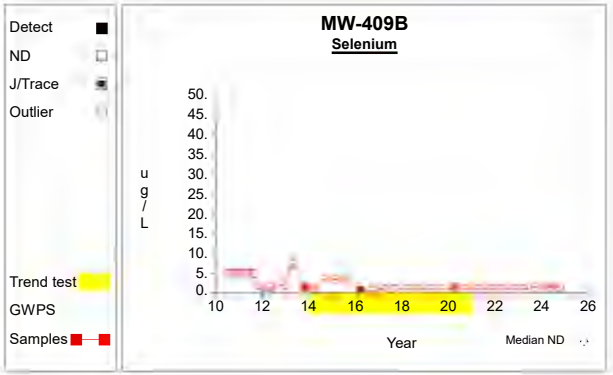
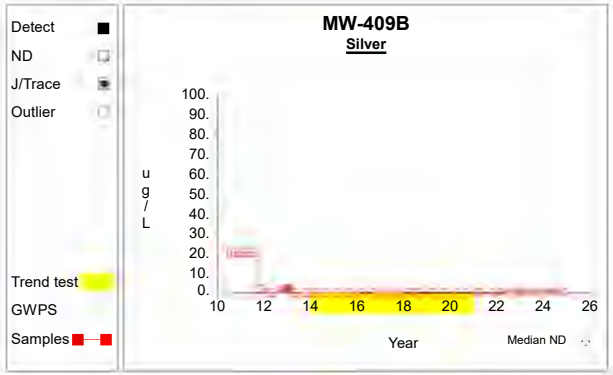


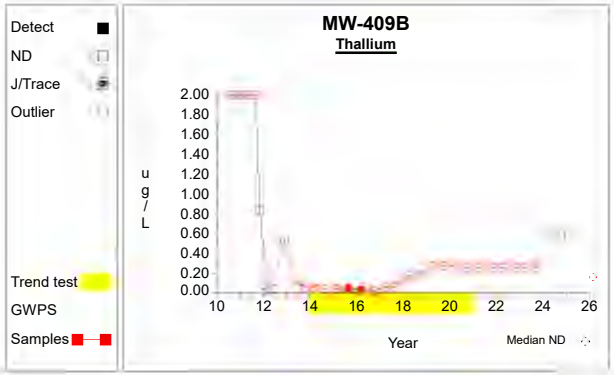
Graph 15



Graph 16

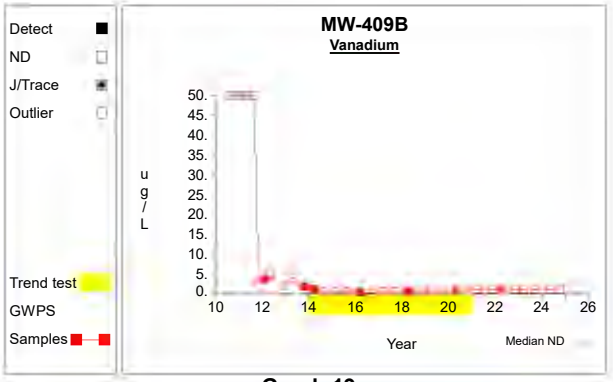


Graph 17

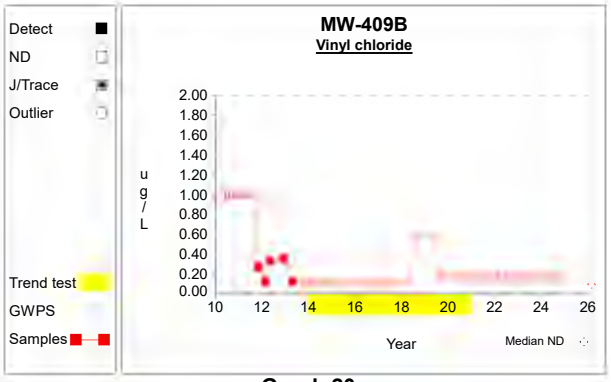


Graph 18

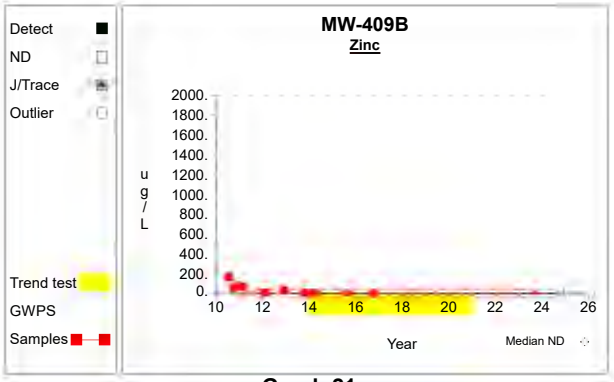
Time Series



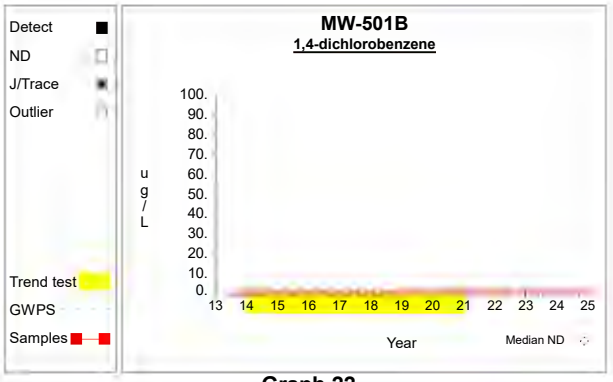
Graph 19



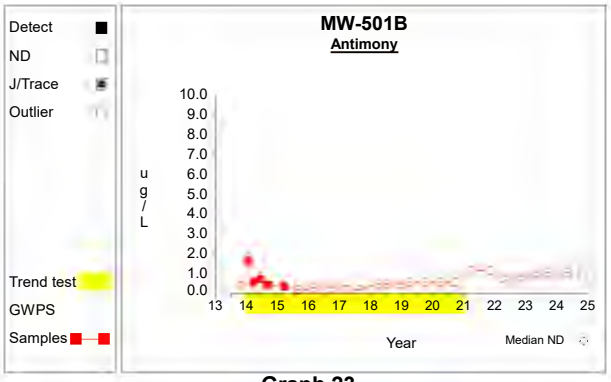
Graph 20



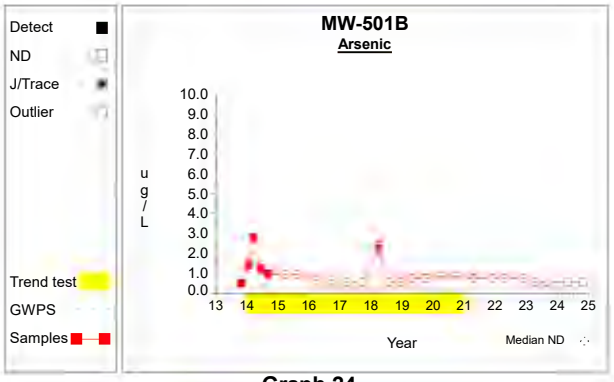
Graph 21



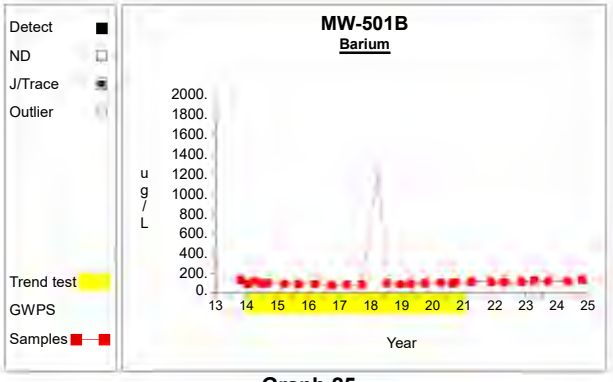
Graph 22



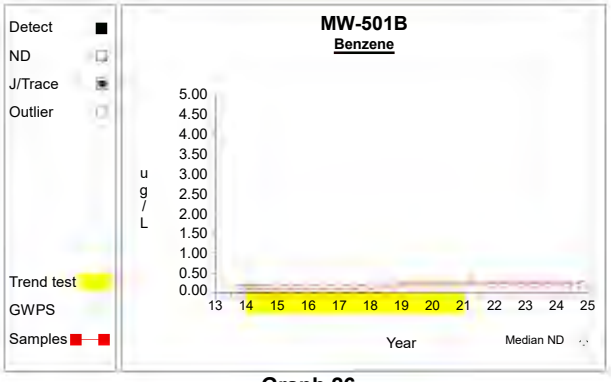
Graph 23



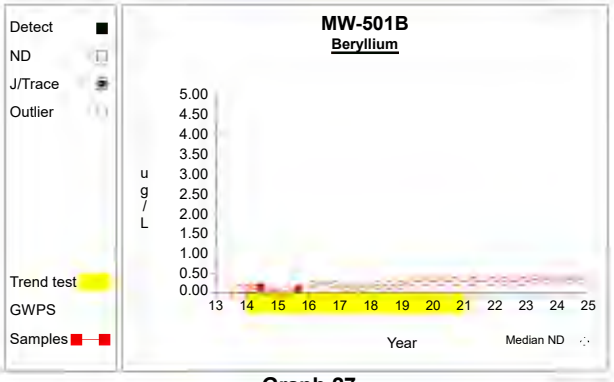
Graph 24



Graph 25

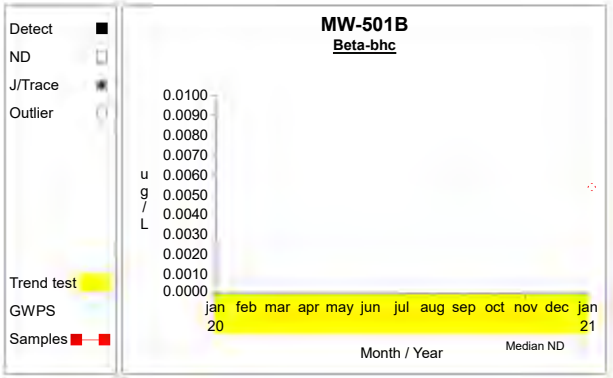


Graph 26

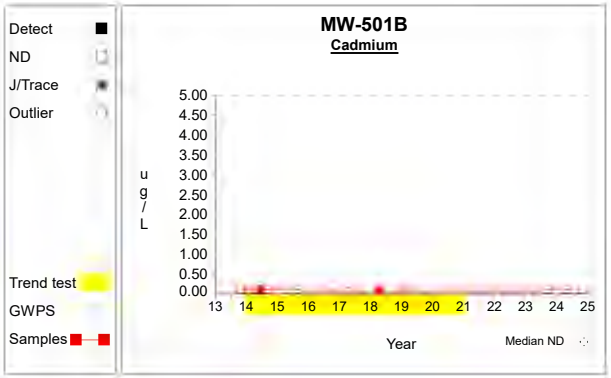


Graph 27

Time Series



Graph 28



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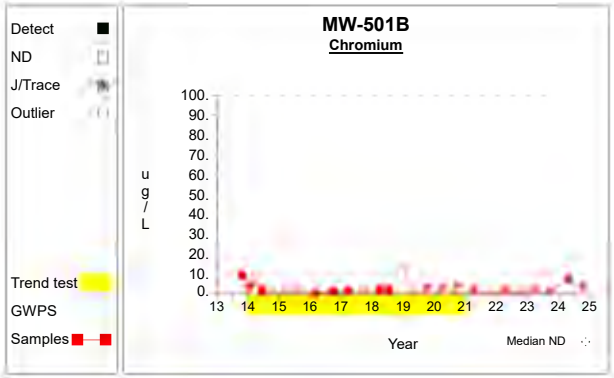
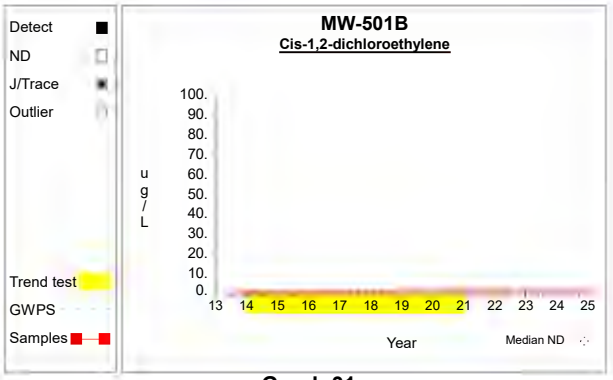
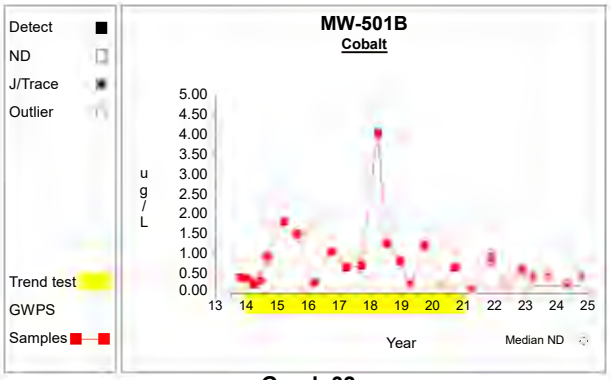


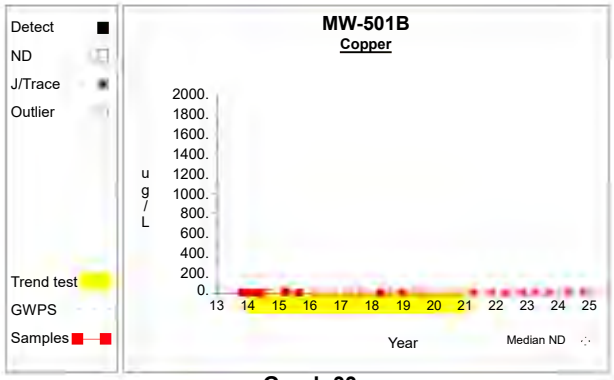
Graph 30



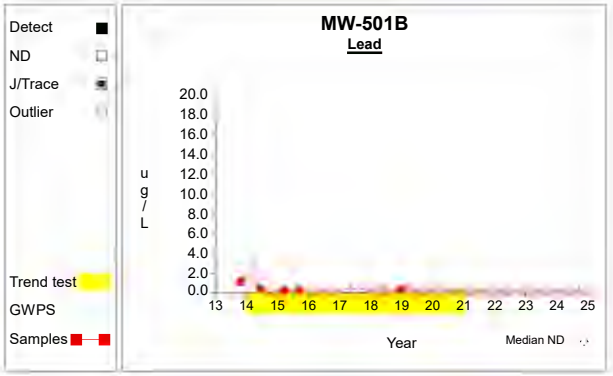
Graph 31



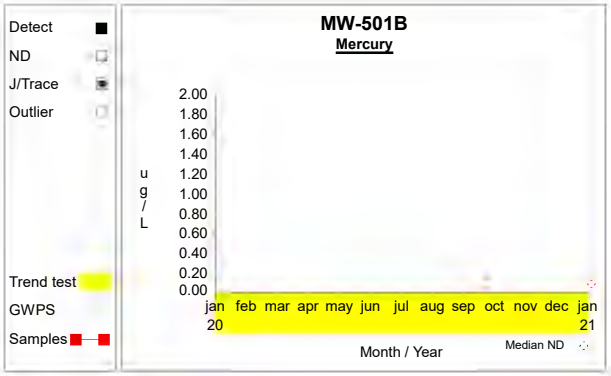
Graph 32



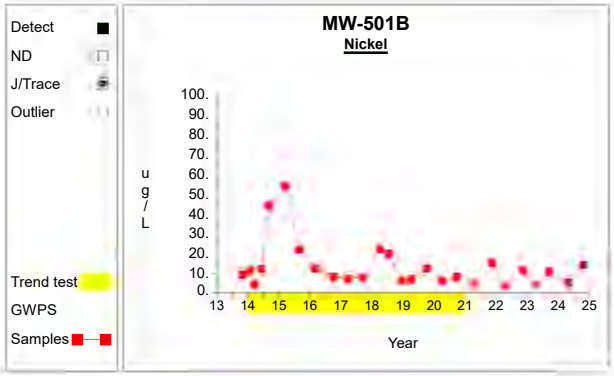
Graph 33



Graph 34

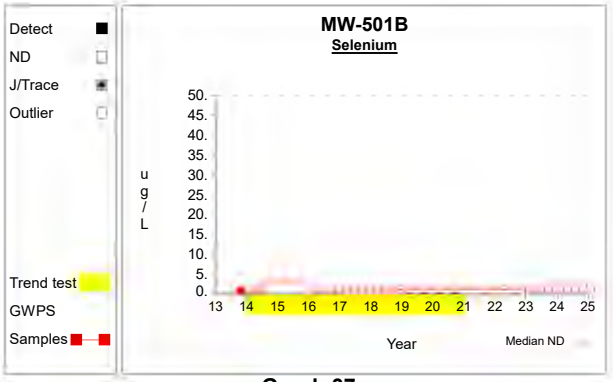


Graph 35

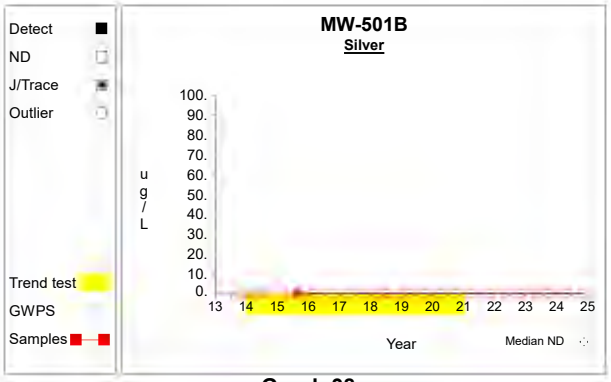


Graph 36

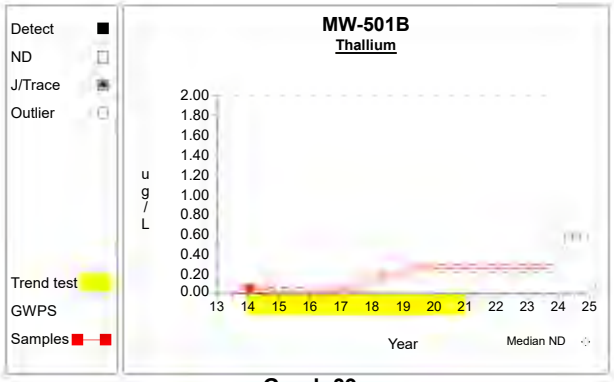
Time Series



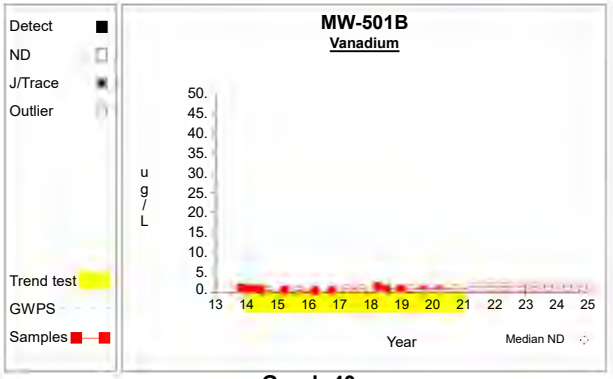
Graph 37



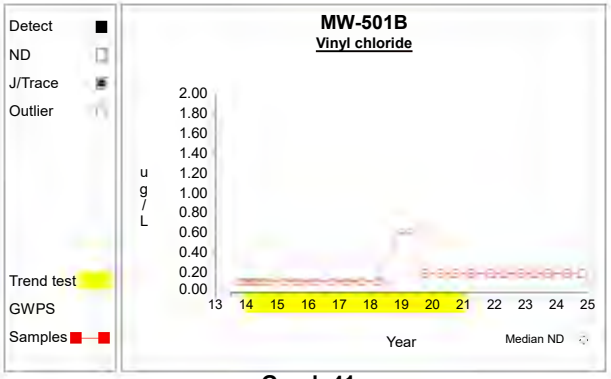
Graph 38



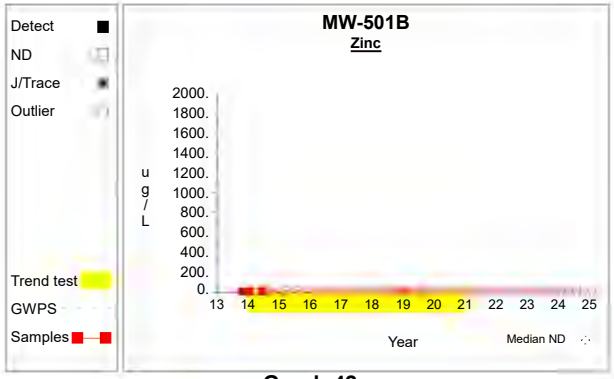
Graph 39



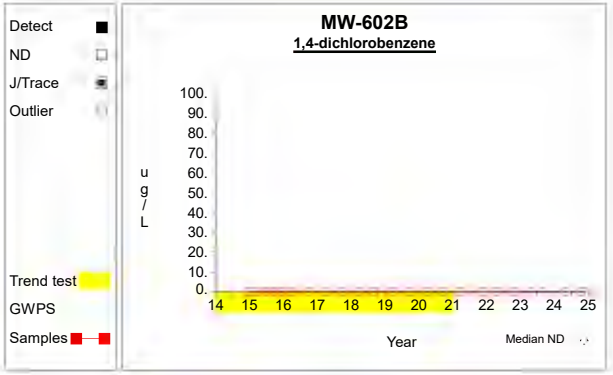
Graph 40



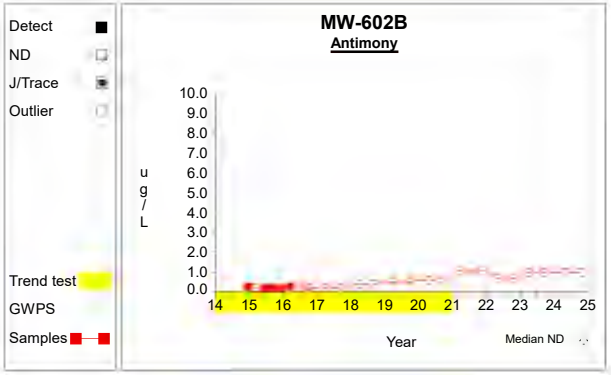
Graph 41



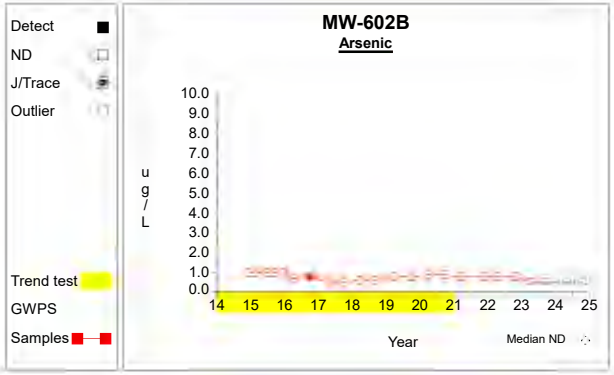
Graph 42



Graph 43

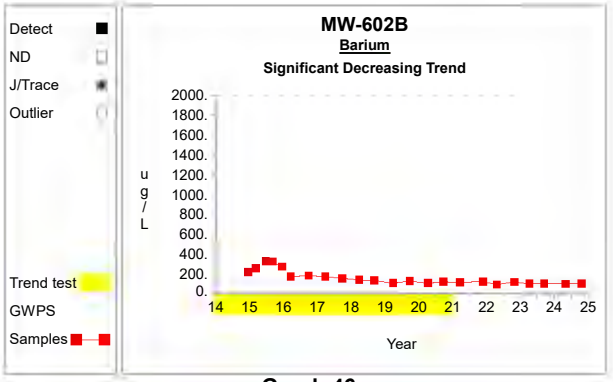


Graph 44

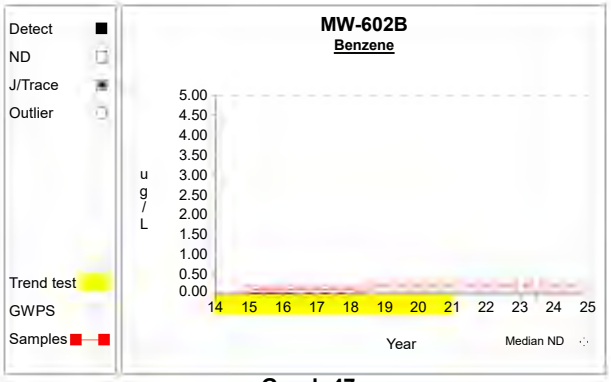


Graph 45

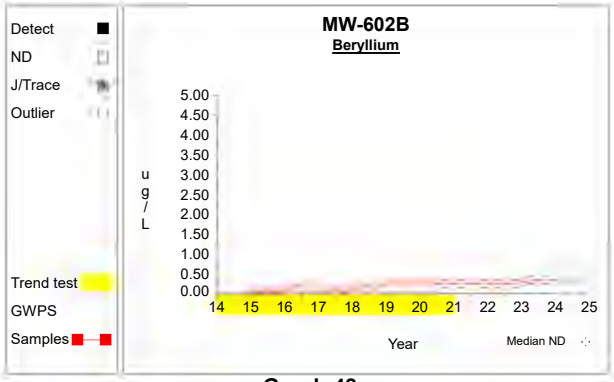
Time Series



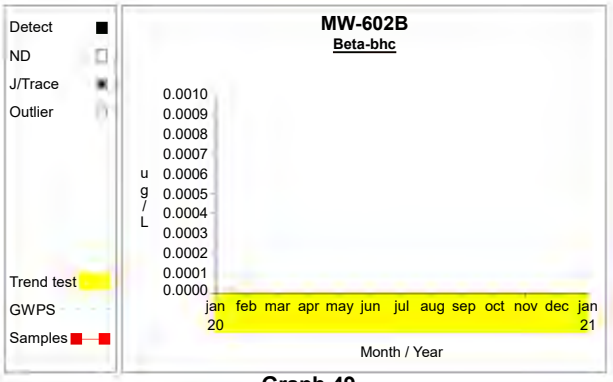
Graph 46



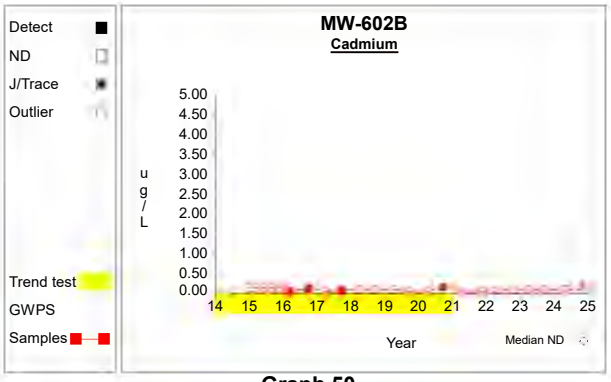
Graph 47



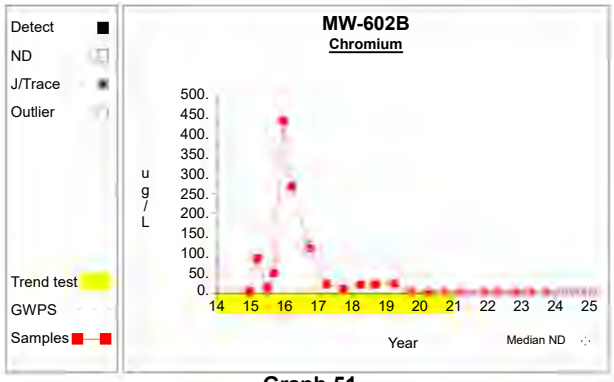
Graph 48



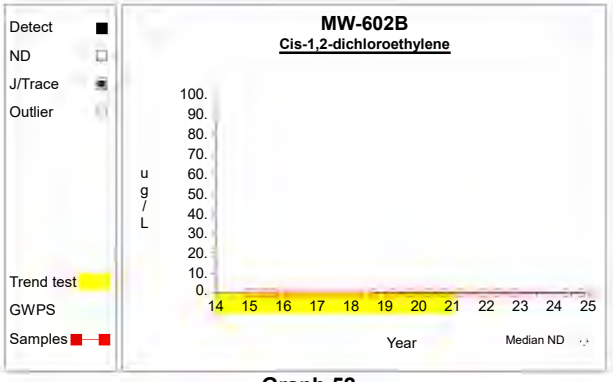
Graph 49



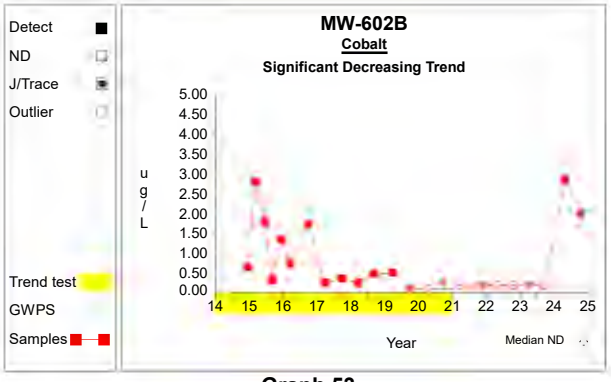
Graph 50



Graph 51



Graph 52



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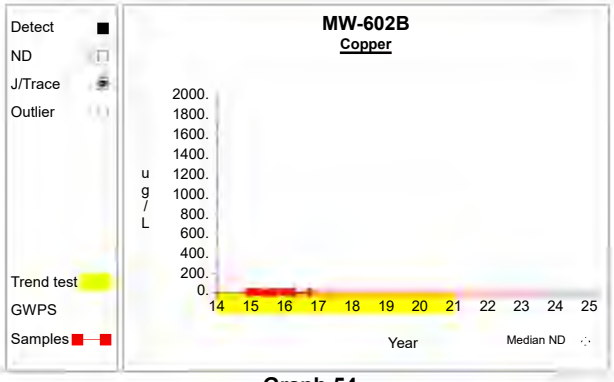
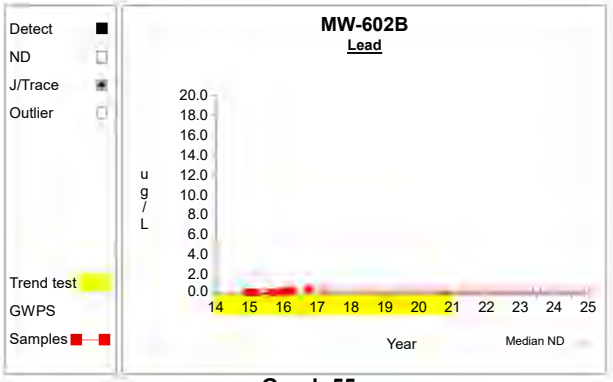
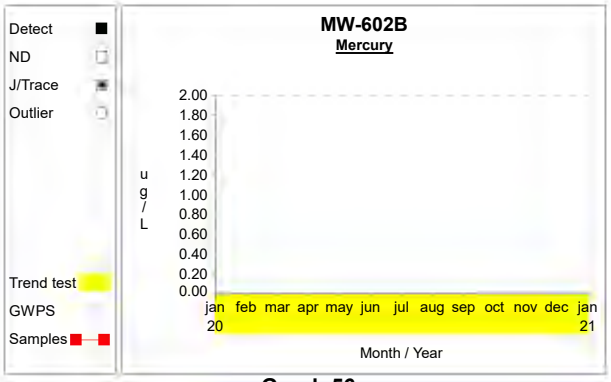


Graph 54

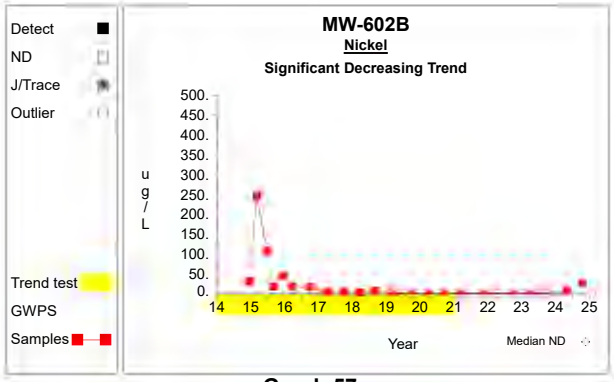
Time Series



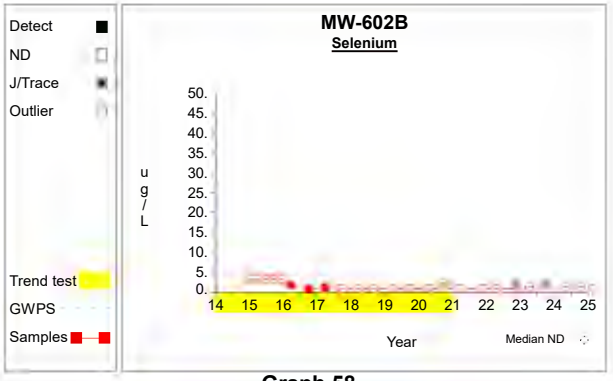
Graph 55



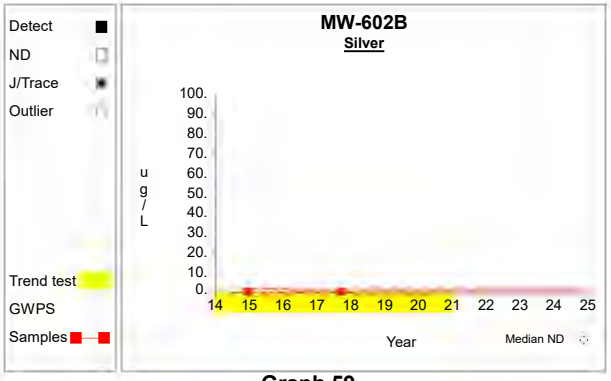
Graph 56



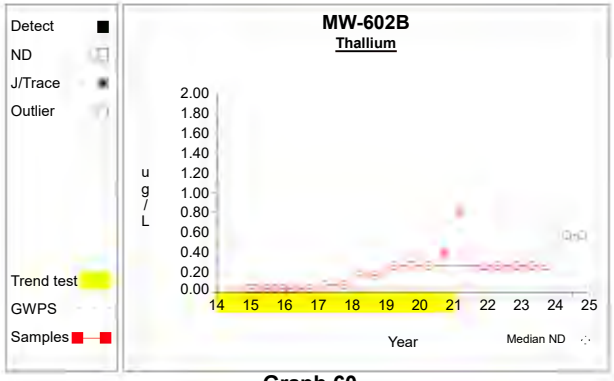
Graph 57



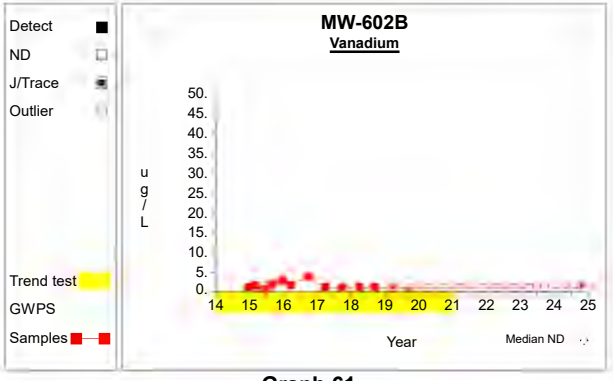
Graph 58



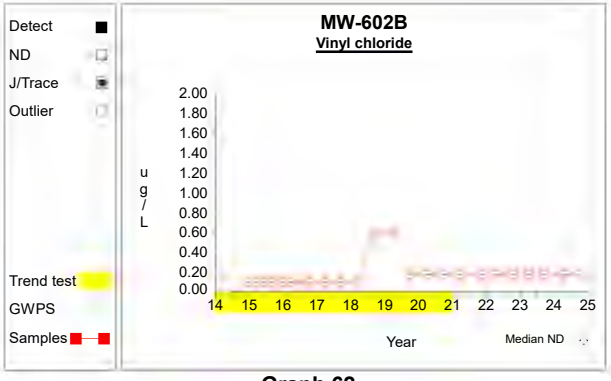
Graph 59



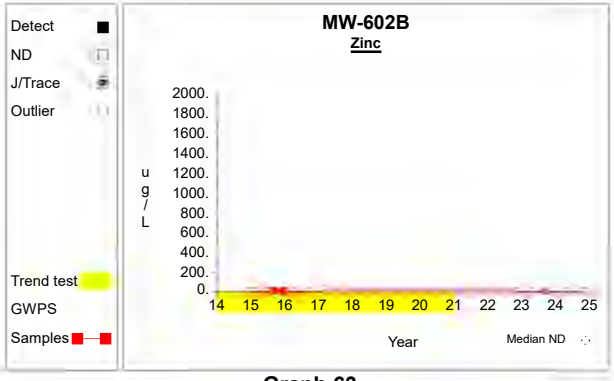
Graph 60



Graph 61

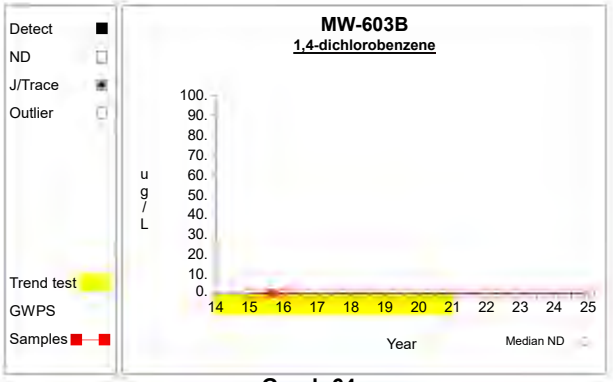


Graph 62

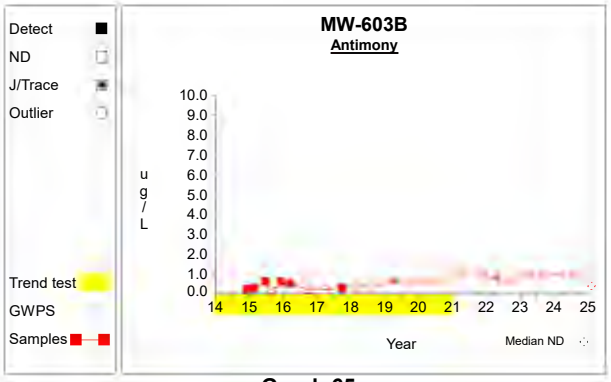


Graph 63

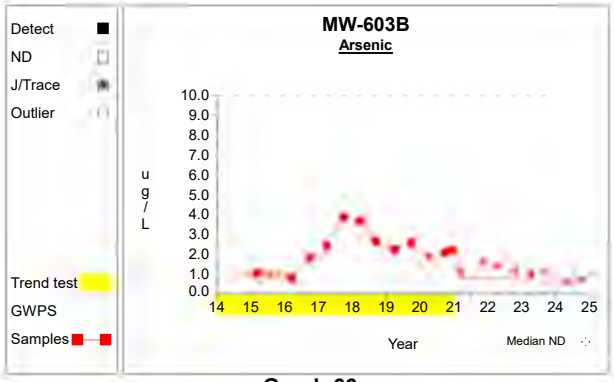
Time Series



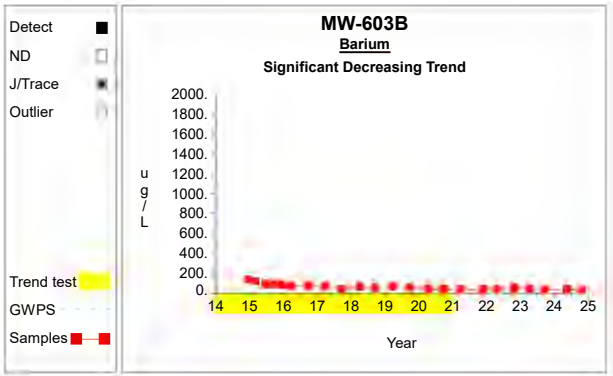
Graph 64



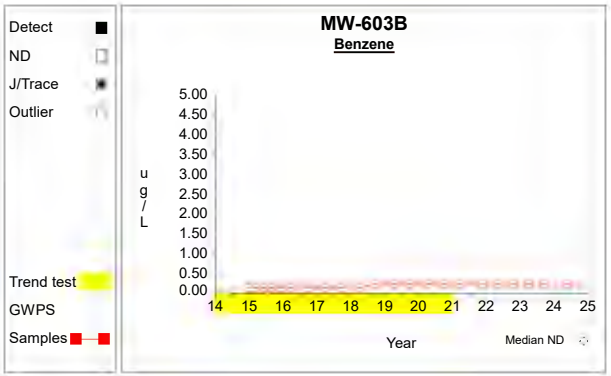
Graph 65



Graph 66



Graph 67



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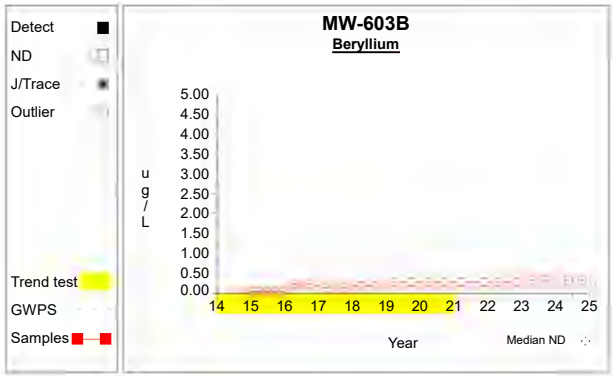
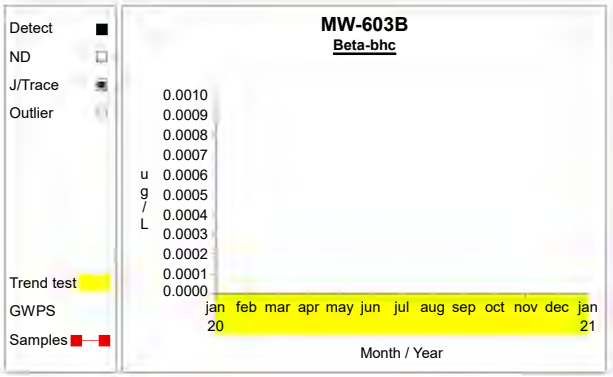


Graph 69



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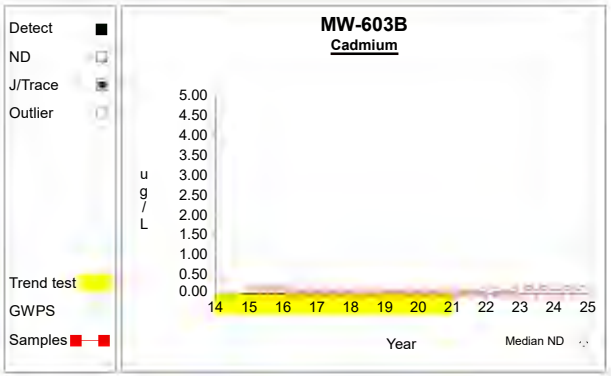

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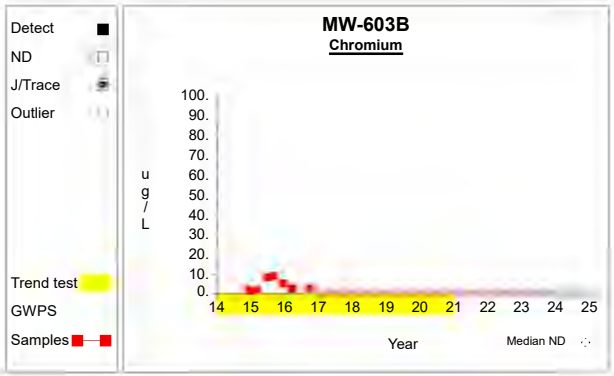
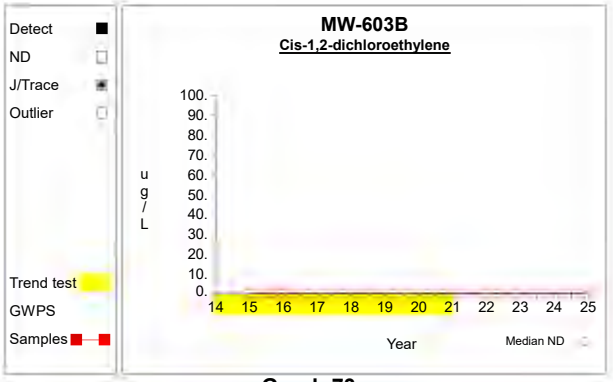
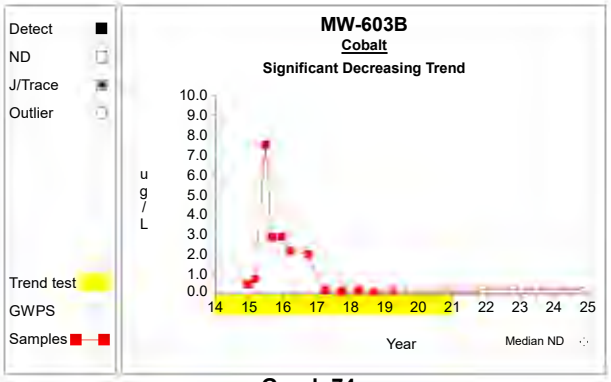


Graph 72

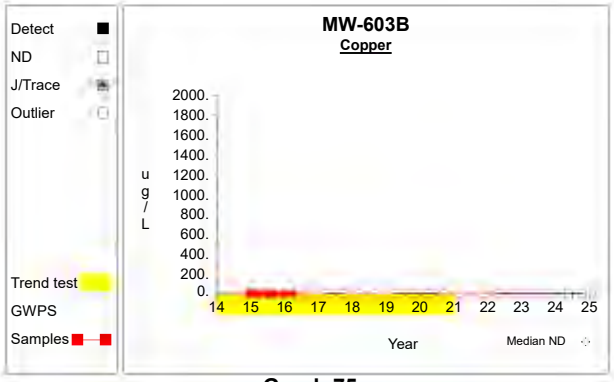
Time Series



Graph 73



Graph 74



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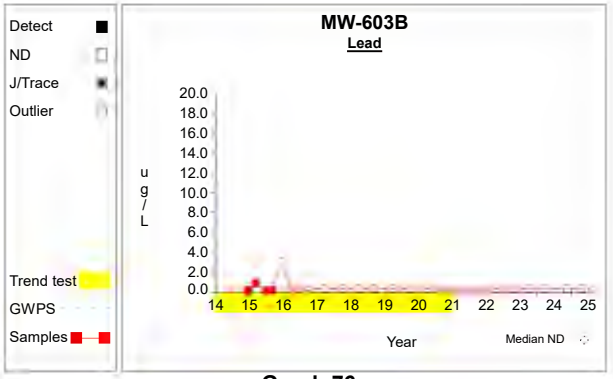
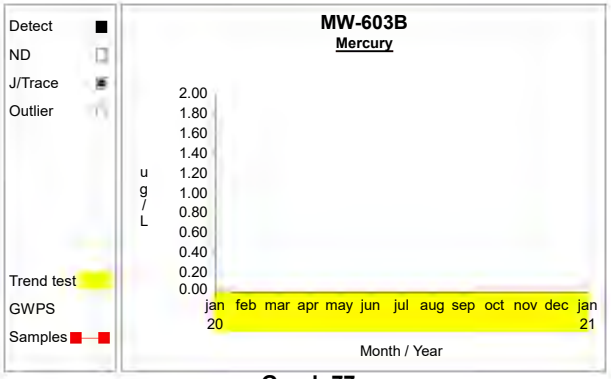
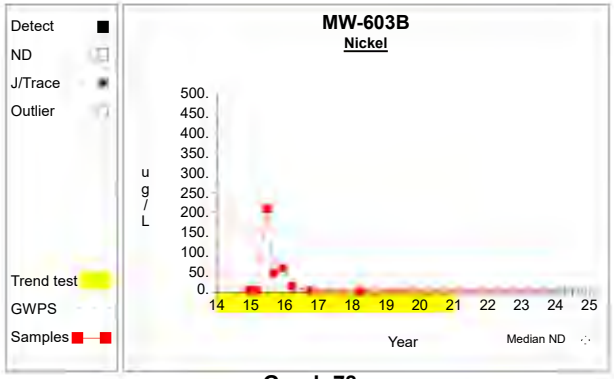


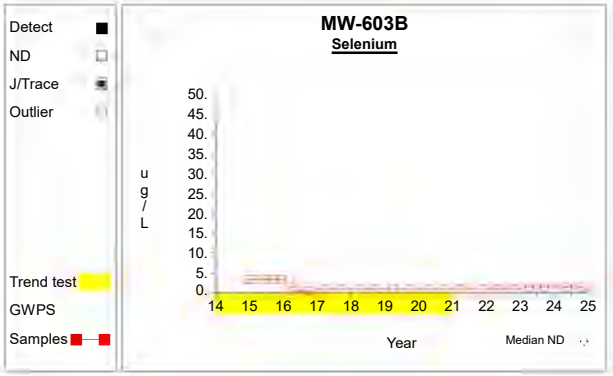
Graph 76



Graph 77



Graph 78



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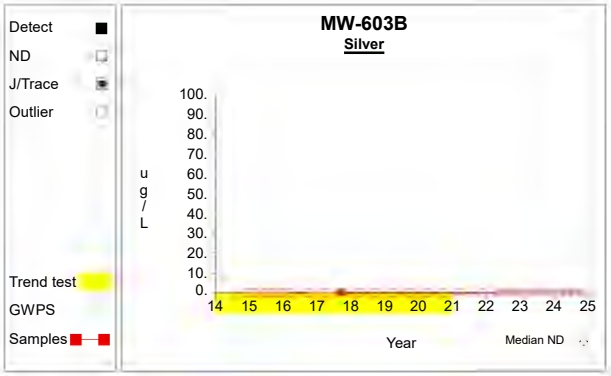

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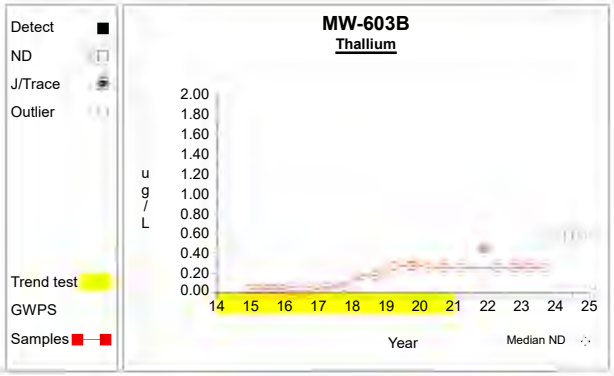
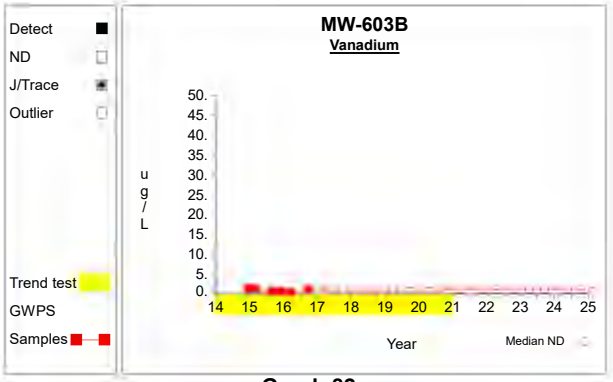


Graph 81

Time Series



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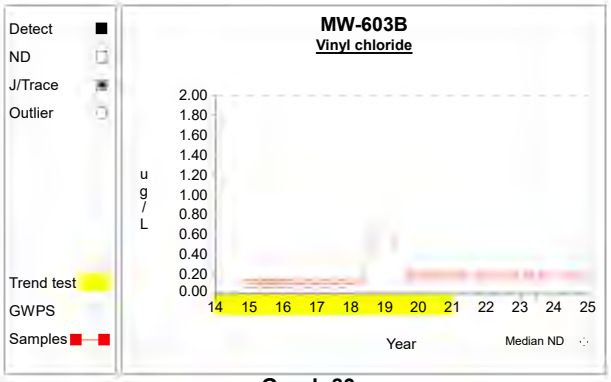

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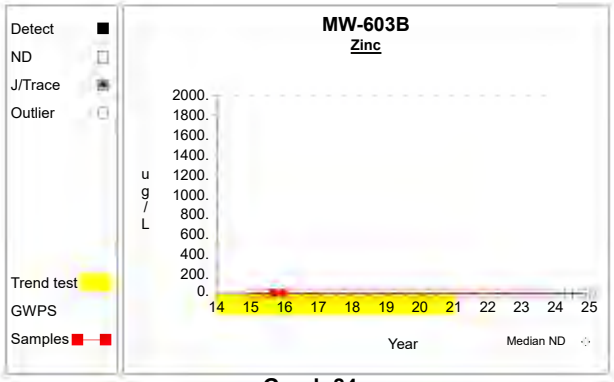
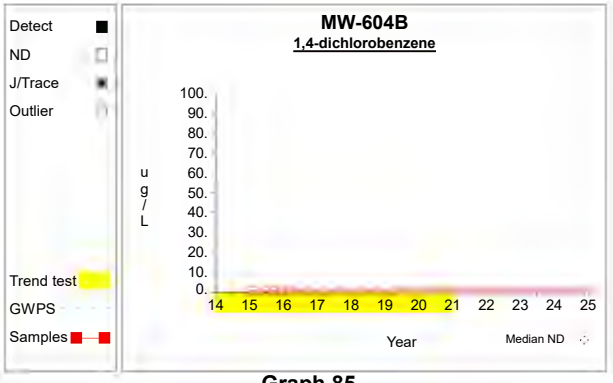
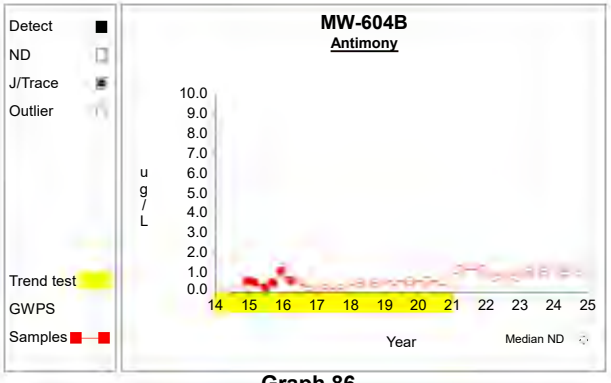


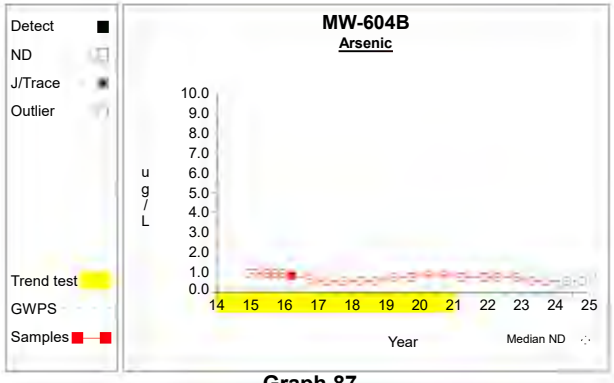
Graph 84



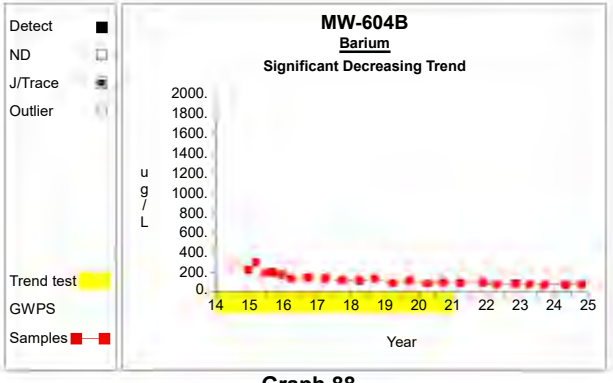
Graph 85



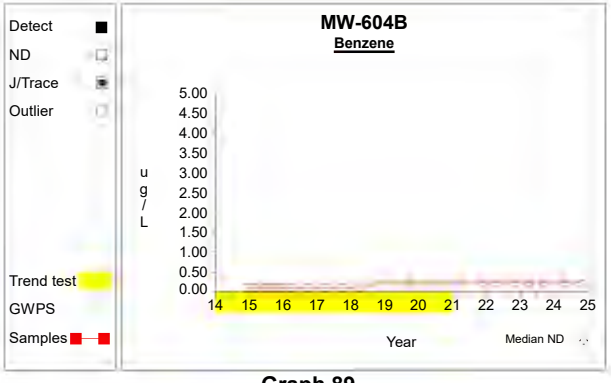
Graph 86



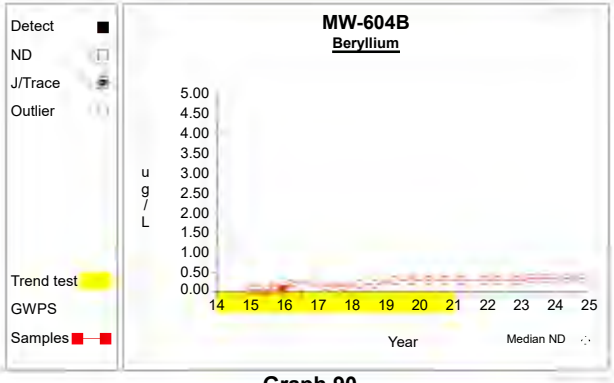
Graph 87



Graph 88

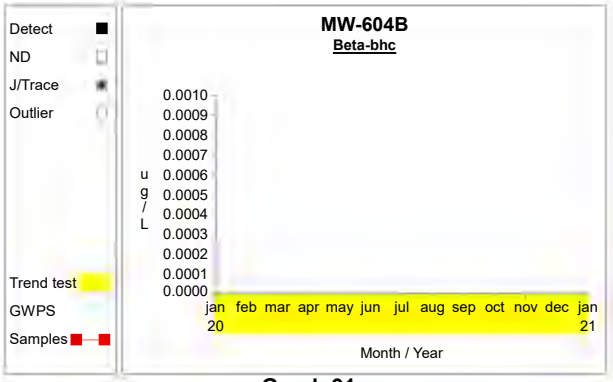


Graph 89

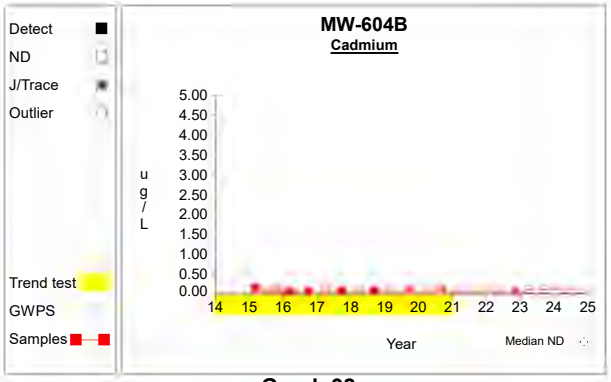


Graph 90

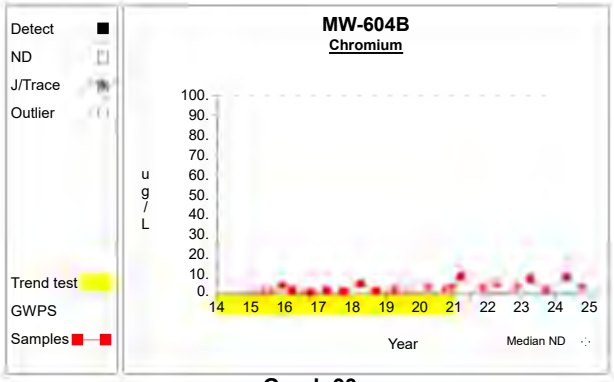
Time Series



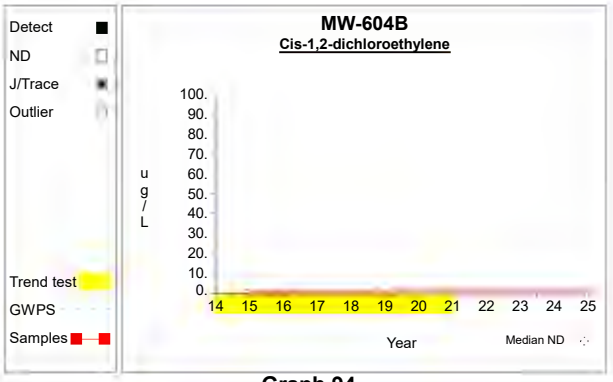
Graph 91



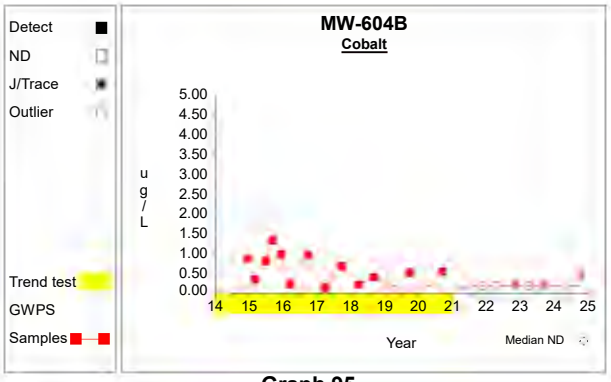
Graph 92



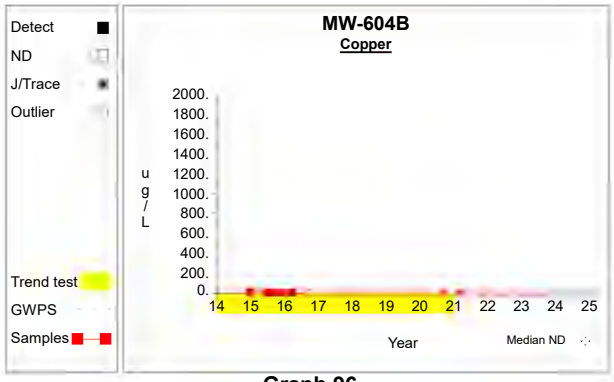
Graph 93



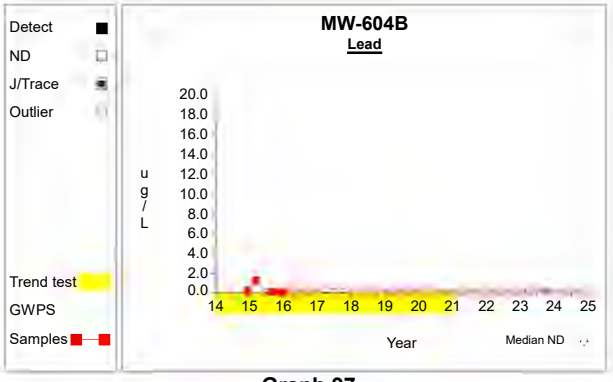
Graph 94



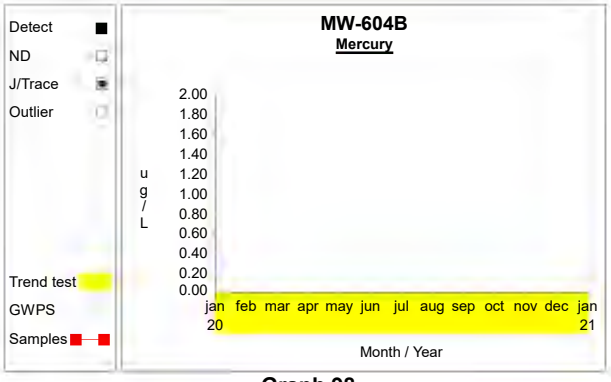
Graph 95



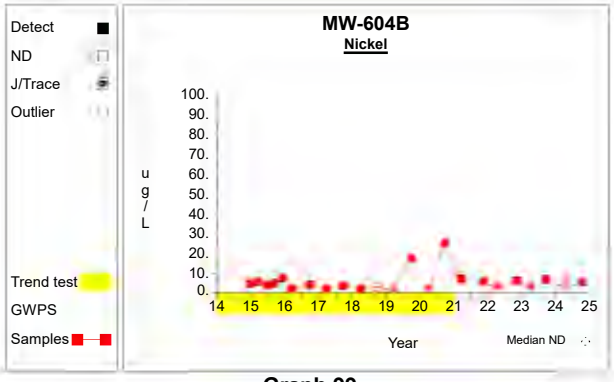
Graph 96



Graph 97

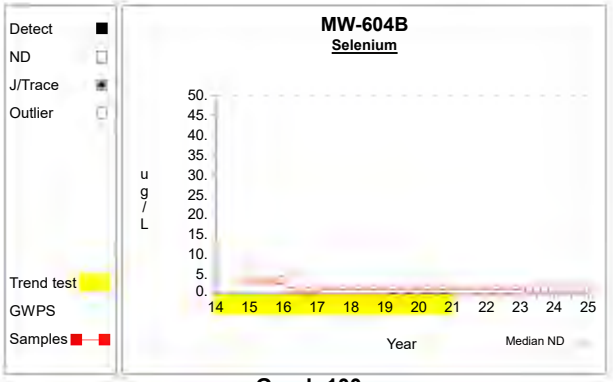


Graph 98

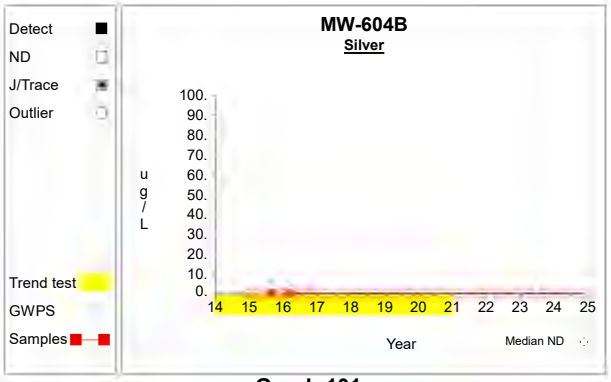


Graph 99

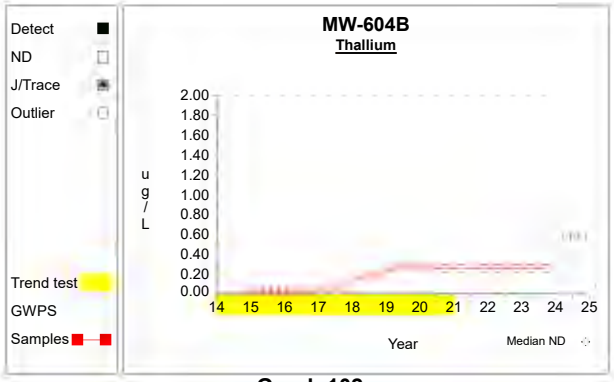
Time Series



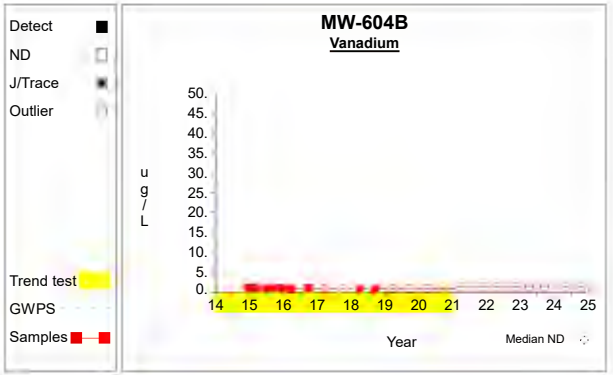
Graph 100



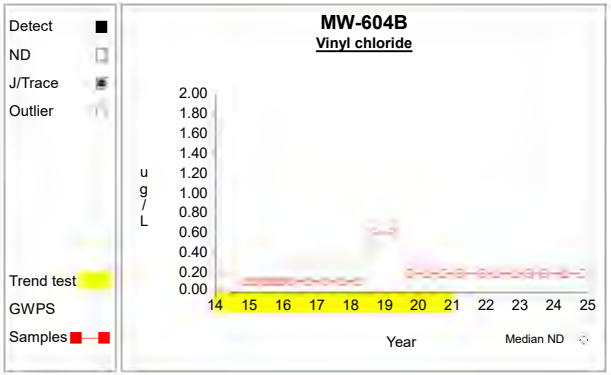
Graph 101



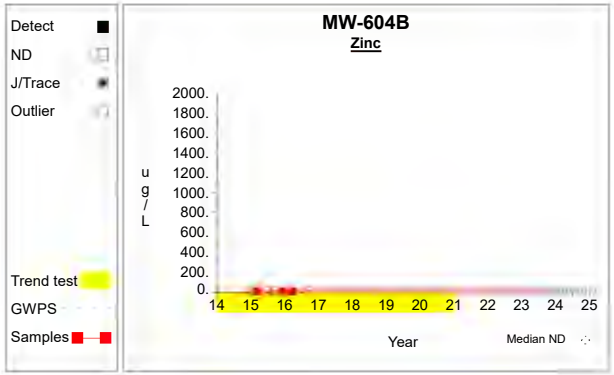
Graph 102



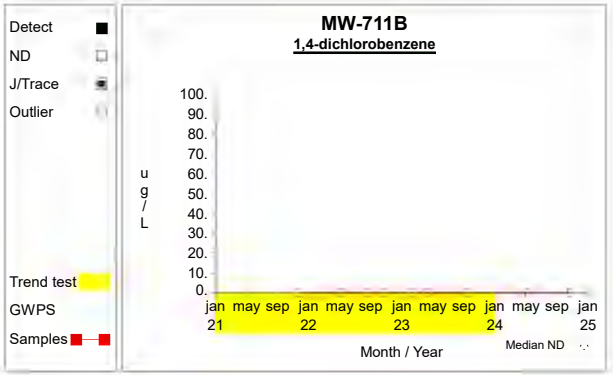
Graph 103



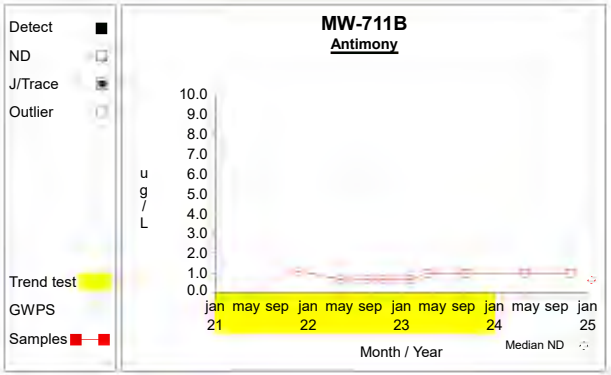
Graph 104



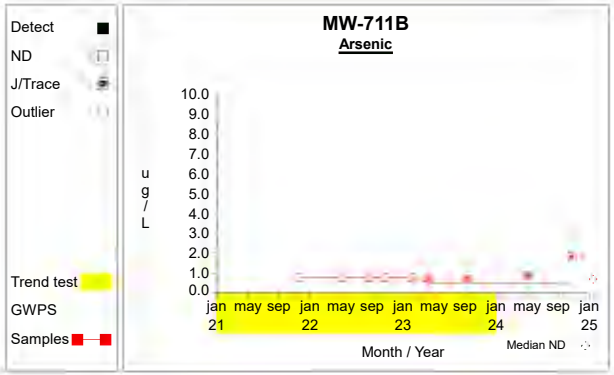
Graph 105



Graph 106

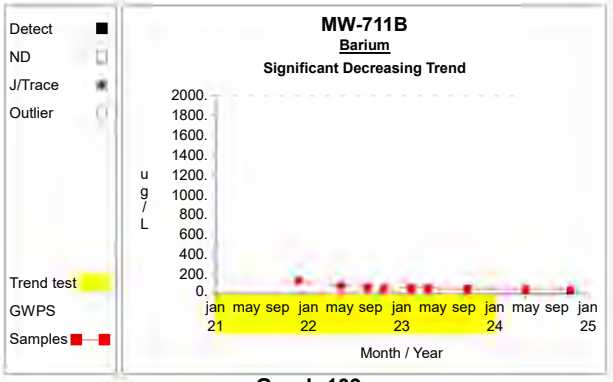


Graph 107

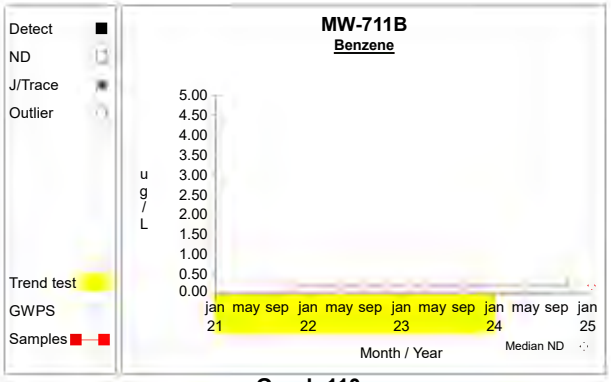


Graph 108

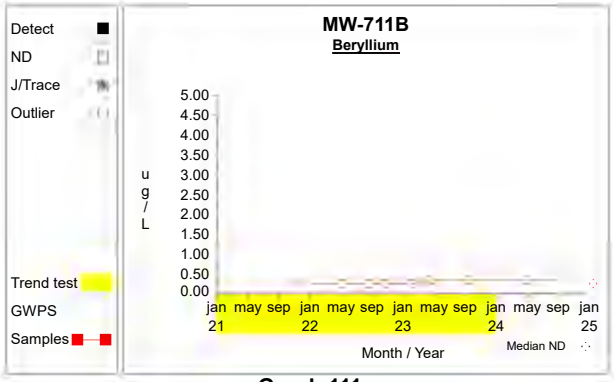
Time Series



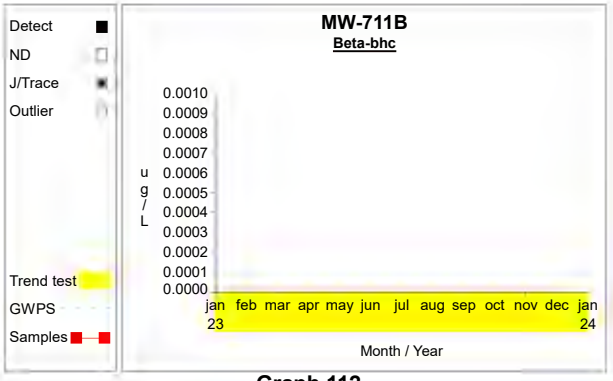
Graph 109



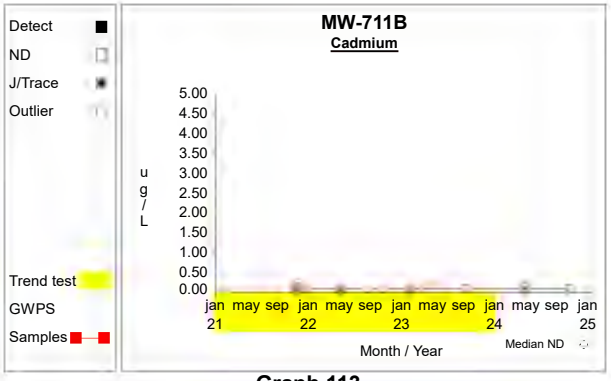
Graph 110



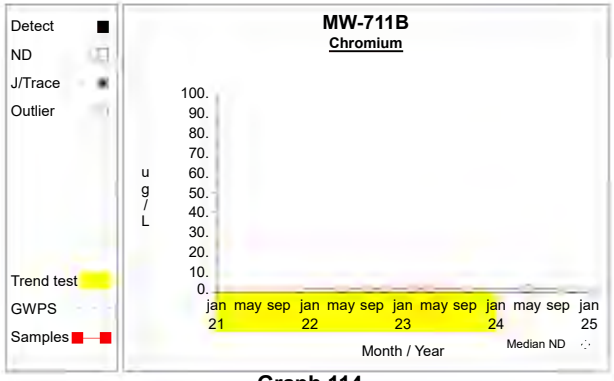
Graph 111



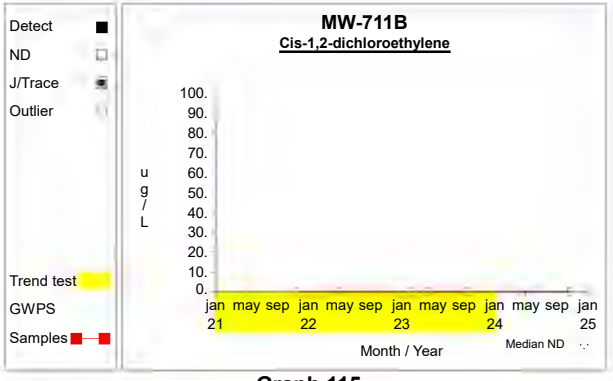
Graph 112



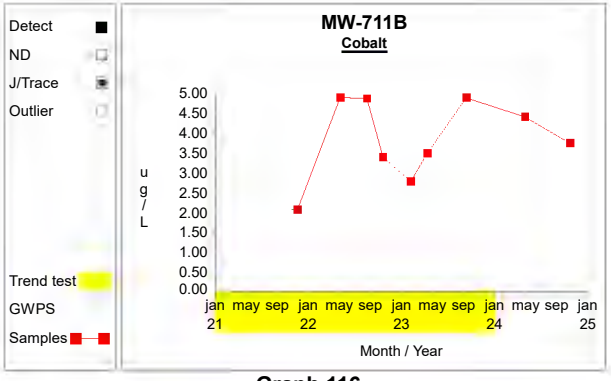
Graph 113



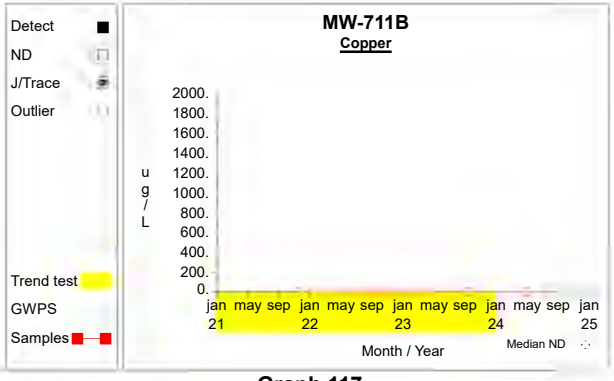
Graph 114



Graph 115

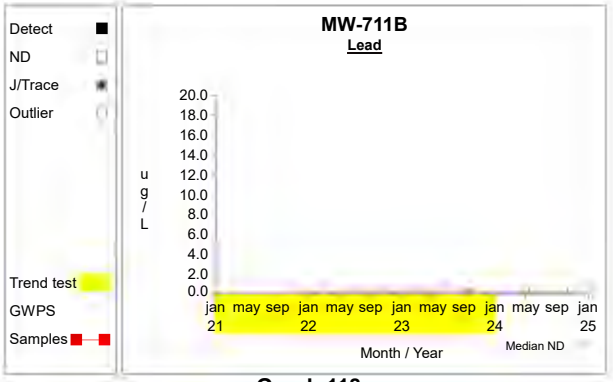


Graph 116

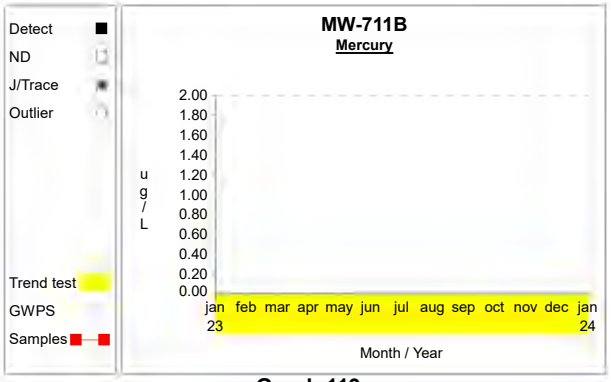


Graph 117

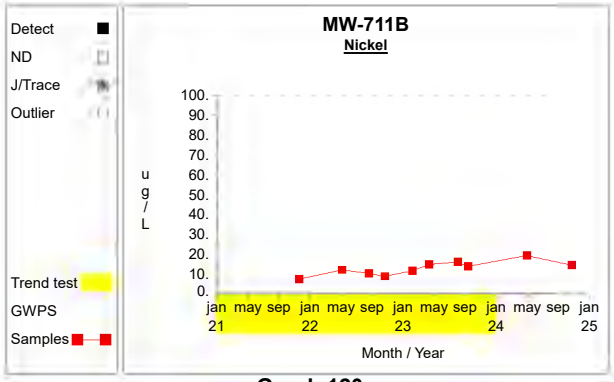
Time Series



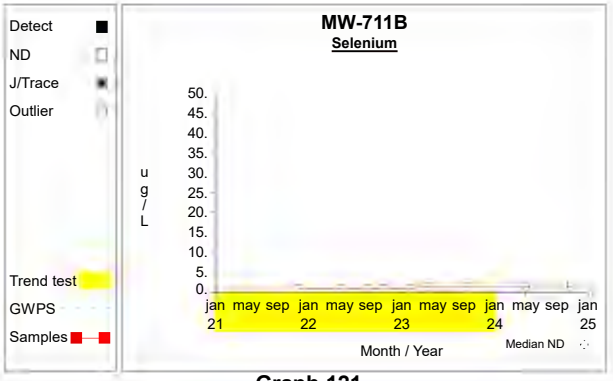
Graph 118



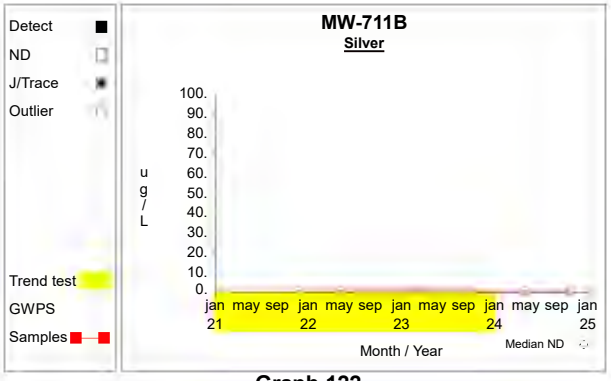
Graph 119



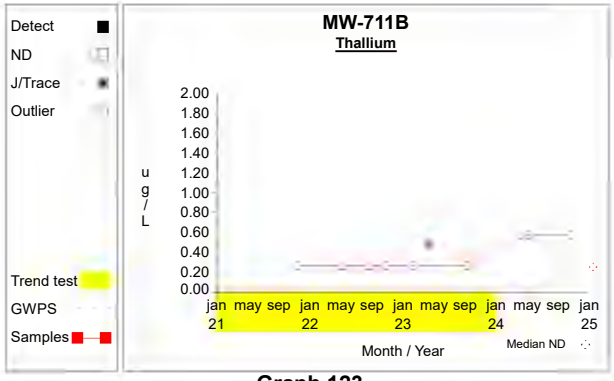
Graph 120



Graph 121



Graph 122



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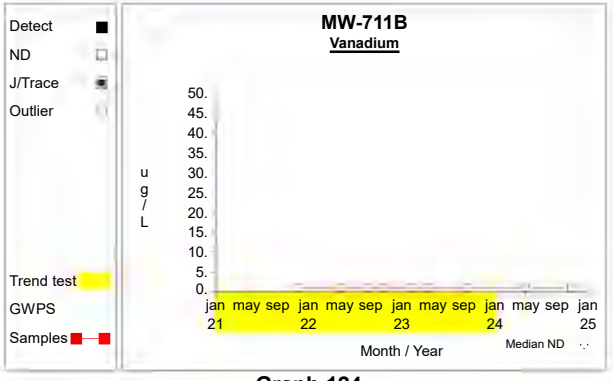
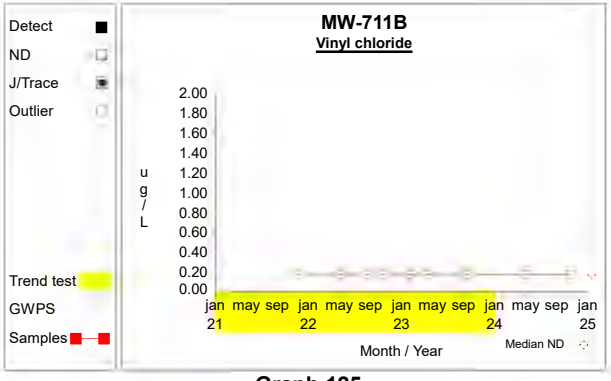
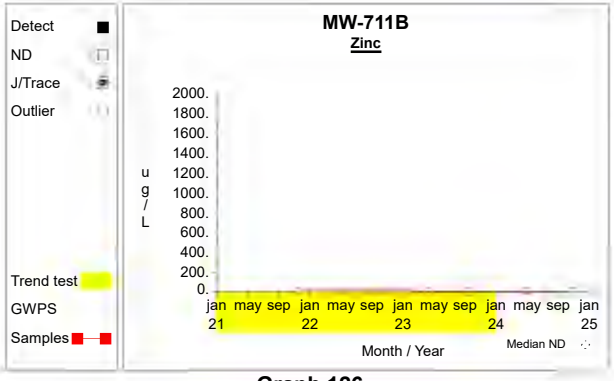


Graph 124

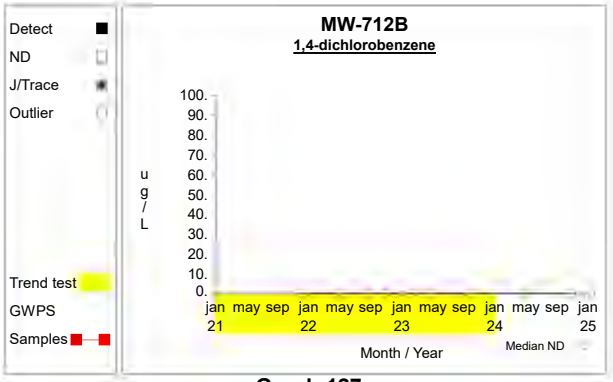


Graph 125

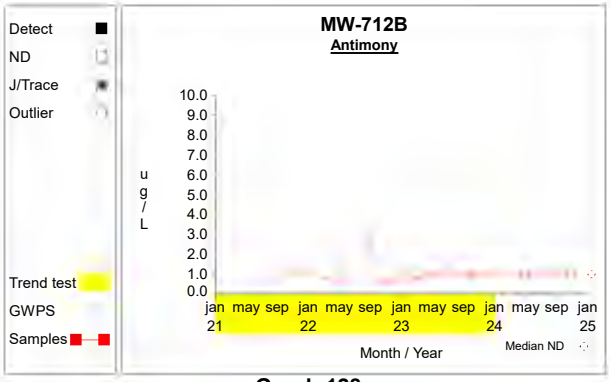


Graph 126

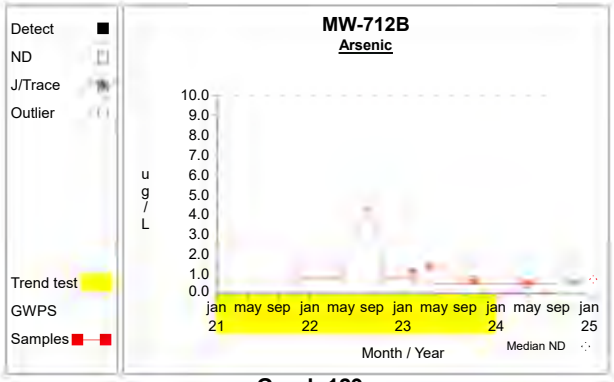
Time Series



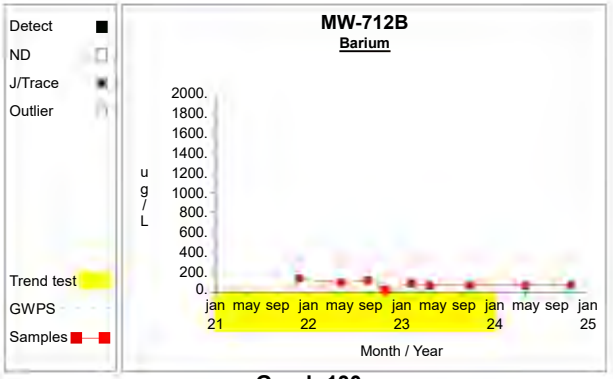
Graph 127



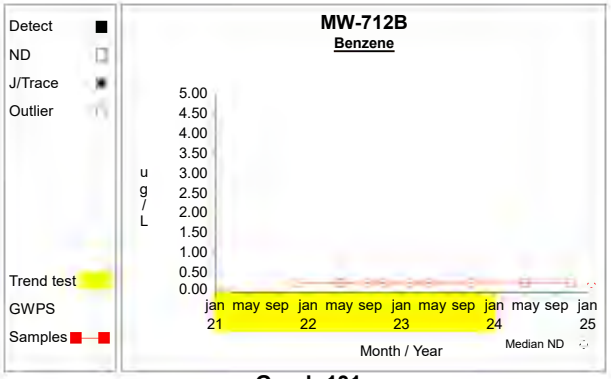
Graph 128



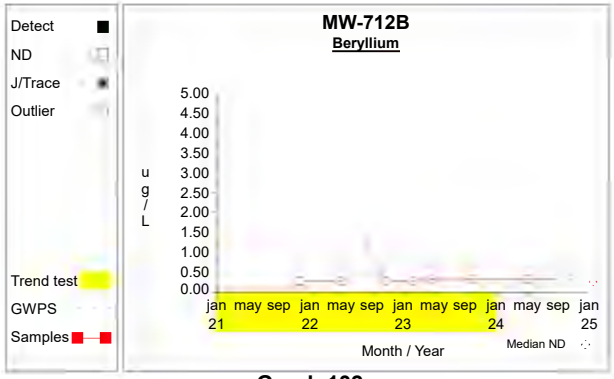
Graph 129



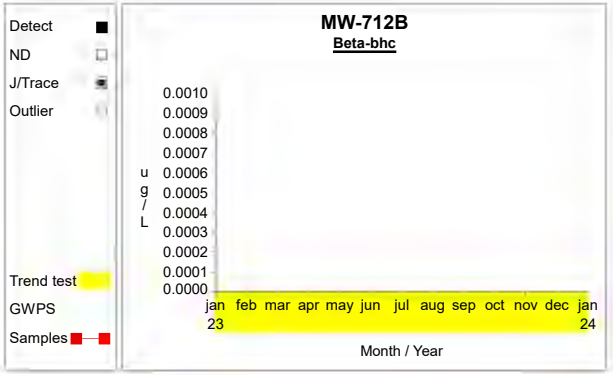
Graph 130



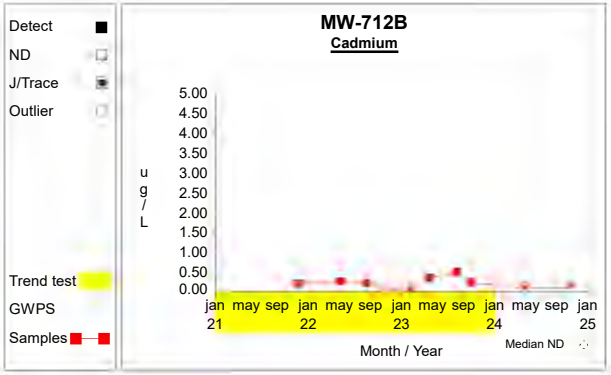
Graph 131



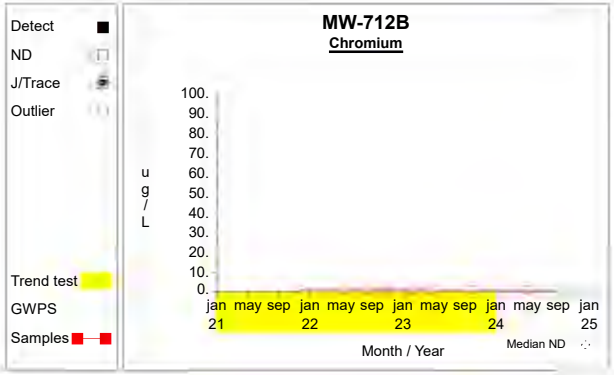
Graph 132



Graph 133

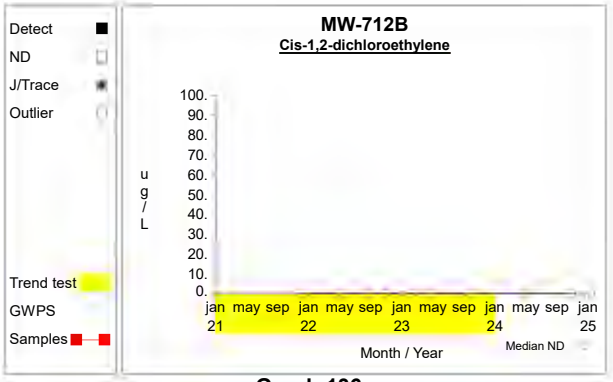


Graph 134

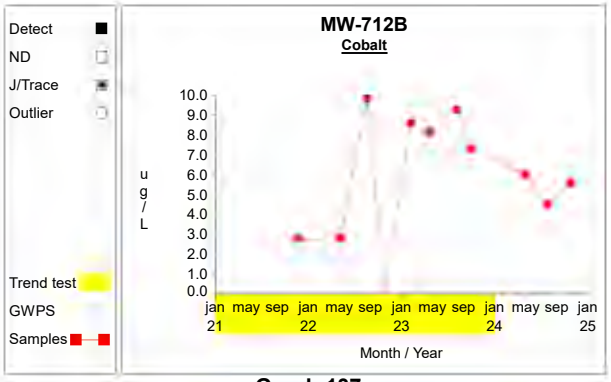


Graph 135

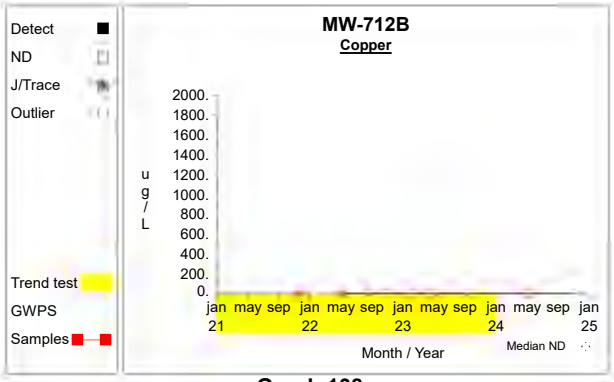
Time Series



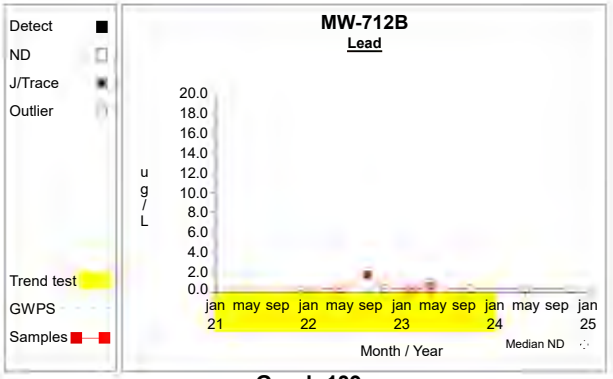
Graph 136



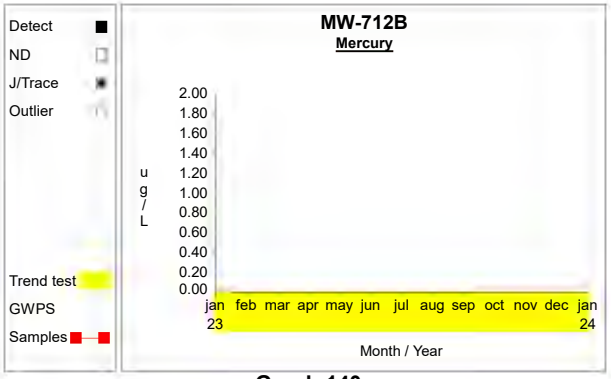
Graph 137



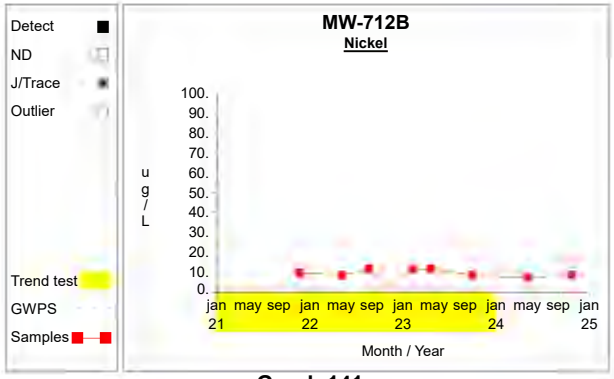
Graph 138



Graph 139



Graph 140



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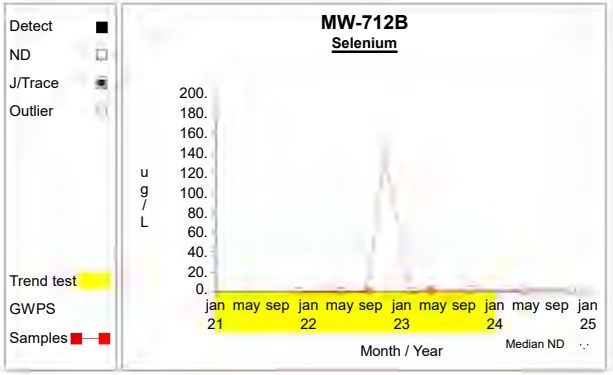
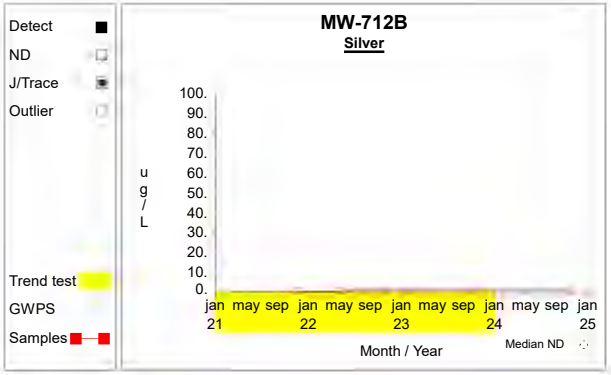
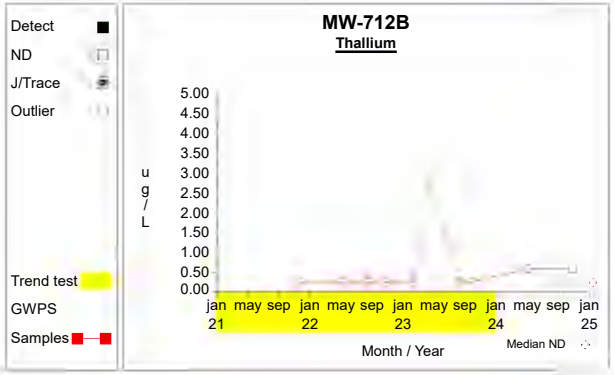


Graph 142

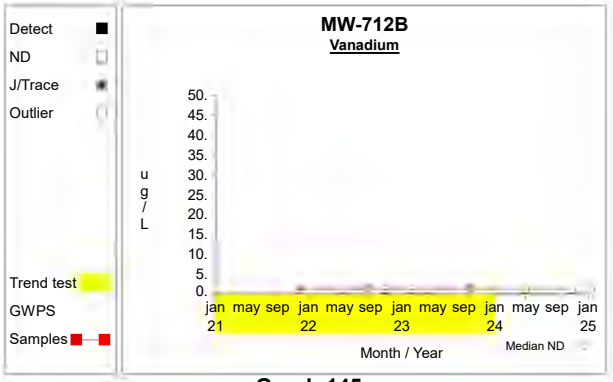


Graph 143

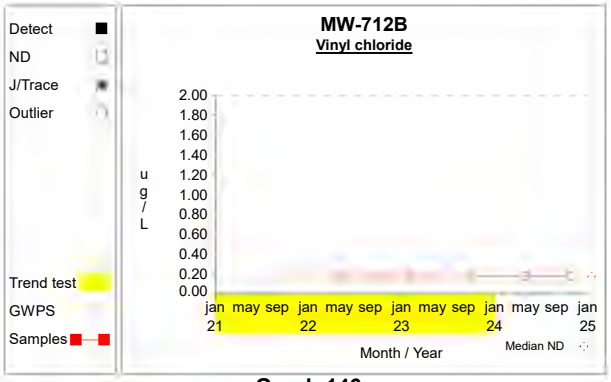


Graph 144

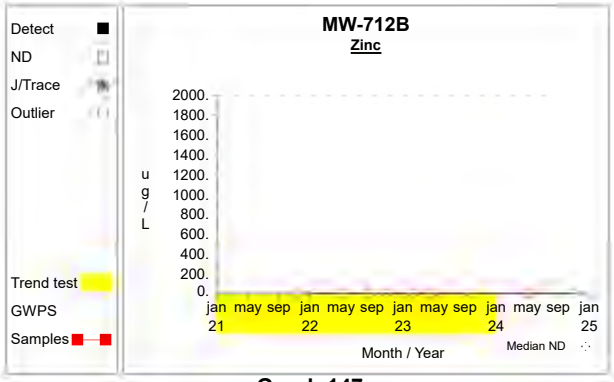
Time Series



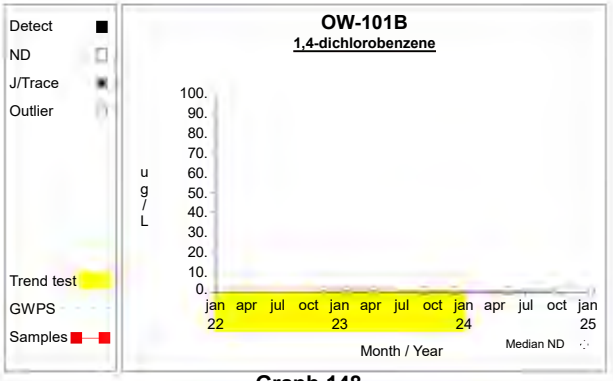
Graph 145



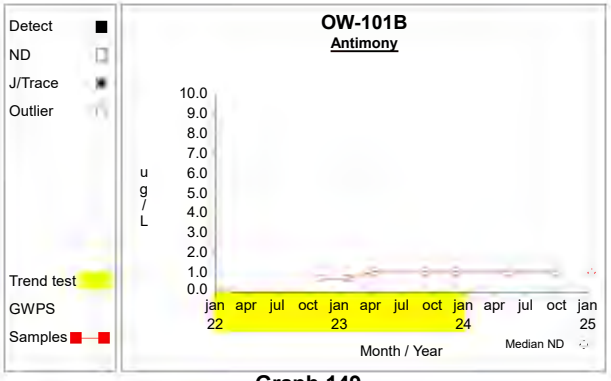
Graph 146



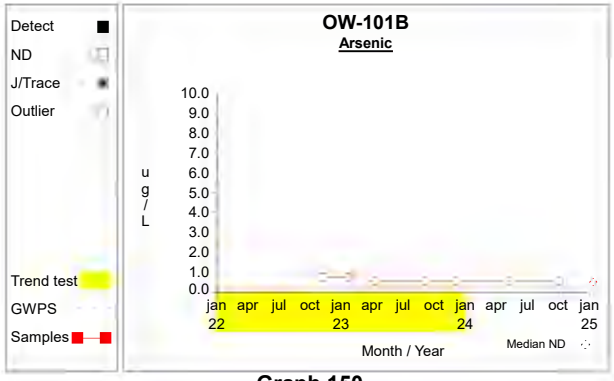
Graph 147



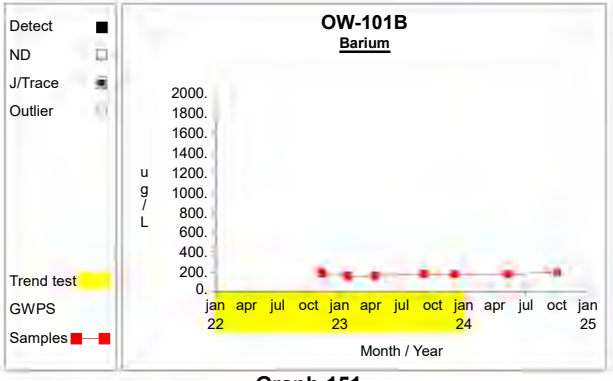
Graph 148



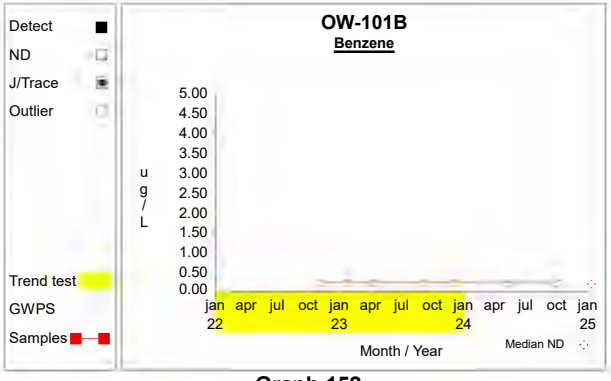
Graph 149



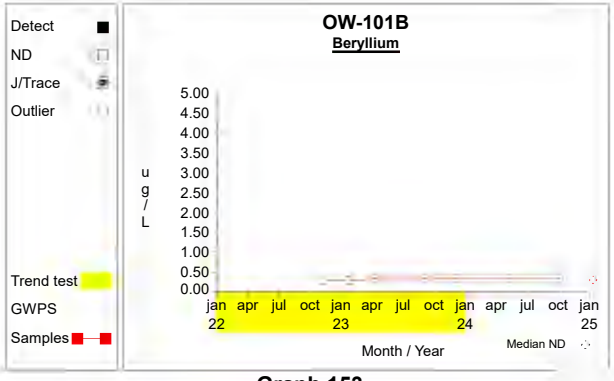
Graph 150



Graph 151

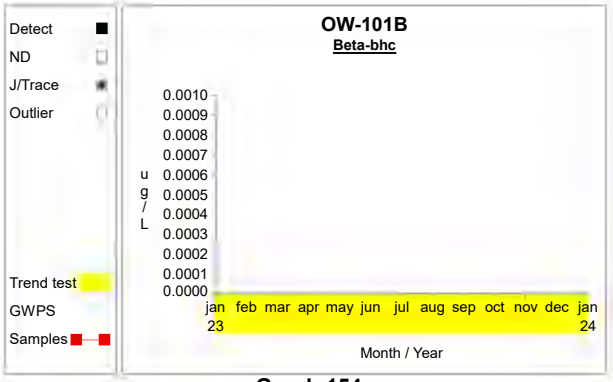


Graph 152

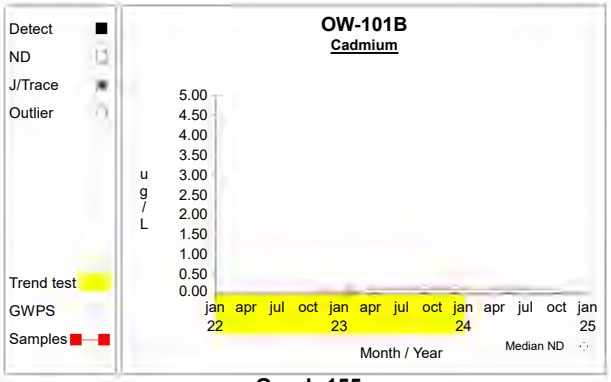


Graph 153

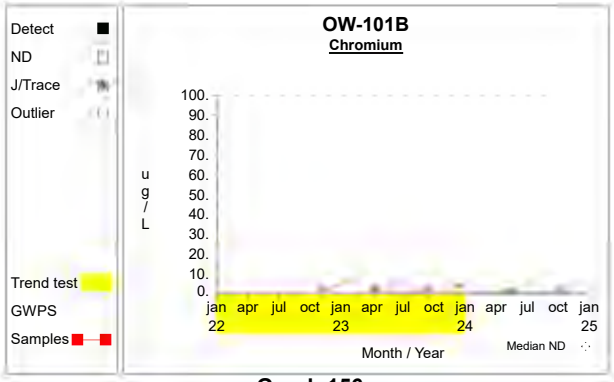
Time Series



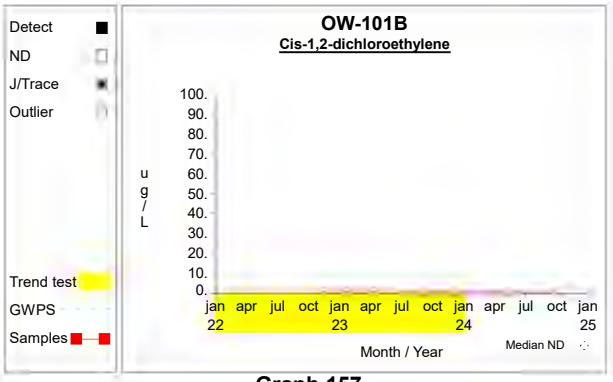
Graph 154



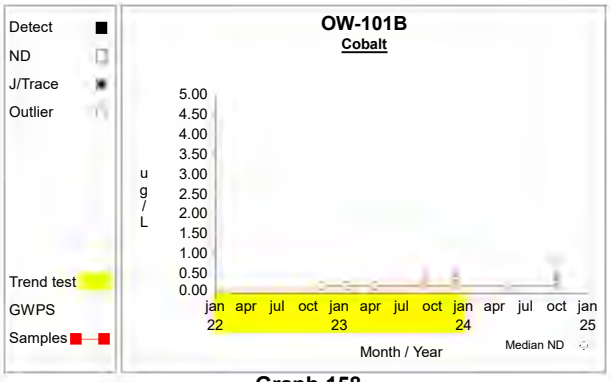
Graph 155



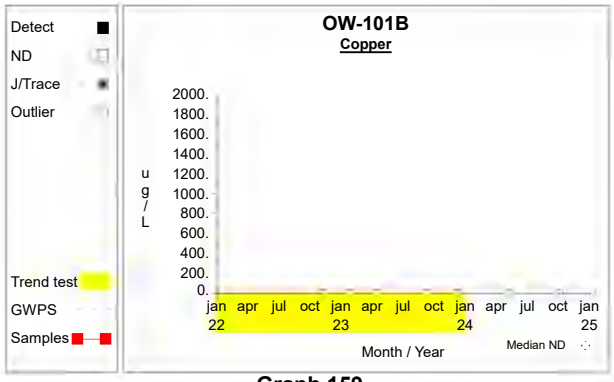
Graph 156



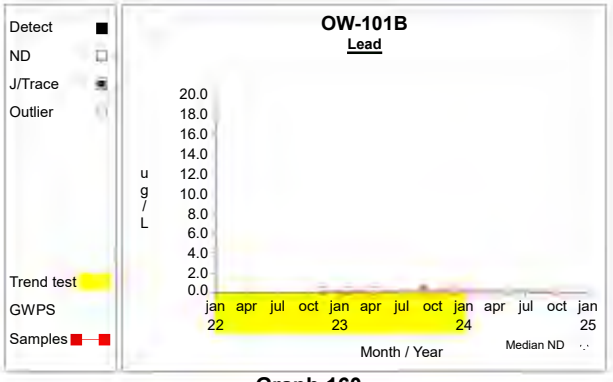
Graph 157



Graph 158



Graph 159



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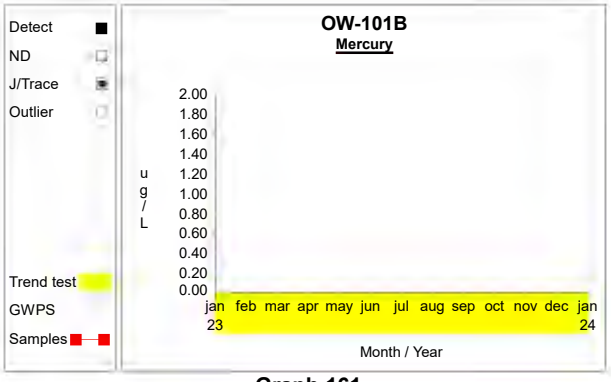

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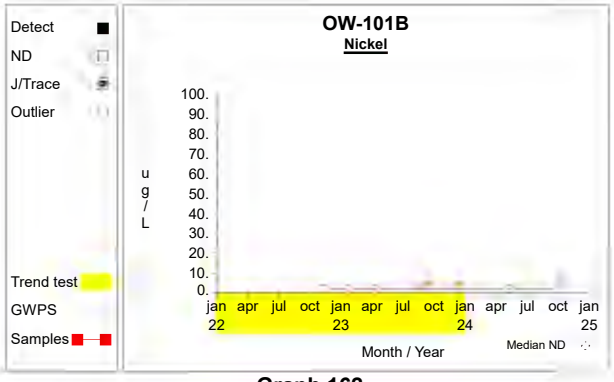
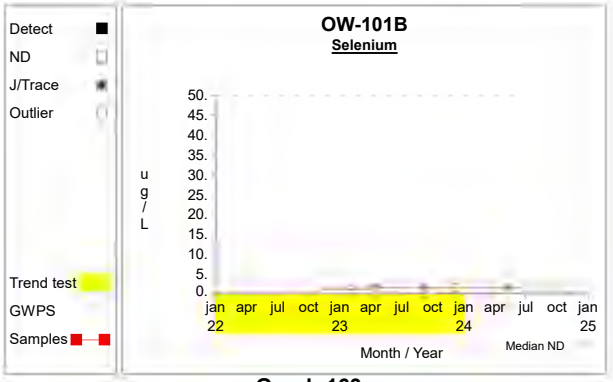
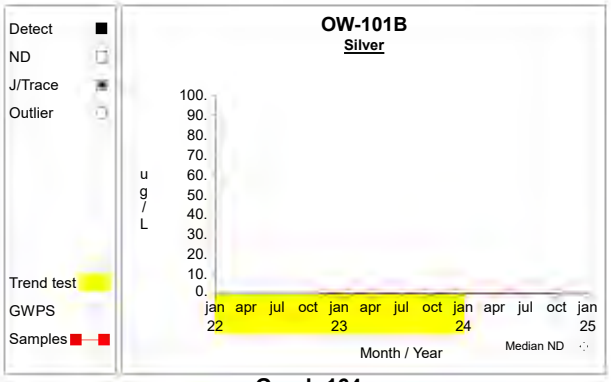


Graph 162

Time Series



Graph 163



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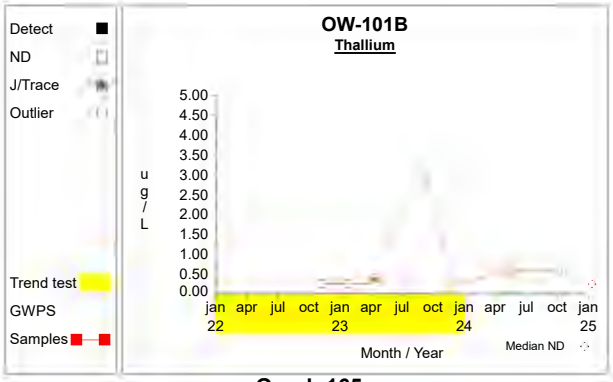

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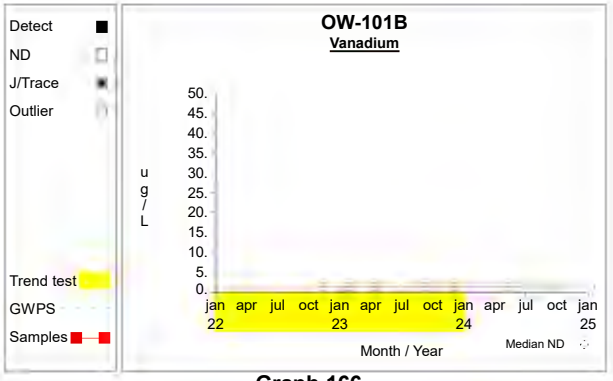
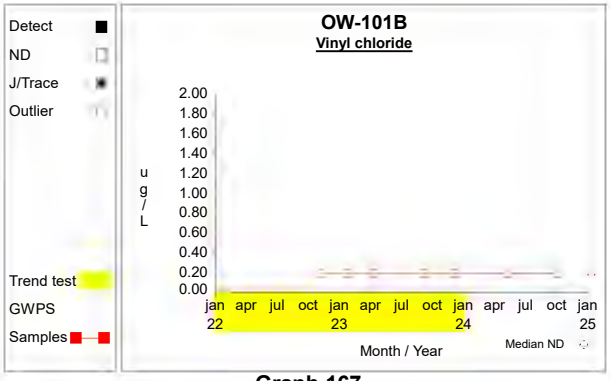
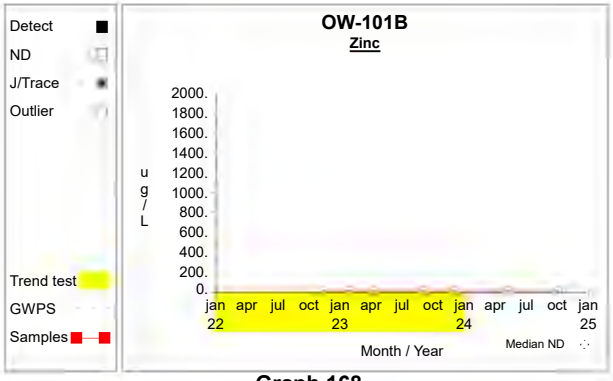


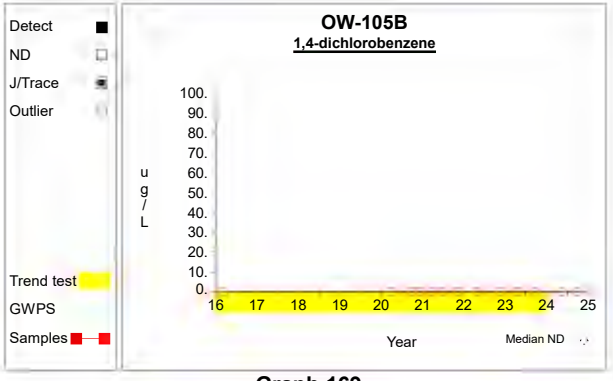
Graph 166



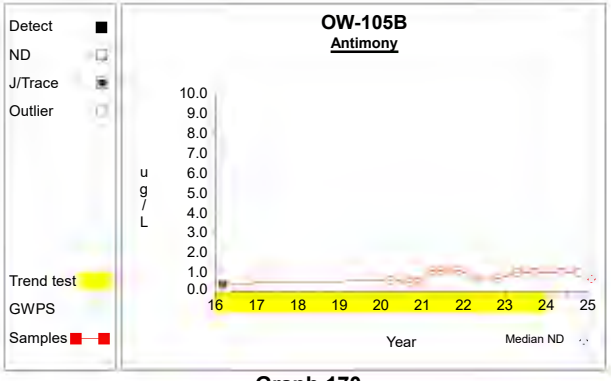
Graph 167



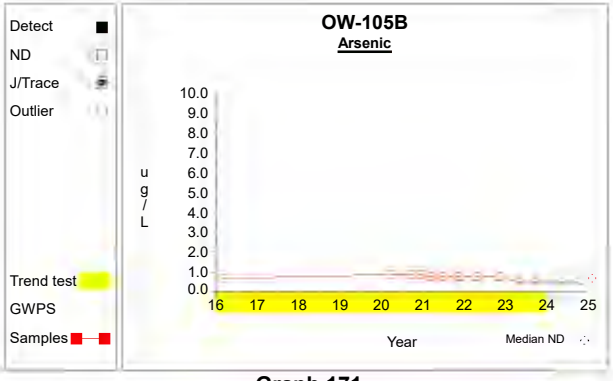
Graph 168



Graph 169

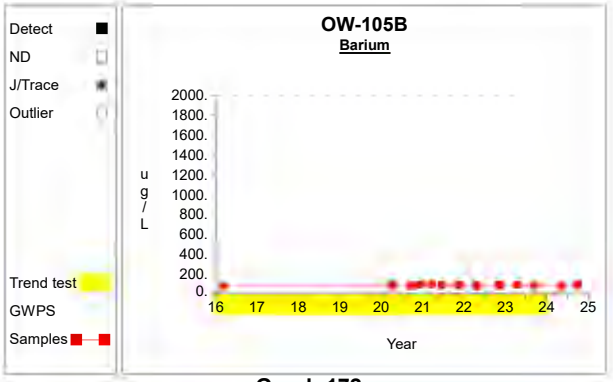


Graph 170

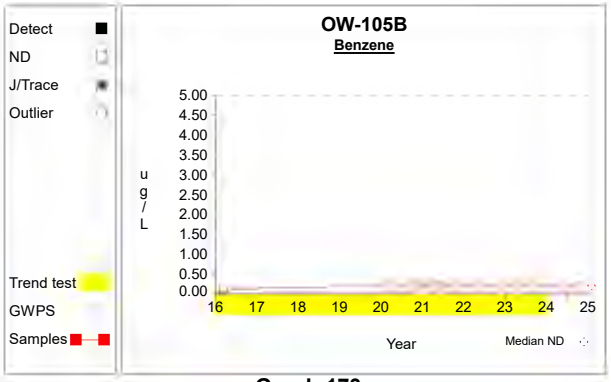


Graph 171

Time Series



Graph 172



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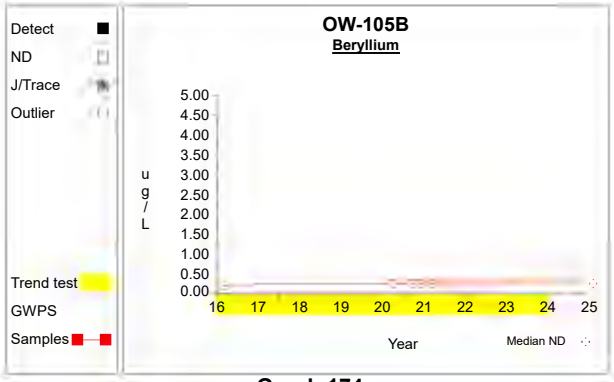

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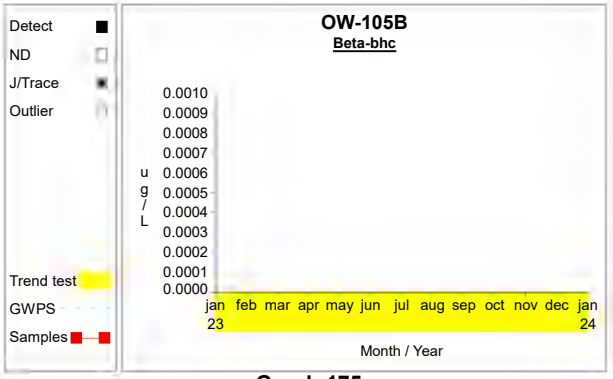

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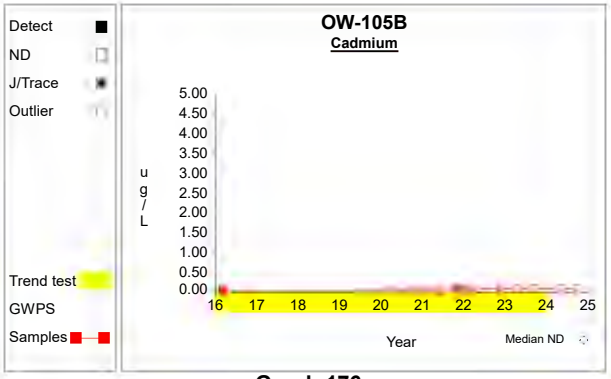
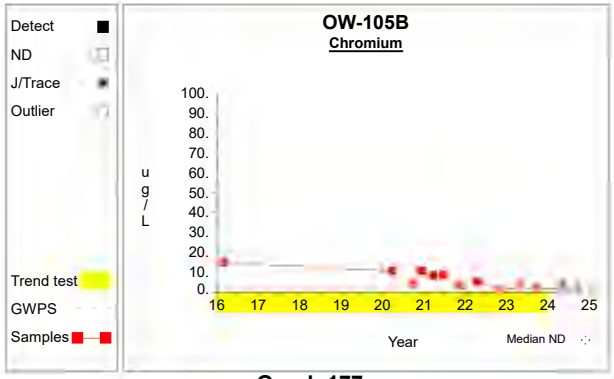
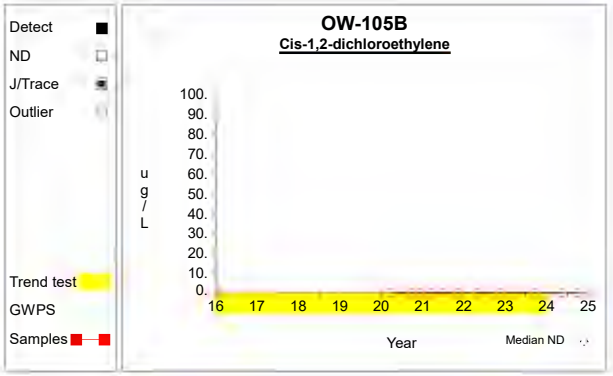


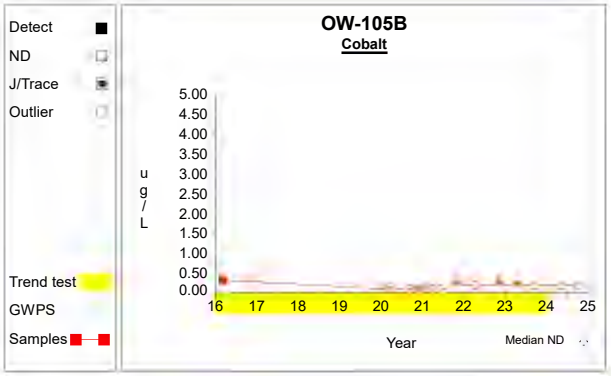
Graph 176



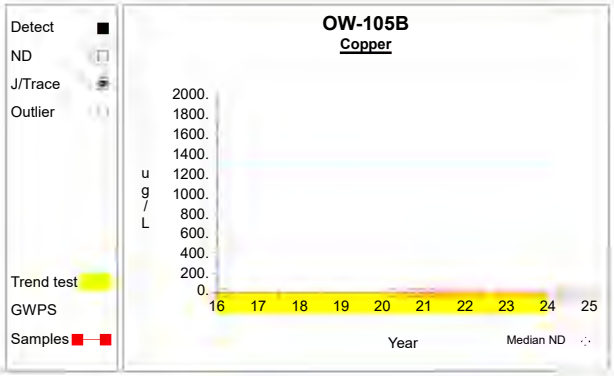
Graph 177



Graph 178

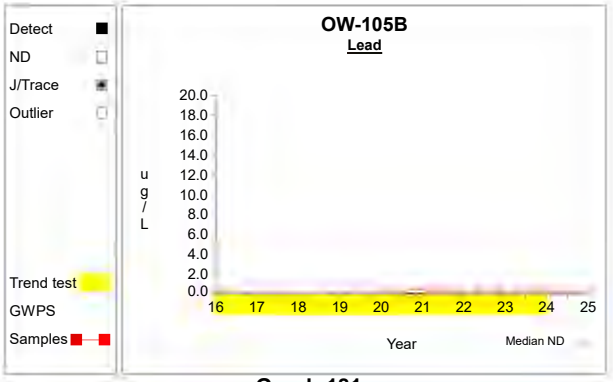


Graph 179

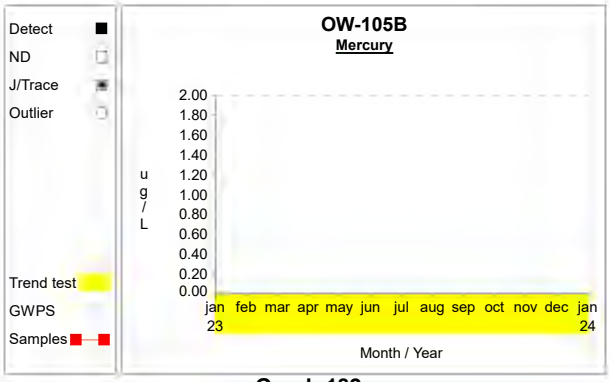


Graph 180

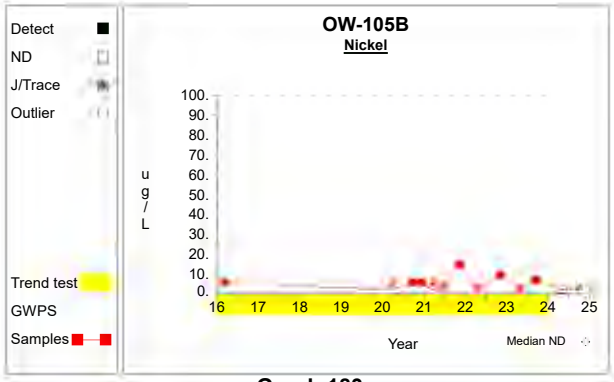
Time Series



Graph 181



Graph 182



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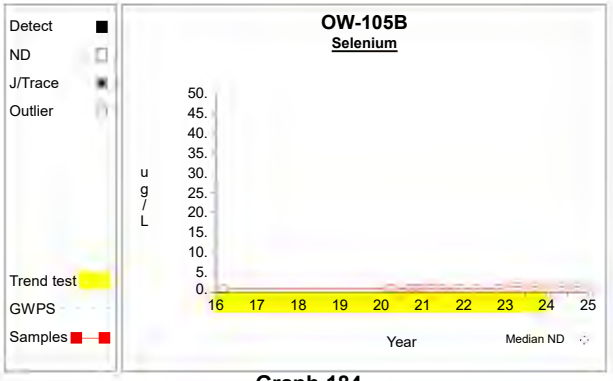
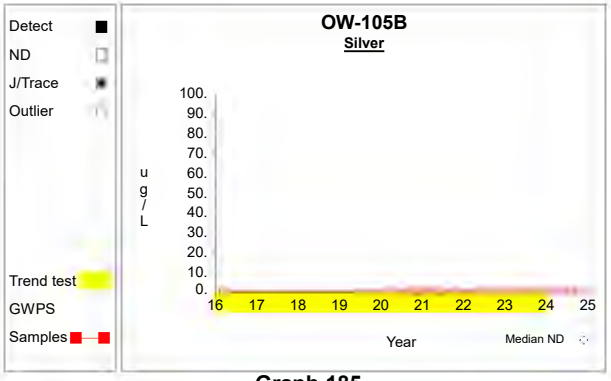
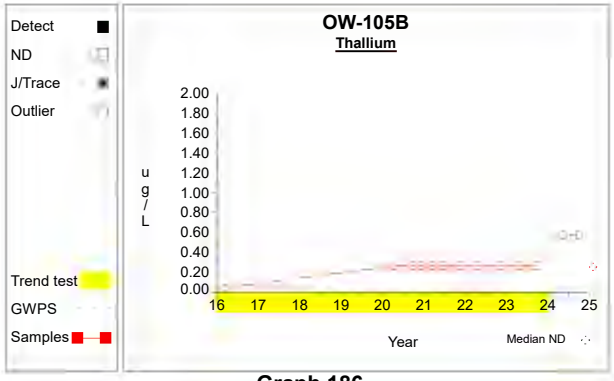


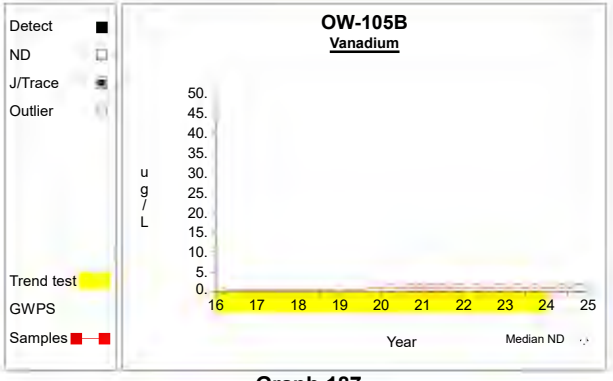
Graph 184



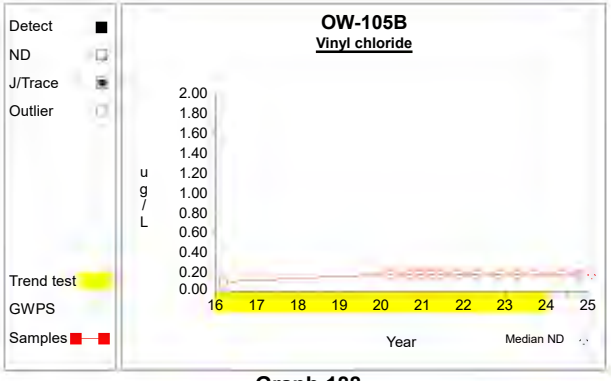
Graph 185



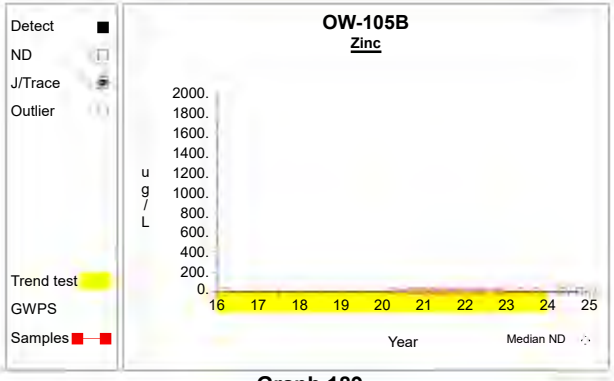
Graph 186



Graph 187

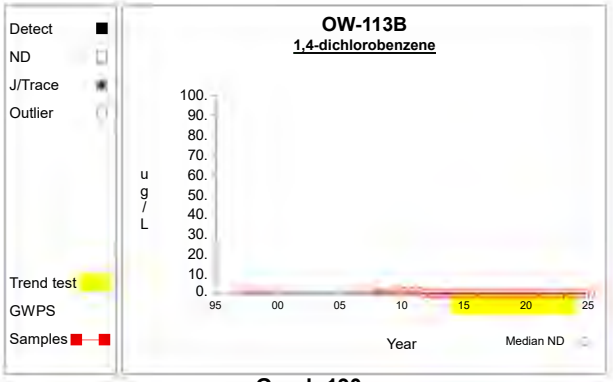


Graph 188

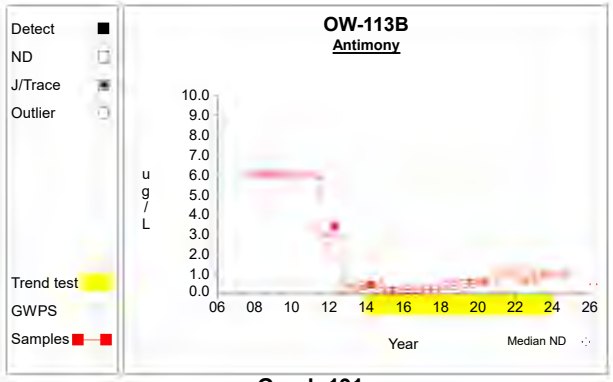


Graph 189

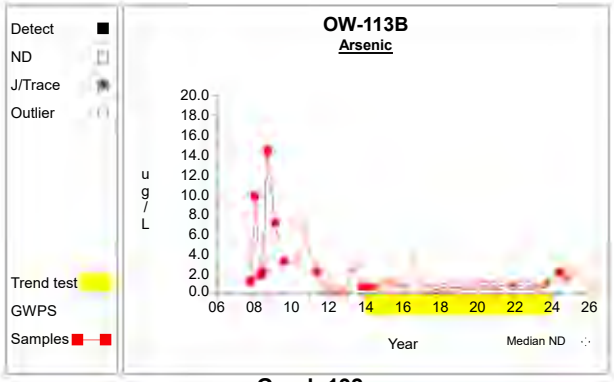
Time Series



Graph 190



Graph 191



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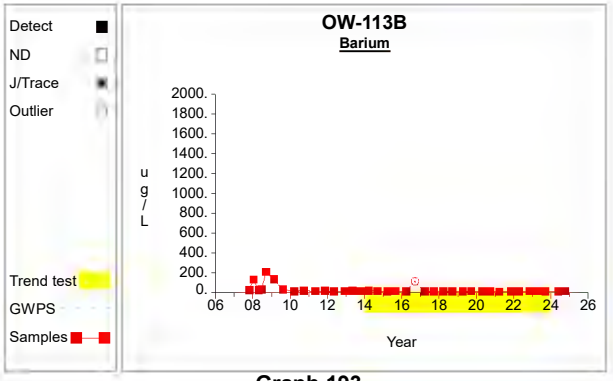
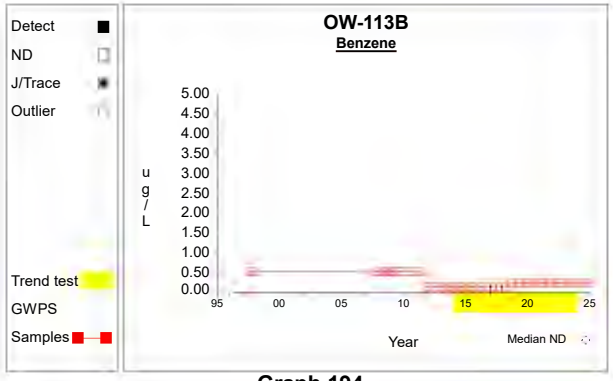


Graph 193



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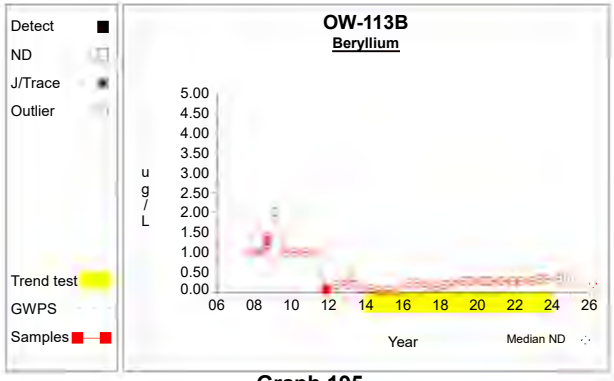

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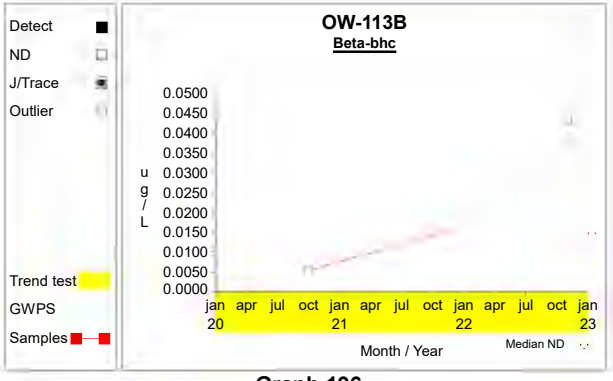
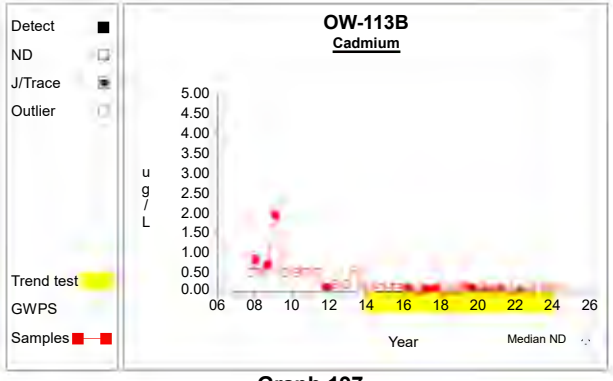


Graph 196



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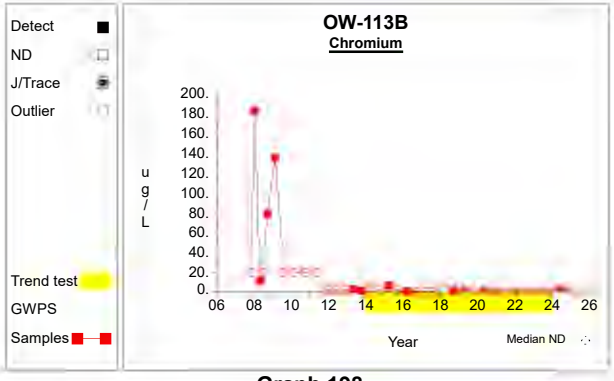
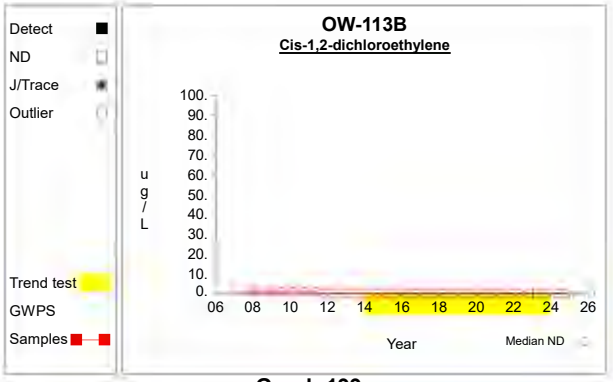
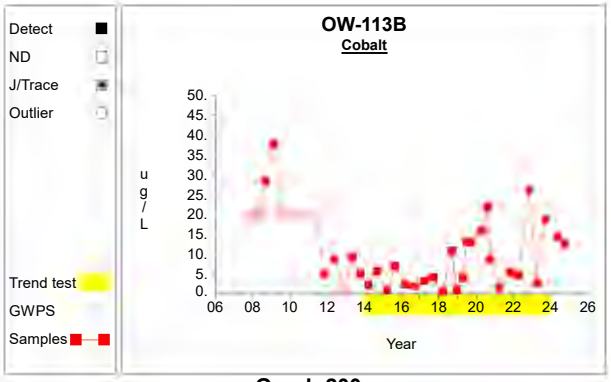


Graph 198

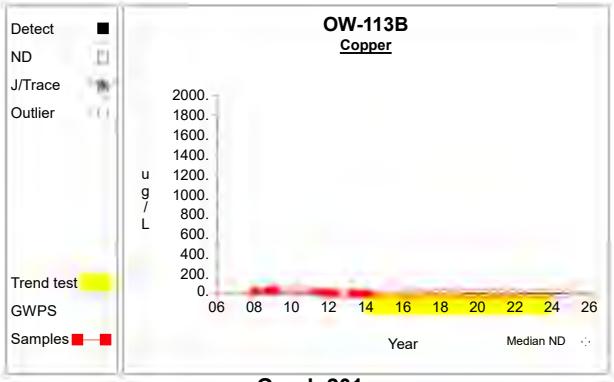
Time Series



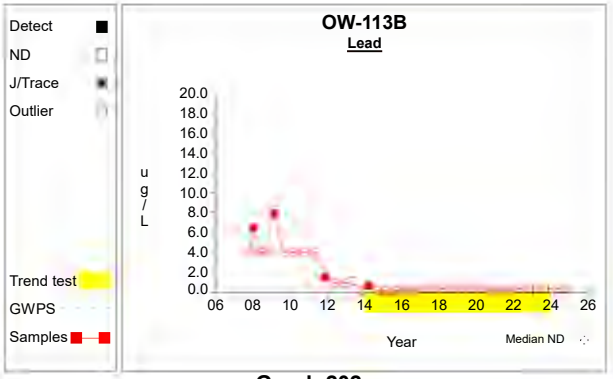
Graph 199



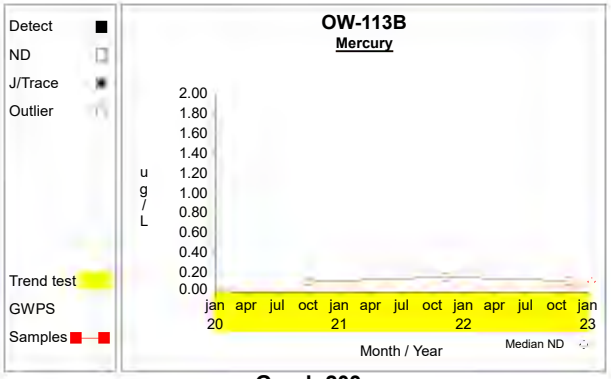
Graph 200



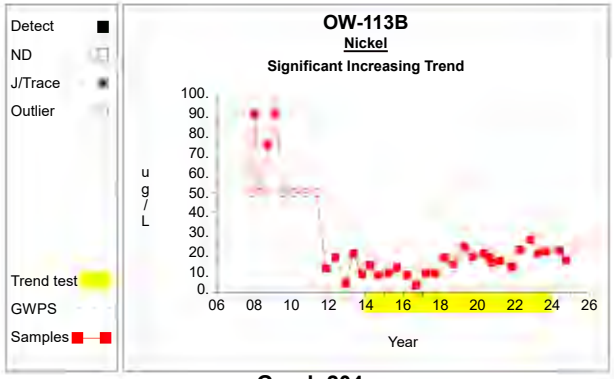
Graph 201



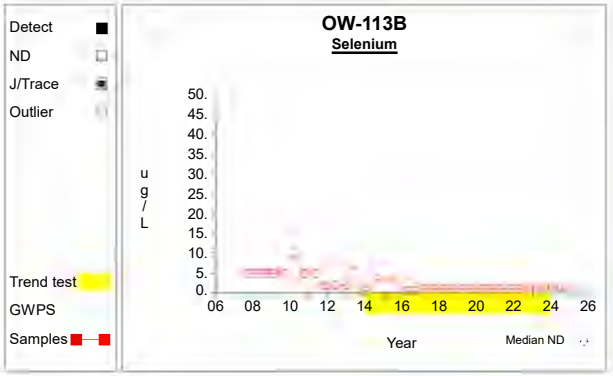
Graph 202



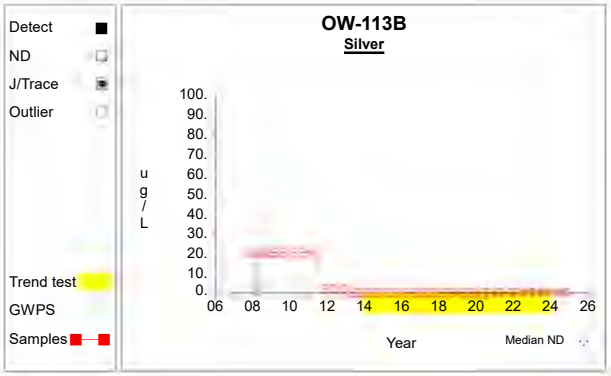
Graph 203



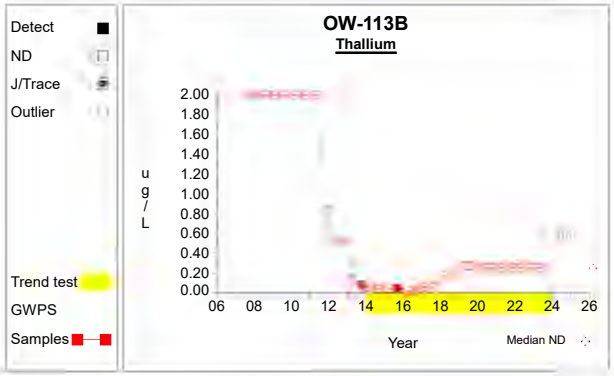
Graph 204



Graph 205

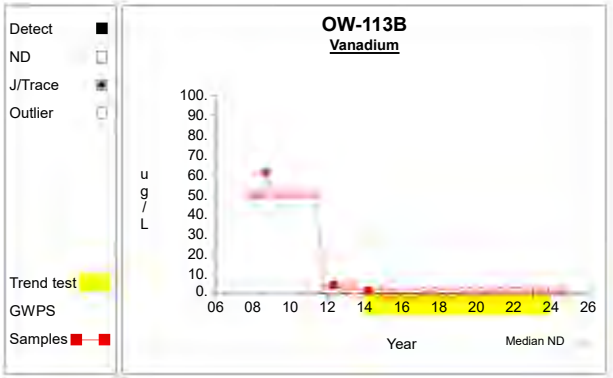


Graph 206

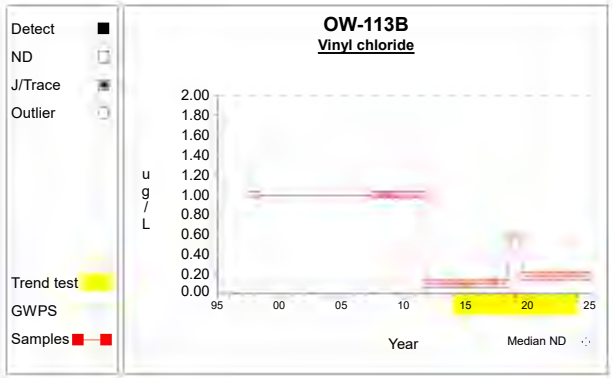


Graph 207

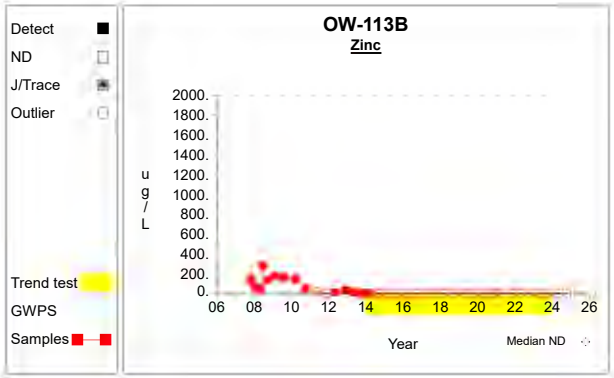
Time Series



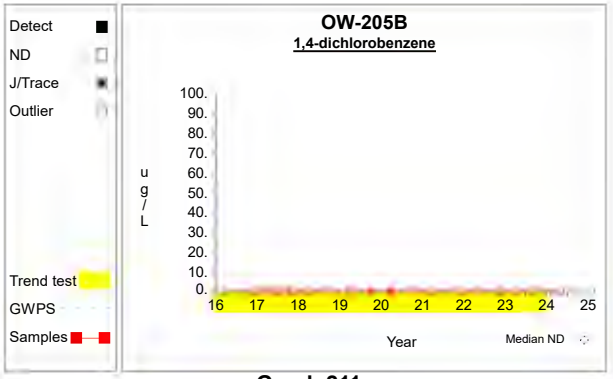
Graph 208



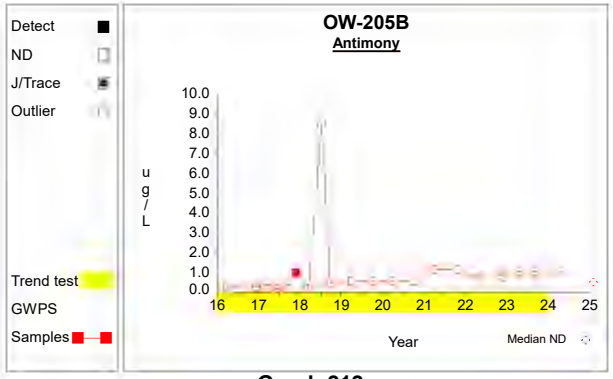
Graph 209



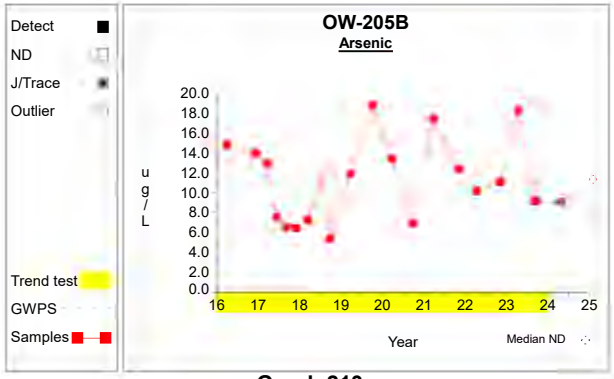
Graph 210



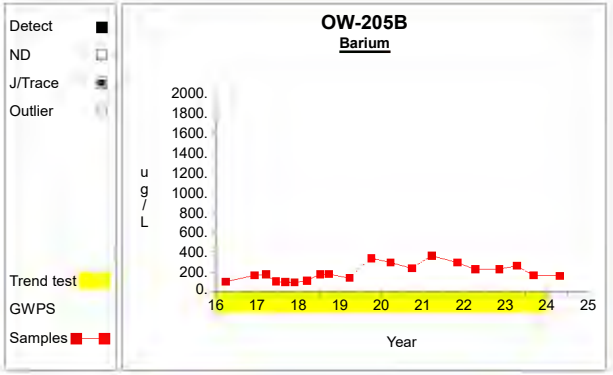
Graph 211



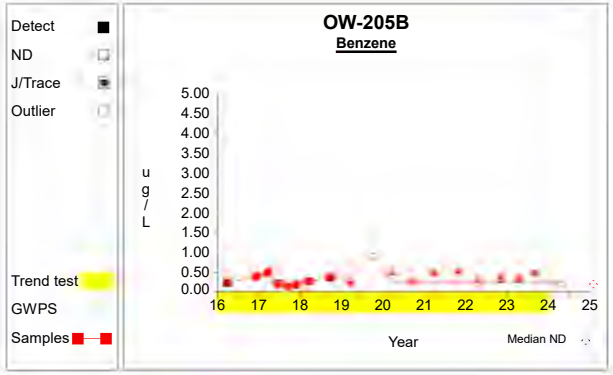
Graph 212



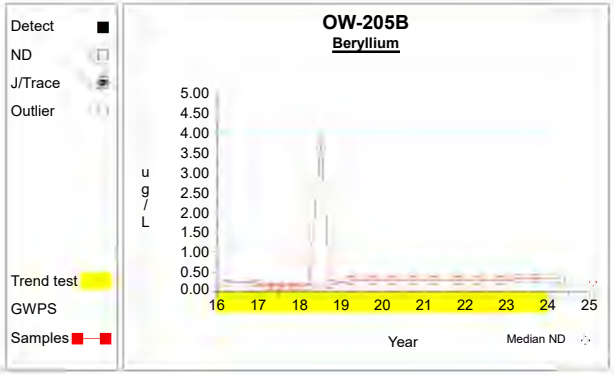
Graph 213



Graph 214

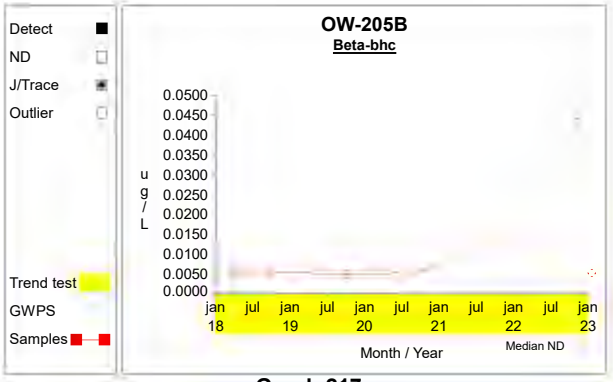


Graph 215

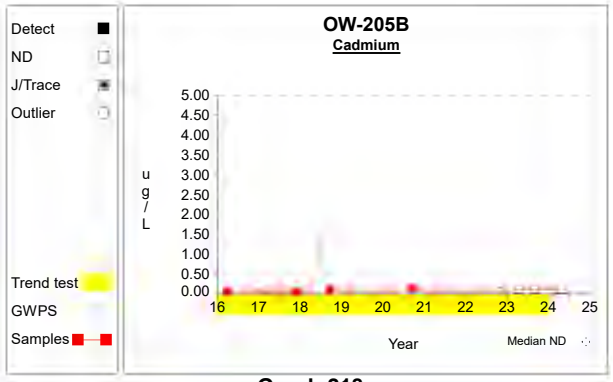


Graph 216

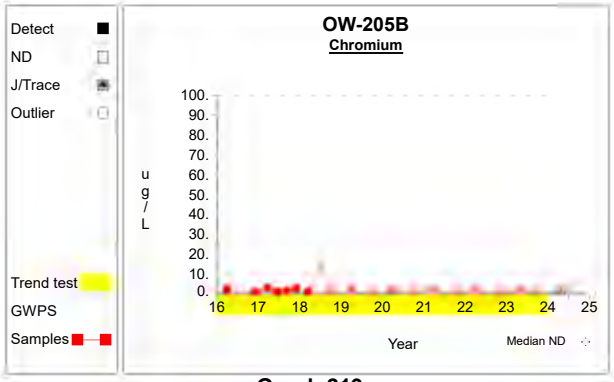
Time Series



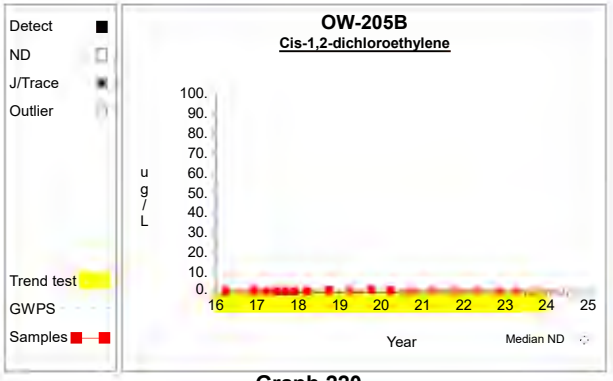
Graph 217



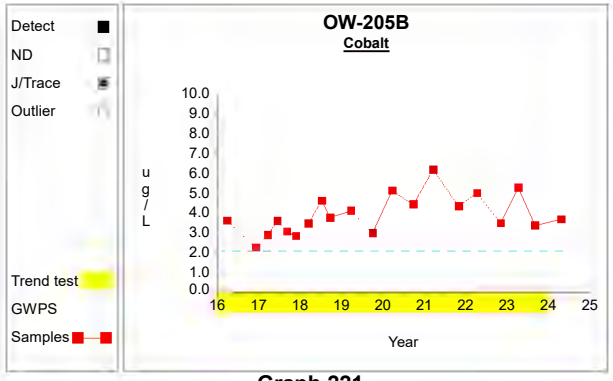
Graph 218



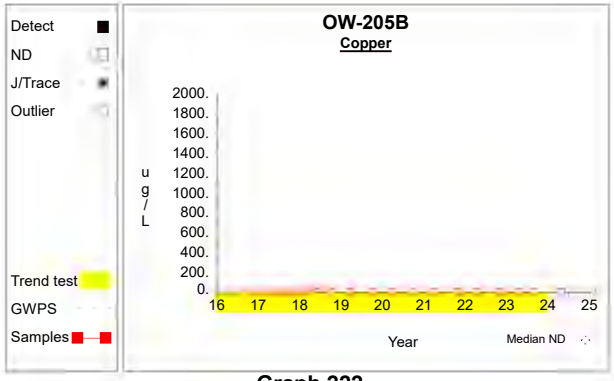
Graph 219



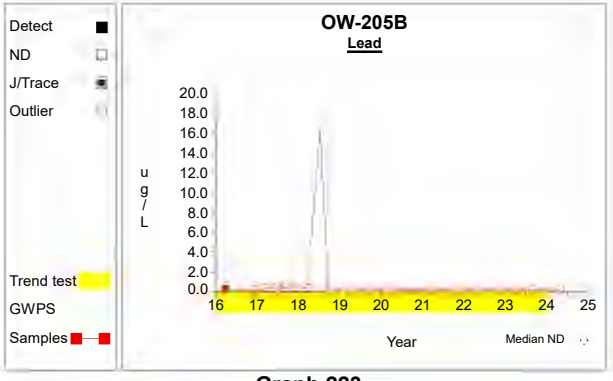
Graph 220



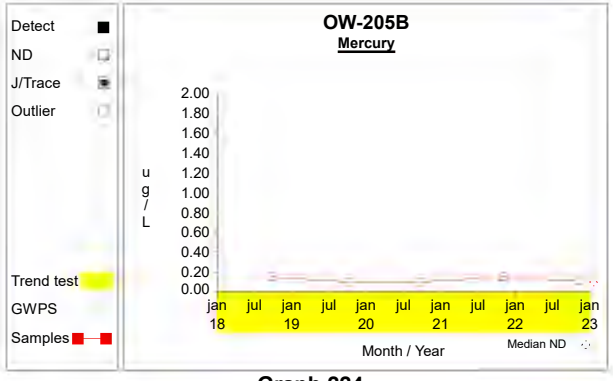
Graph 221



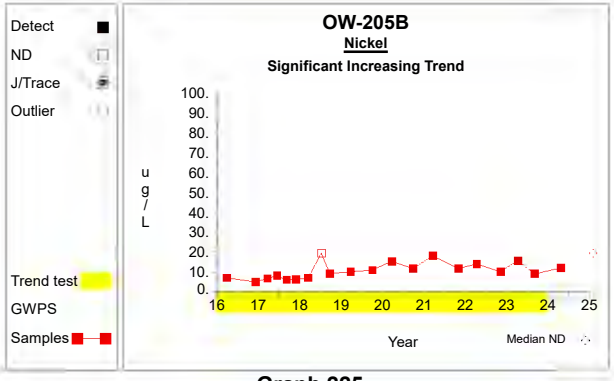
Graph 222



Graph 223

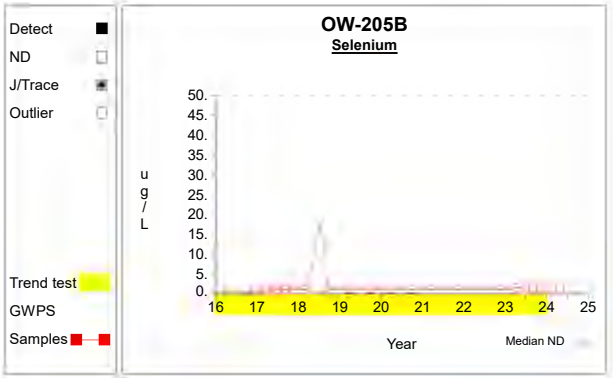


Graph 224

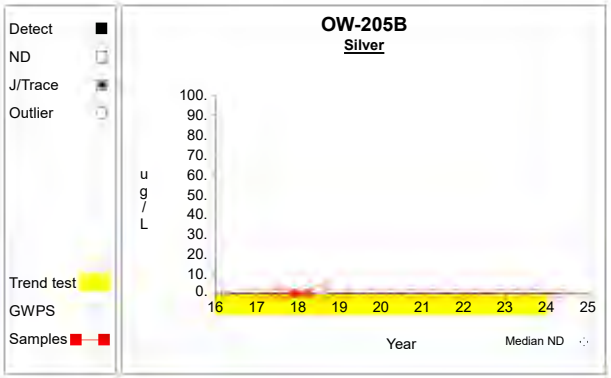


Graph 225

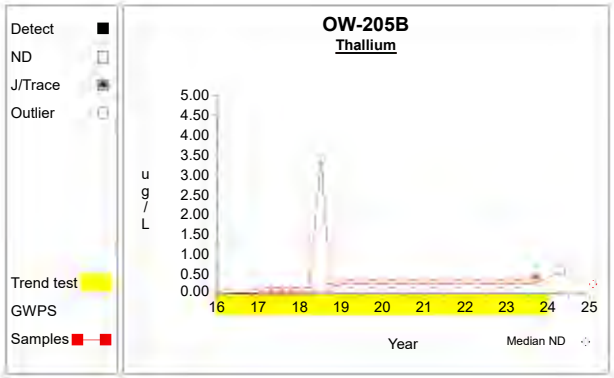
Time Series



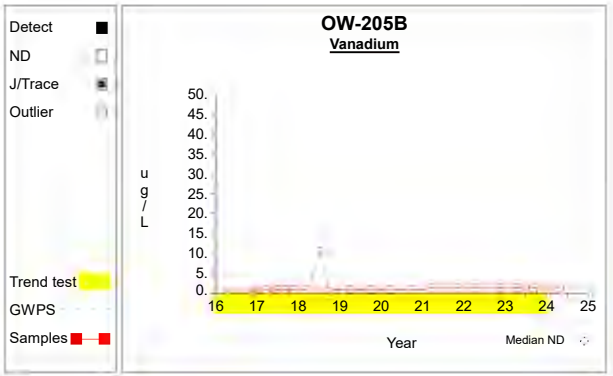
Graph 226



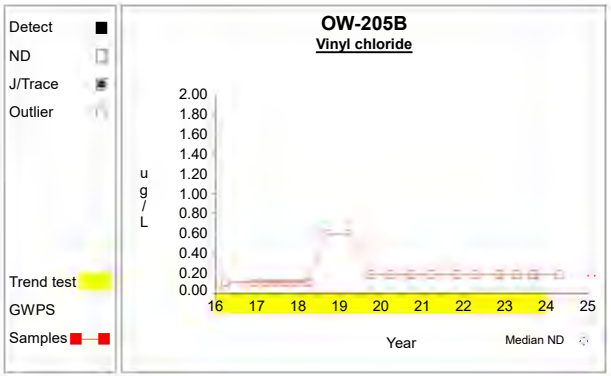
Graph 227



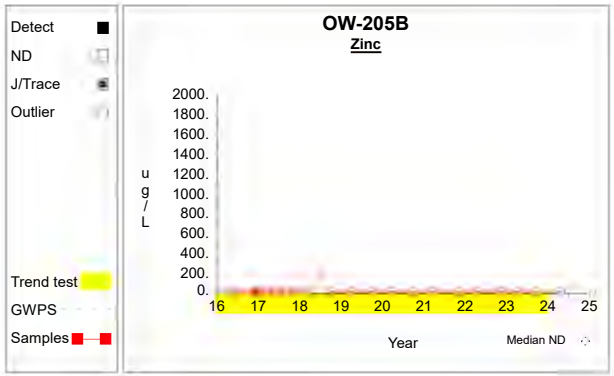
Graph 228



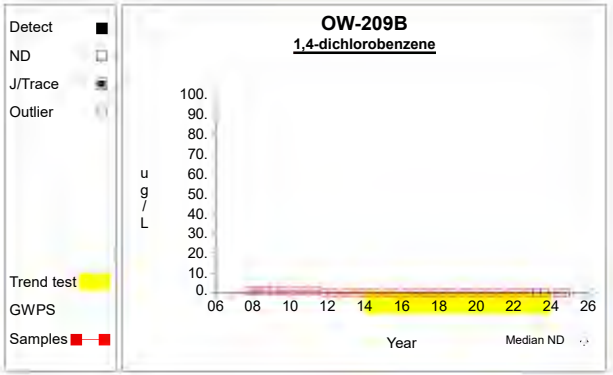
Graph 229



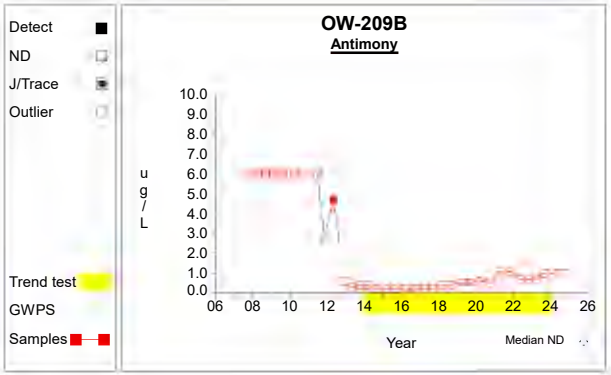
Graph 230



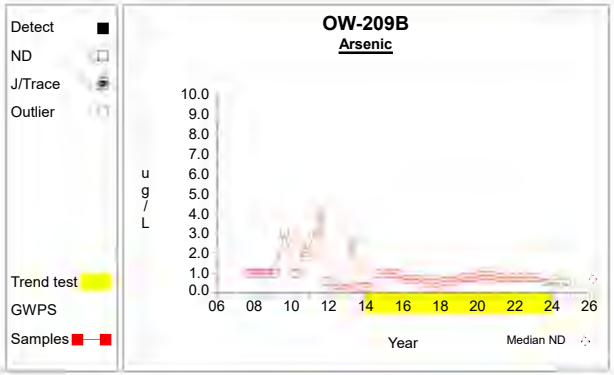
Graph 231



Graph 232

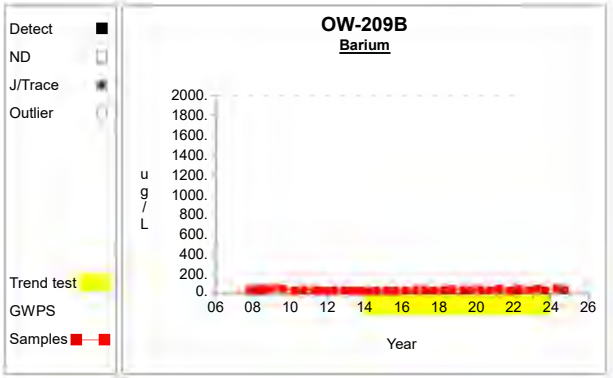


Graph 233

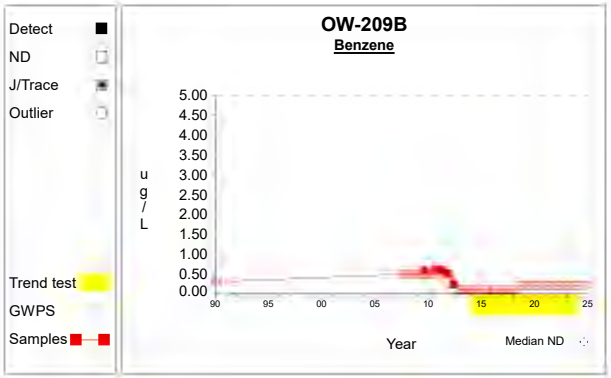


Graph 234

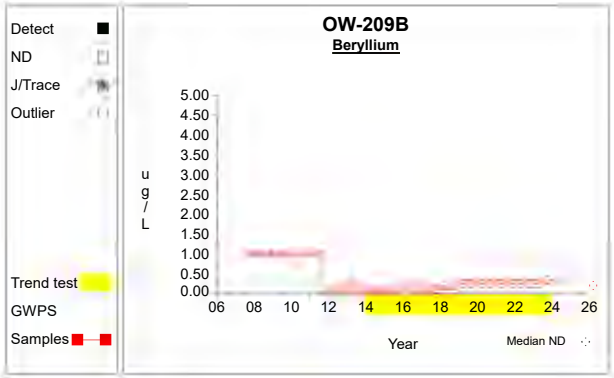
Time Series



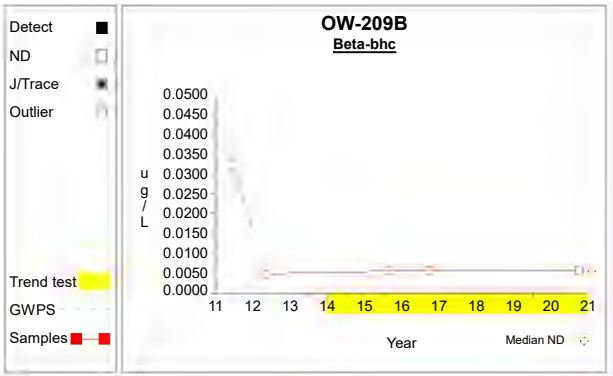
Graph 235



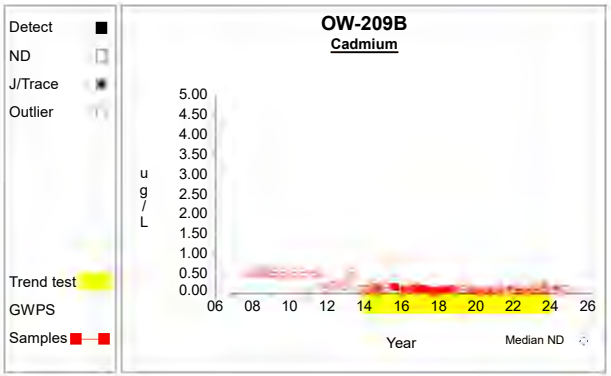
Graph 236



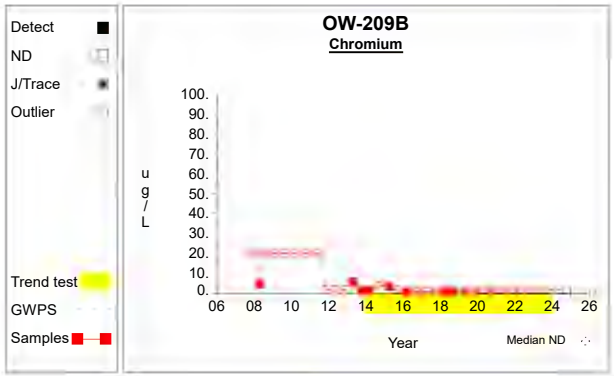
Graph 237



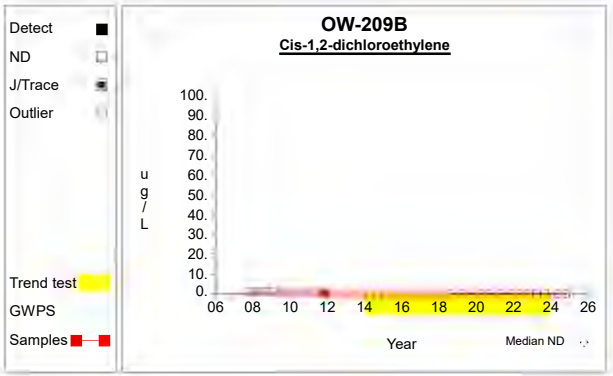
Graph 238



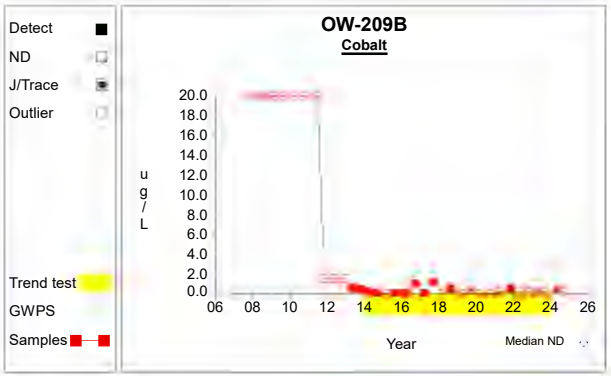
Graph 239



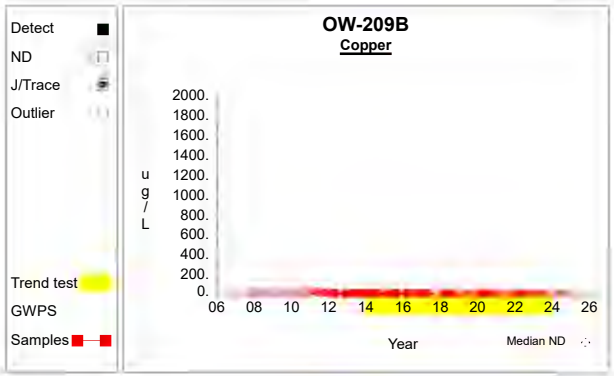
Graph 240



Graph 241

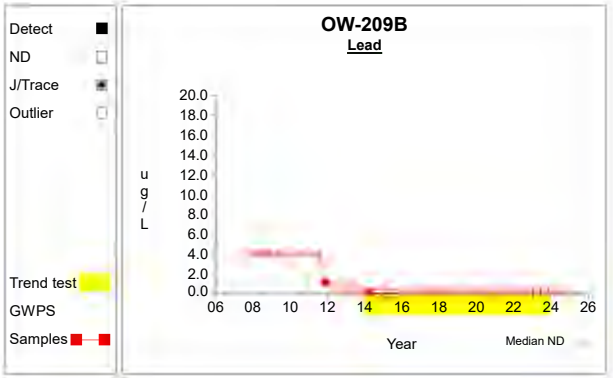


Graph 242

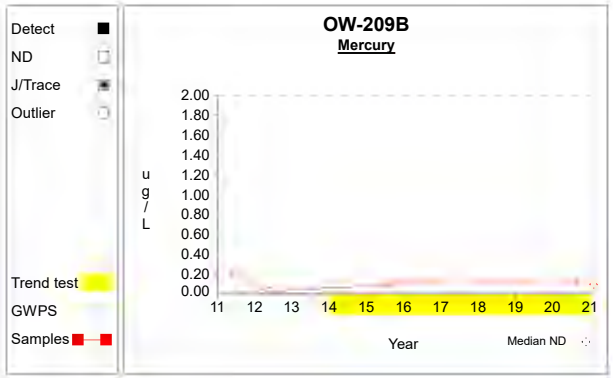


Graph 243

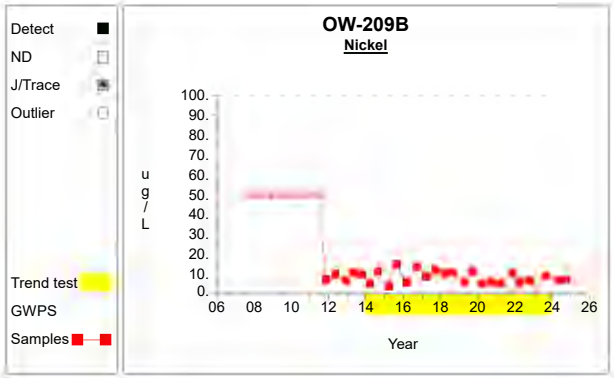
Time Series



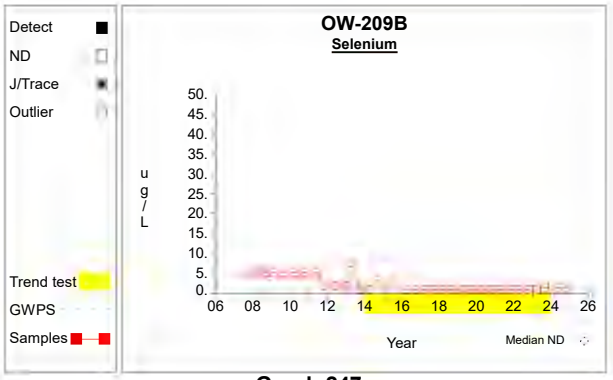
Graph 244



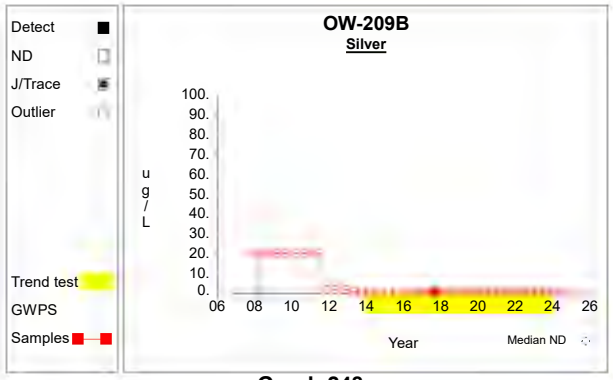
Graph 245



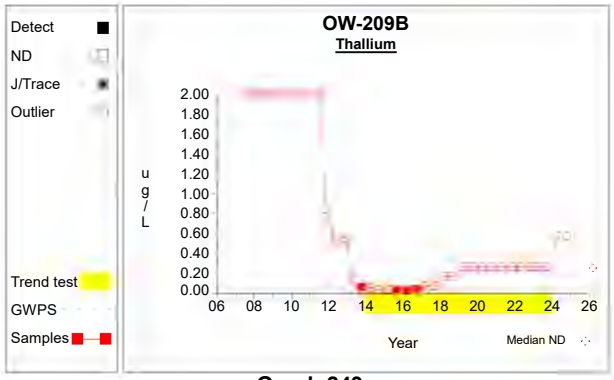
Graph 246



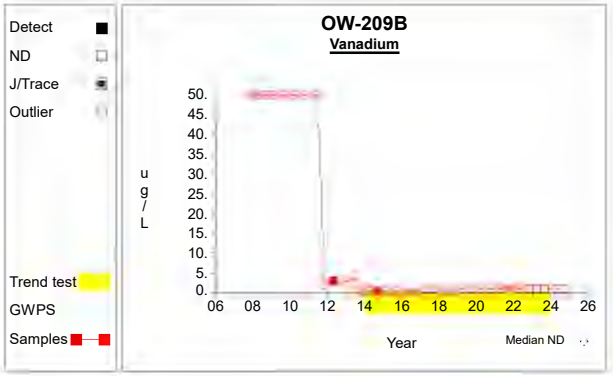
Graph 247



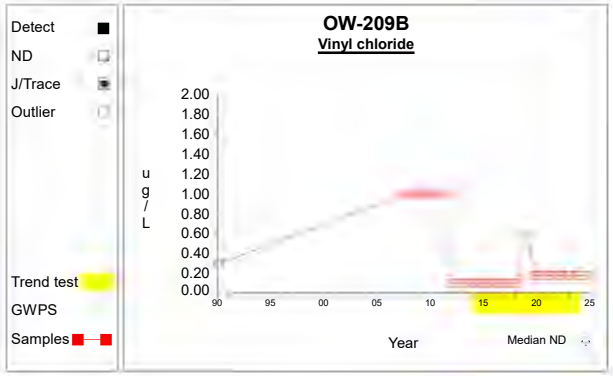
Graph 248



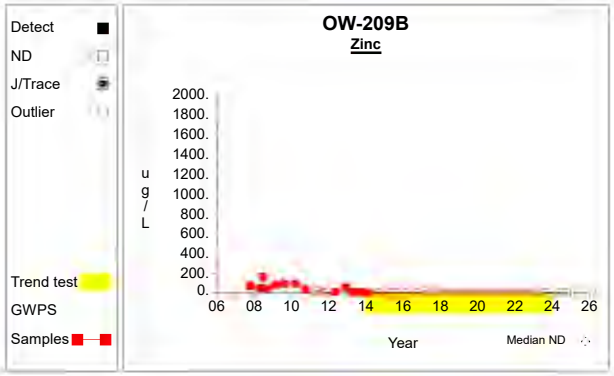
Graph 249



Graph 250

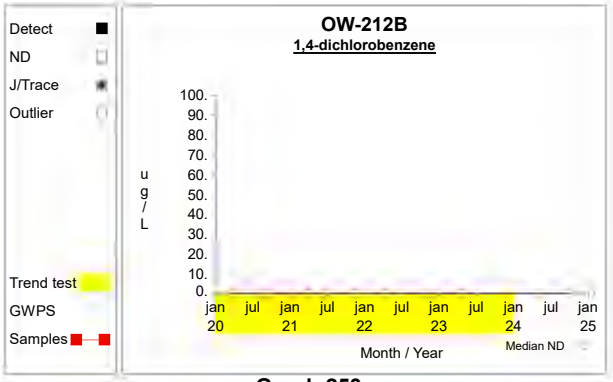


Graph 251

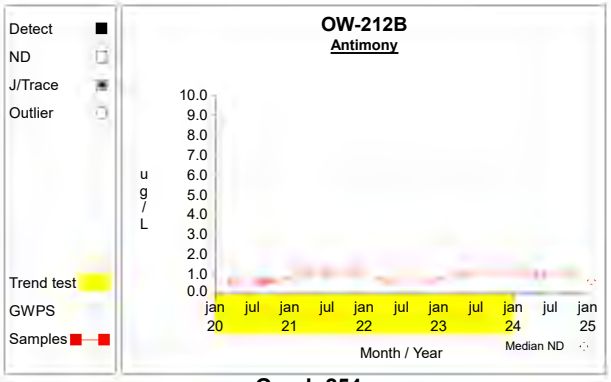


Graph 252

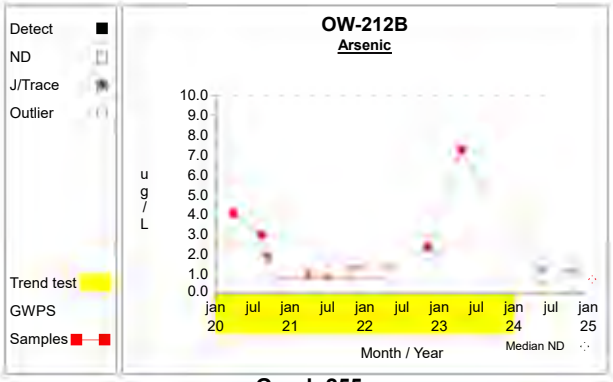
Time Series



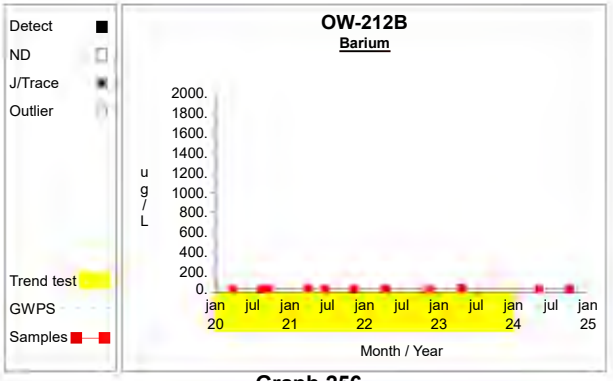
Graph 253



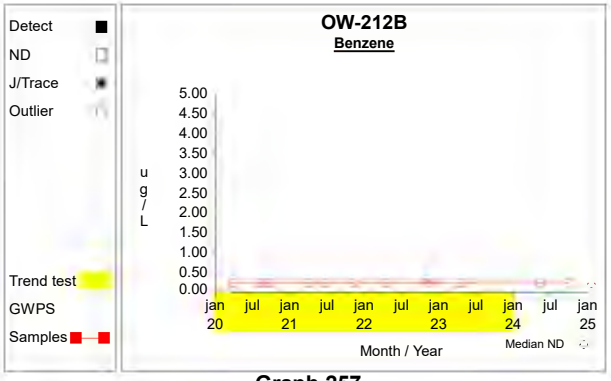
Graph 254



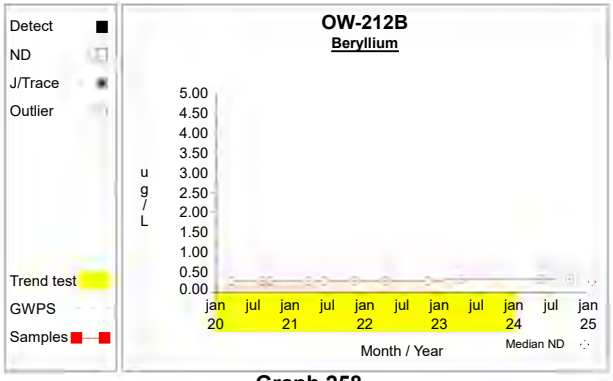
Graph 255



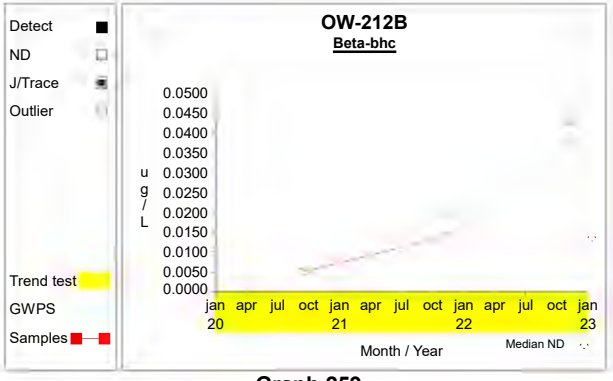
Graph 256



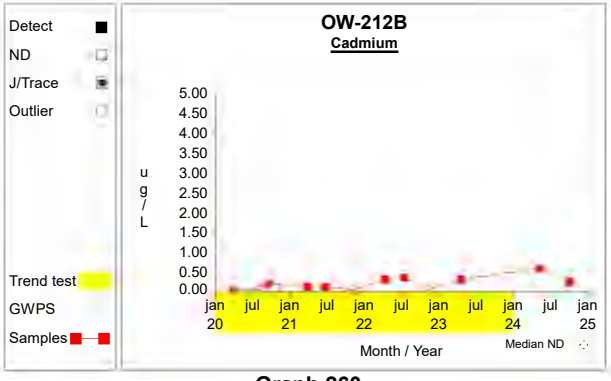
Graph 257



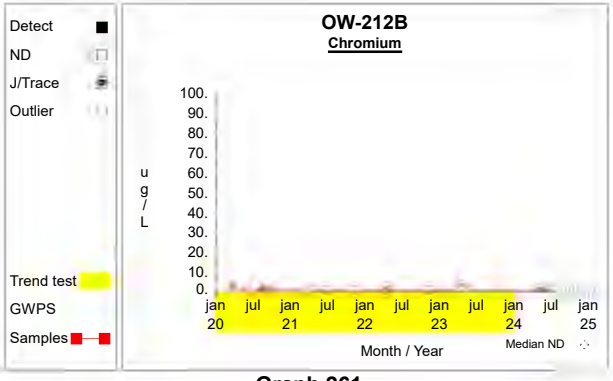
Graph 258



Graph 259

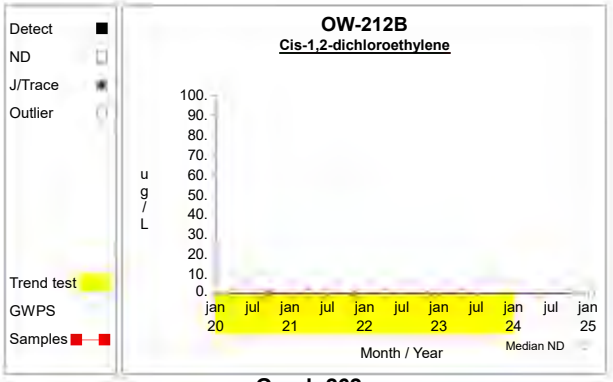


Graph 260

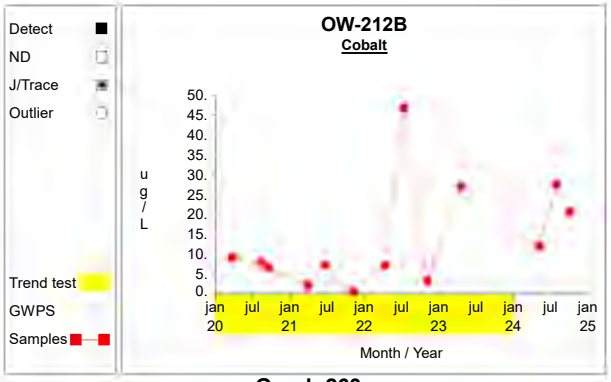


Graph 261

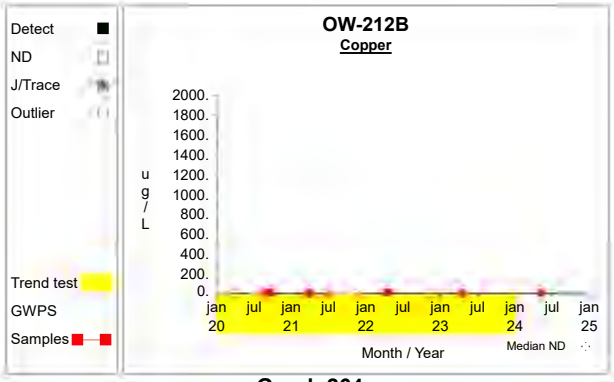
Time Series



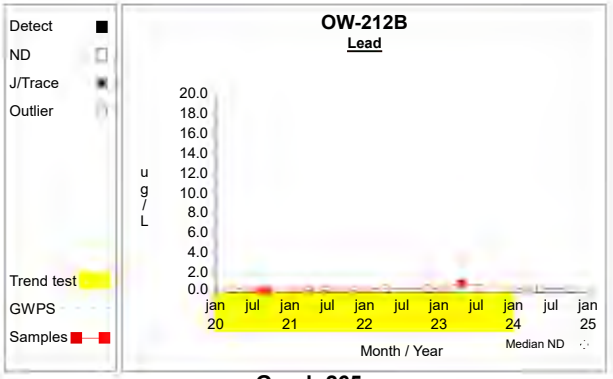
Graph 262



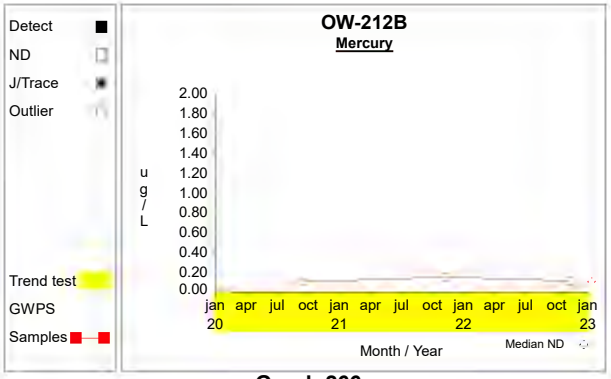
Graph 263



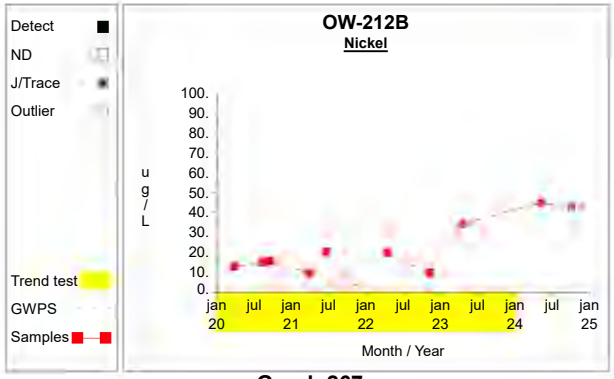
Graph 264



Graph 265



Graph 266



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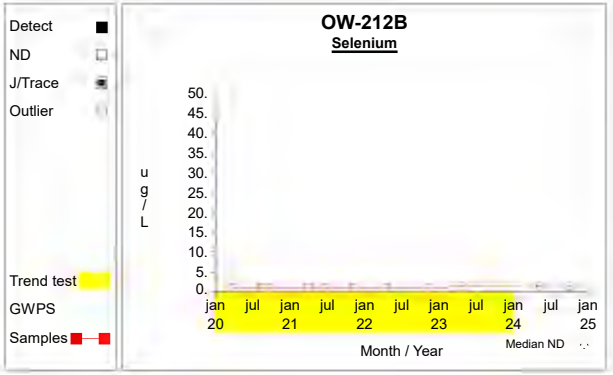
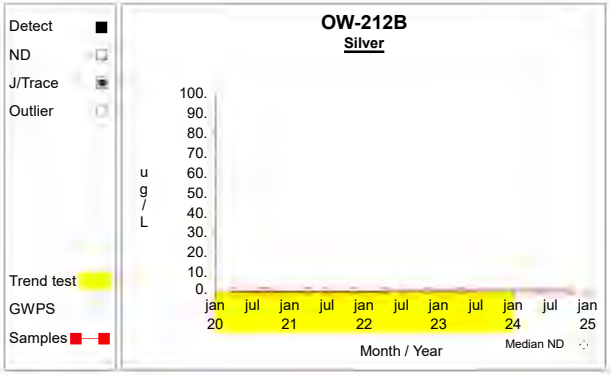
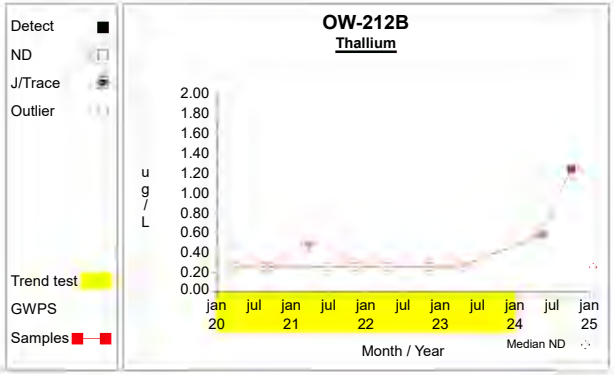


Graph 268

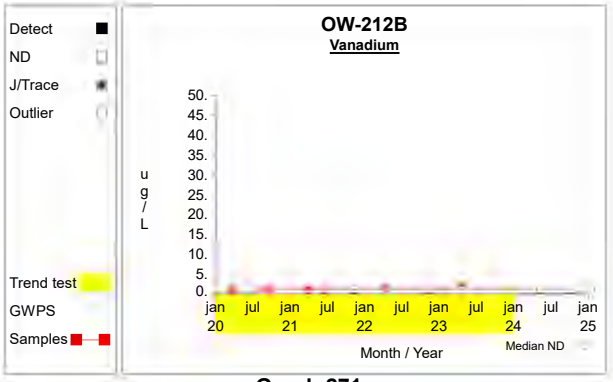


Graph 269

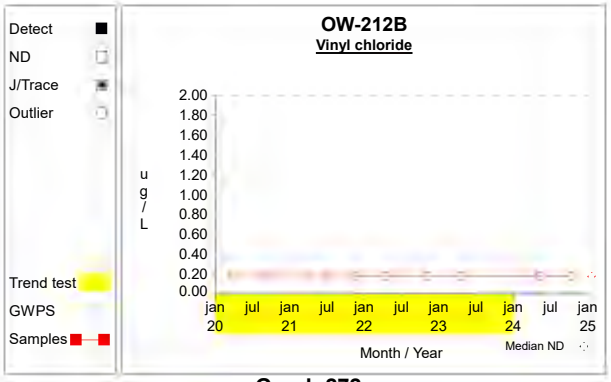


Graph 270

Time Series



Graph 271



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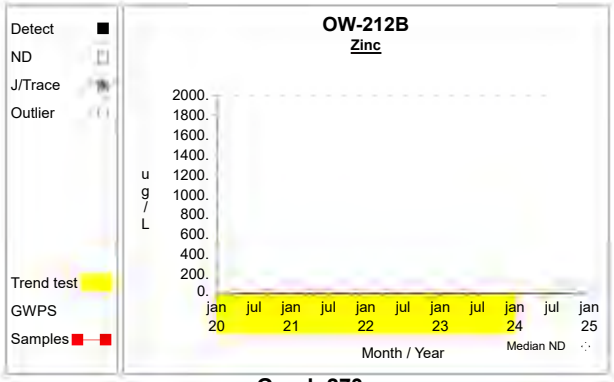
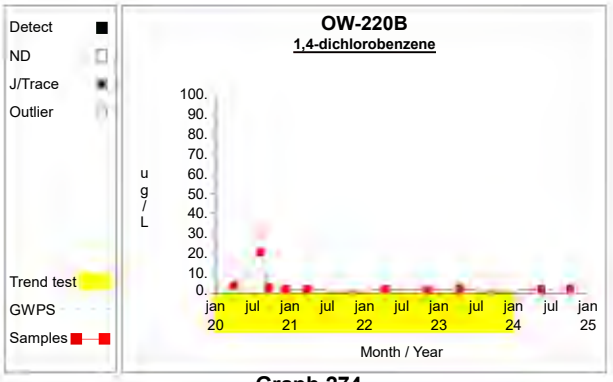


Graph 273



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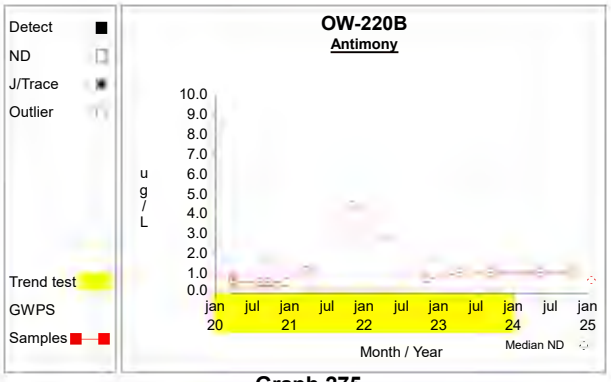
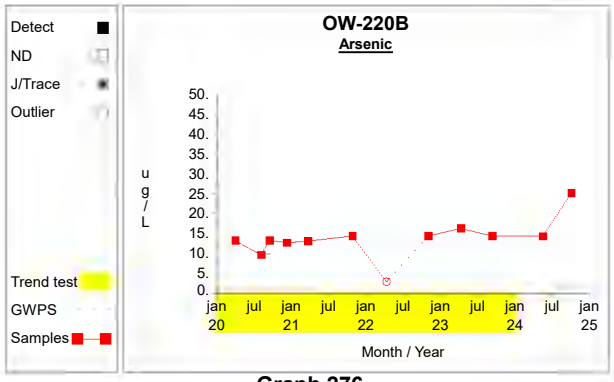
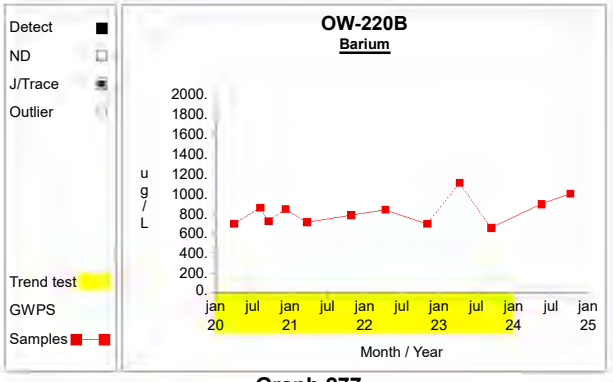


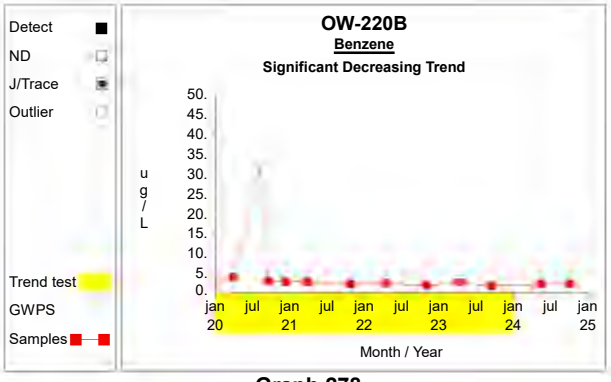
Graph 275



Graph 276



Graph 277



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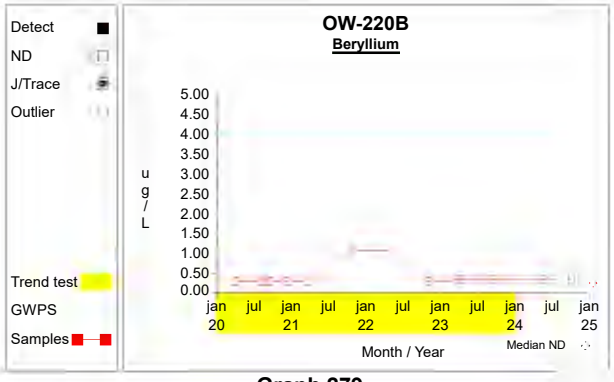
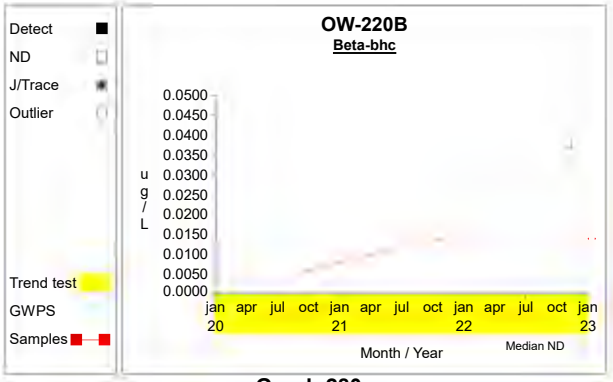
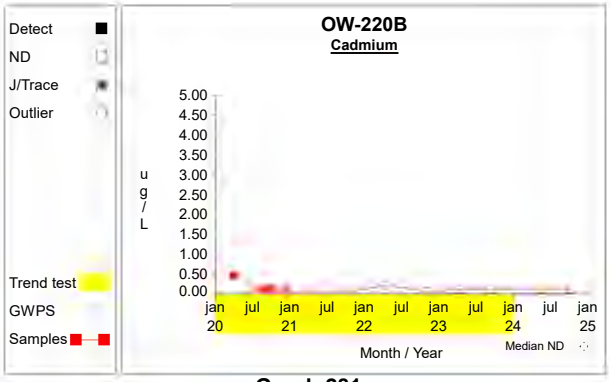


Graph 279

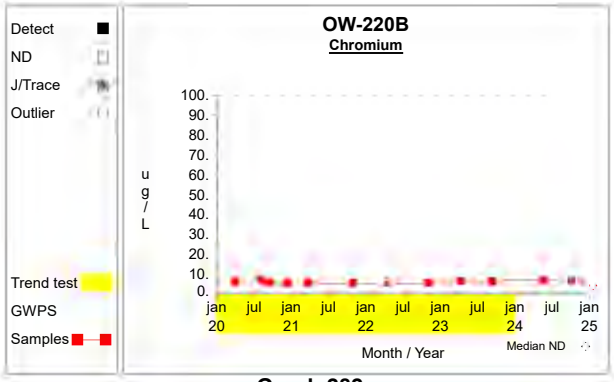
Time Series



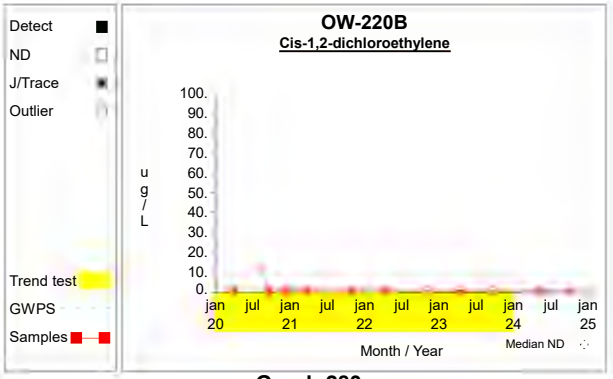
Graph 280



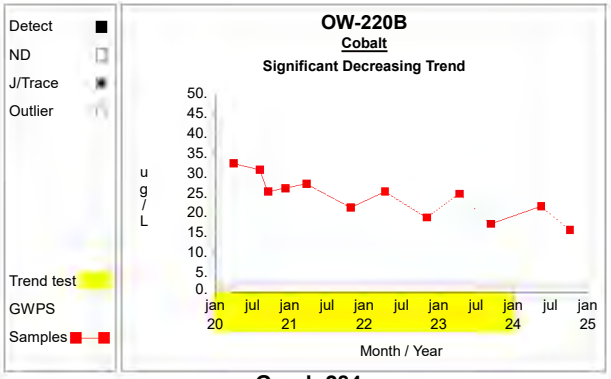
Graph 281



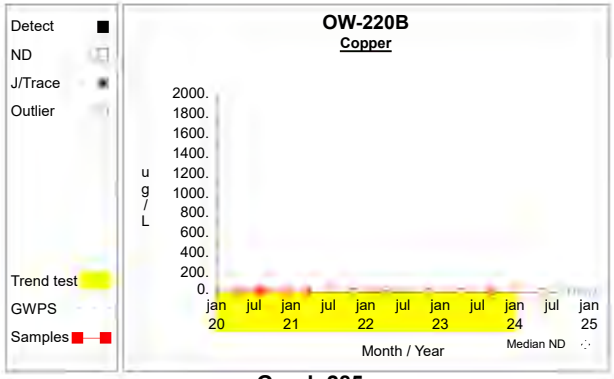
Graph 282



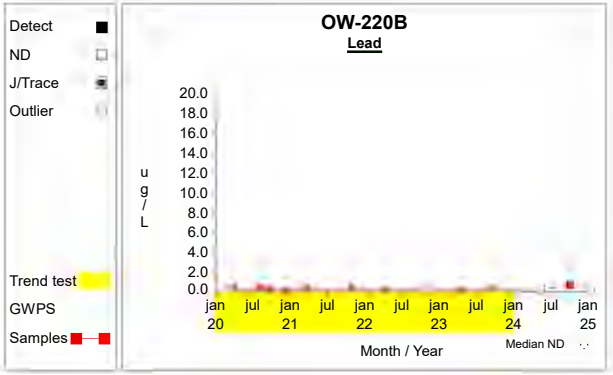
Graph 283



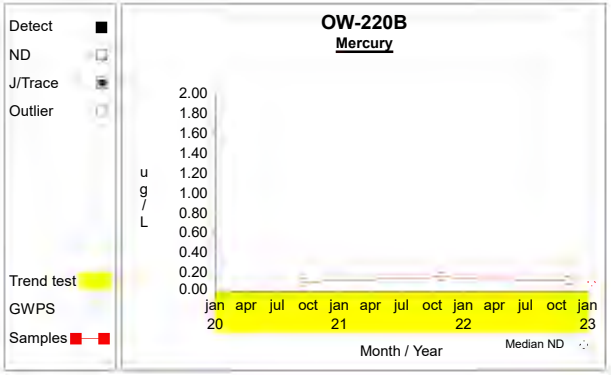
Graph 284



Graph 285



Graph 286



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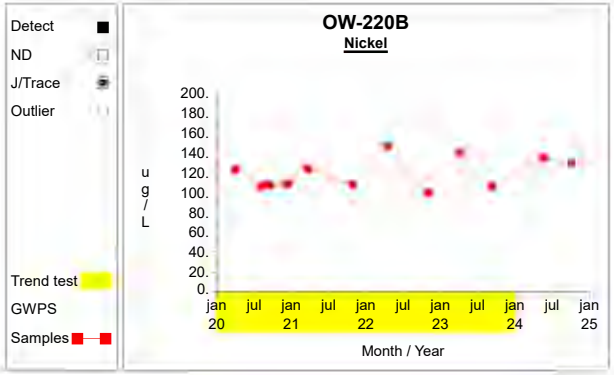
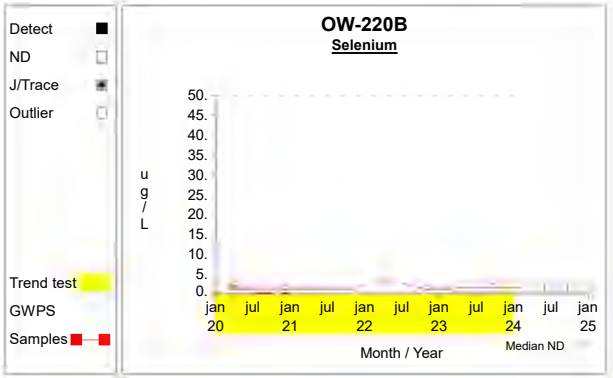


Graph 288

Time Series



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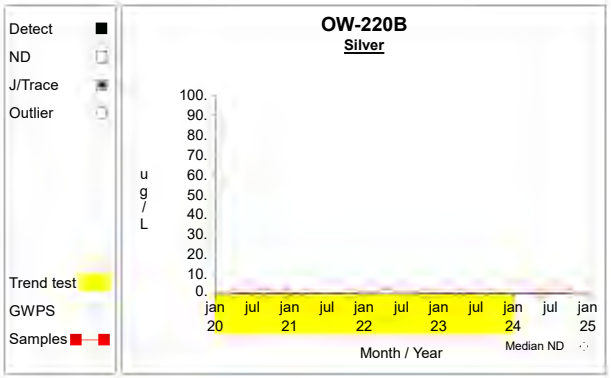

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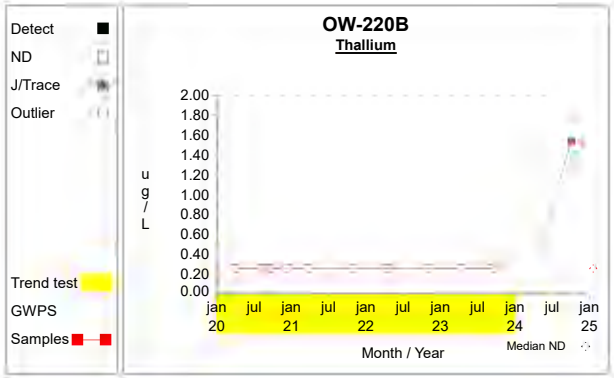

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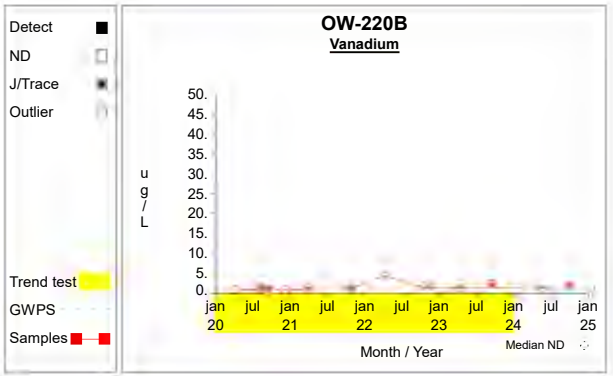
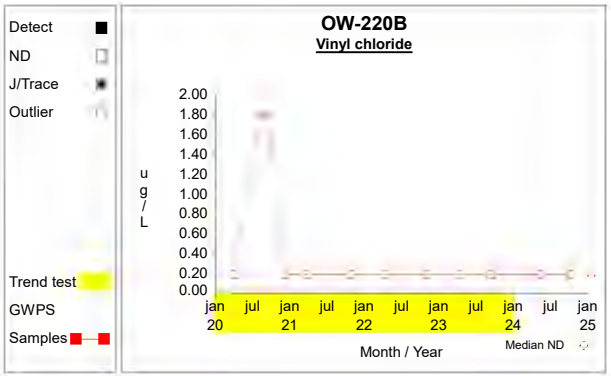
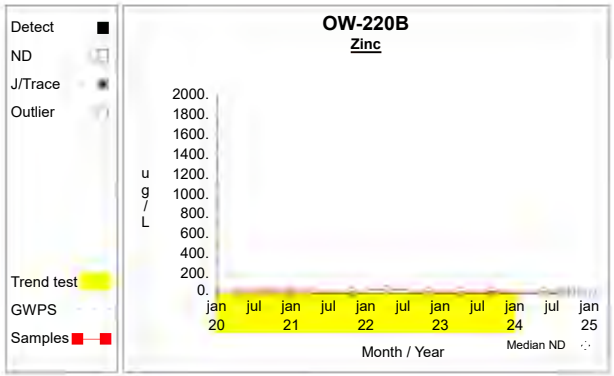


Graph 292



Graph 293



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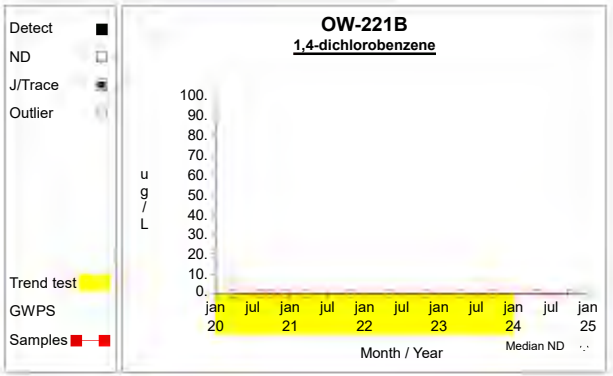

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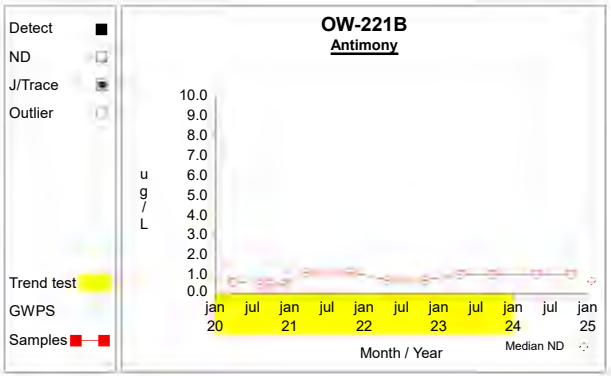

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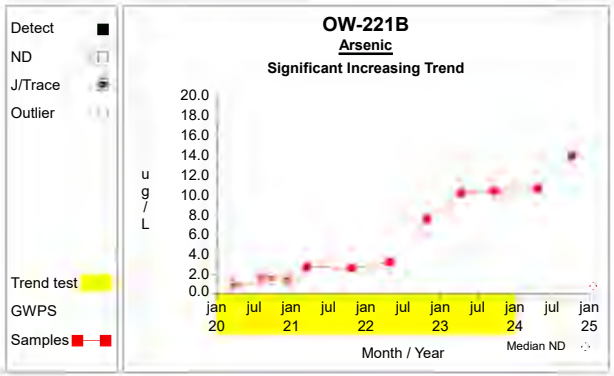
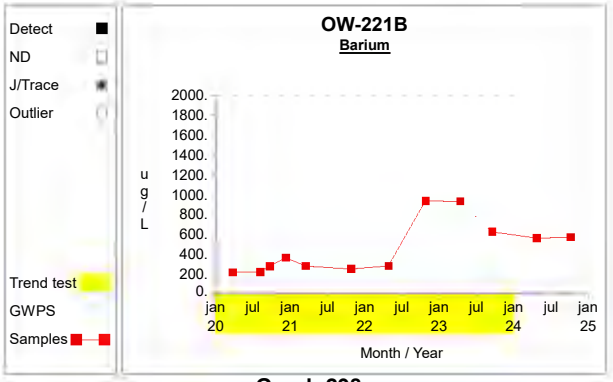
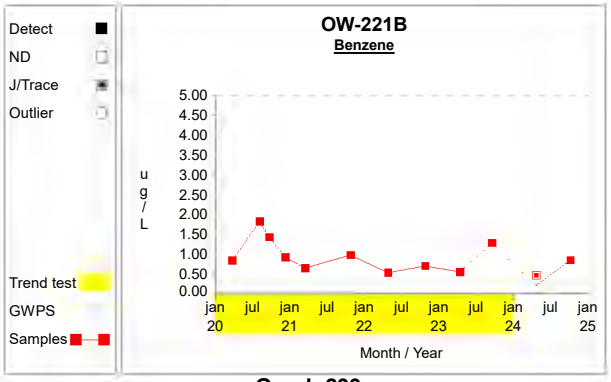


Graph 297

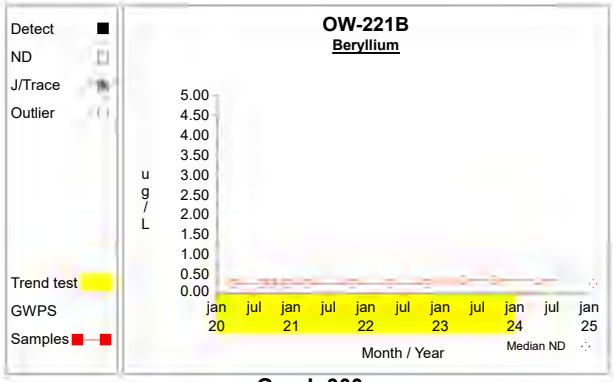
Time Series



Graph 298



Graph 299



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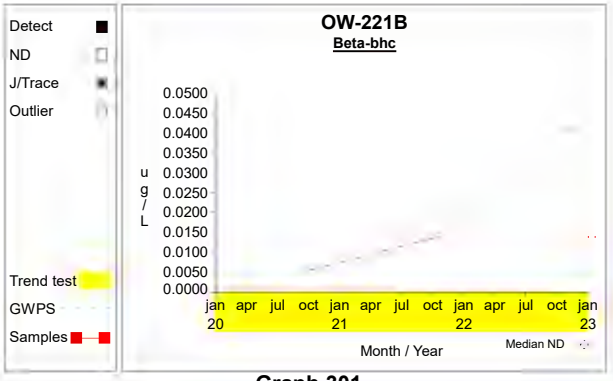
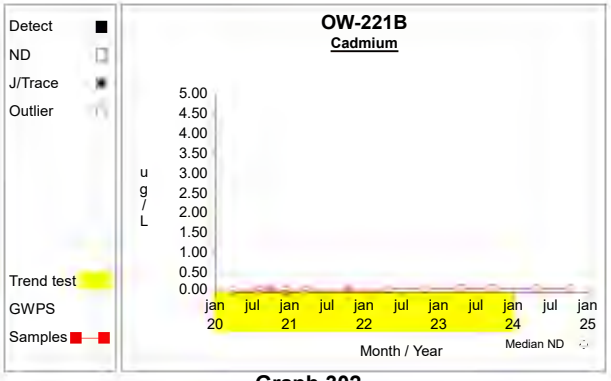


Graph 301



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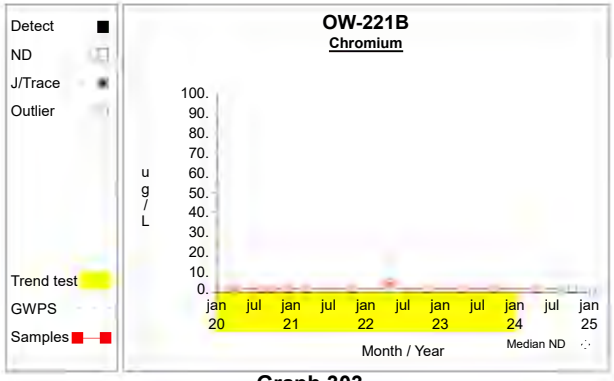
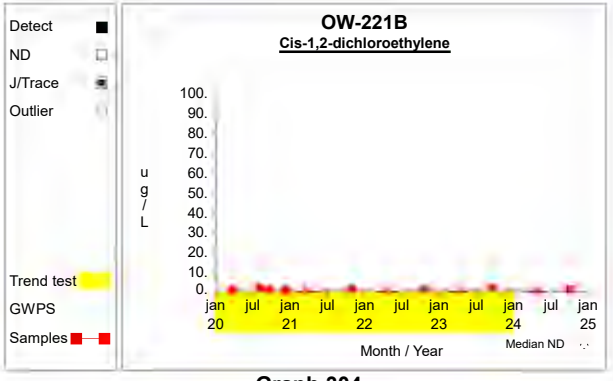


Graph 303



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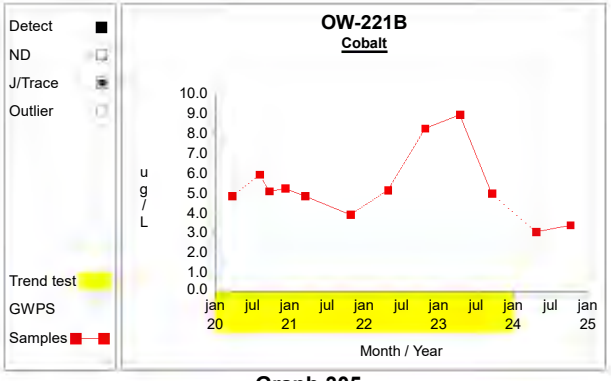

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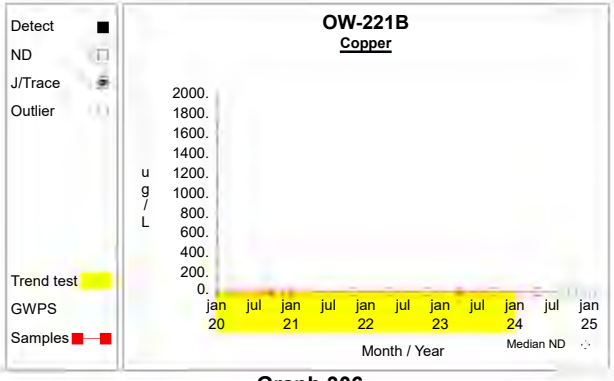
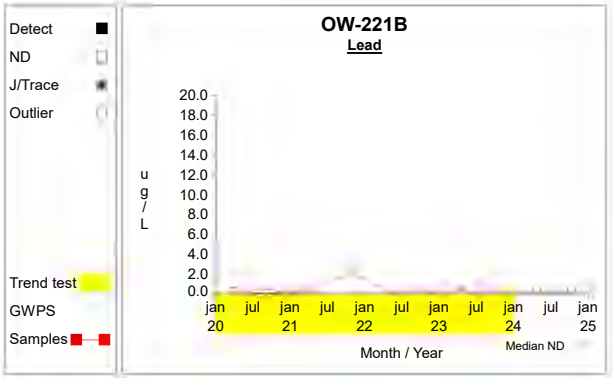
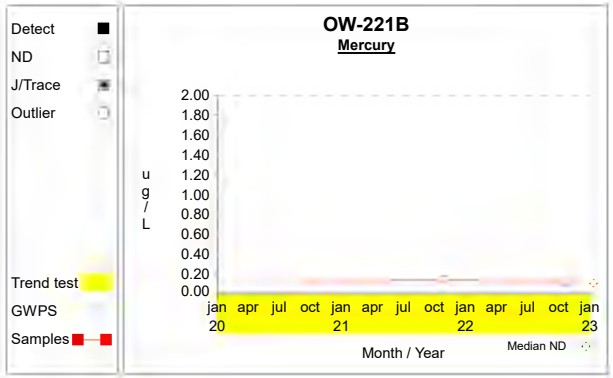


Graph 306

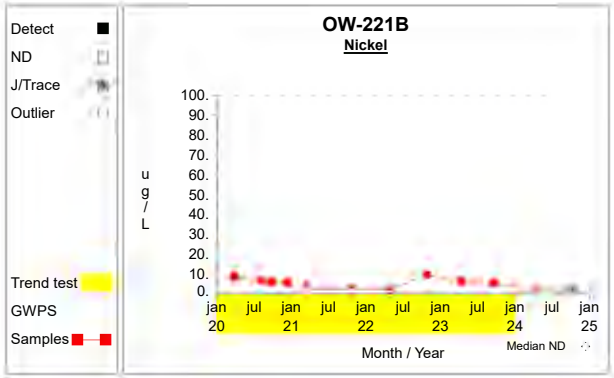
Time Series



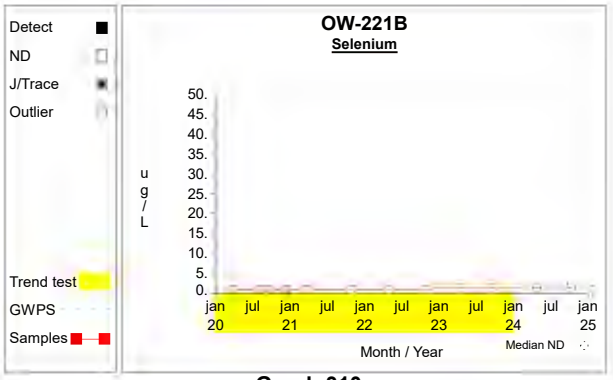
Graph 307



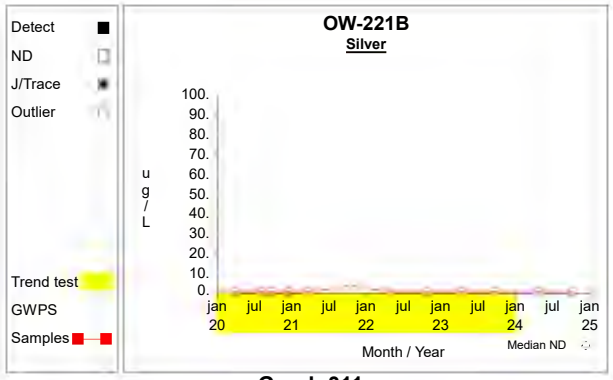
Graph 308



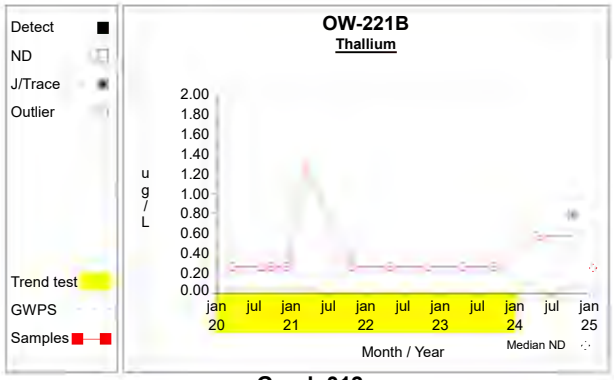
Graph 309



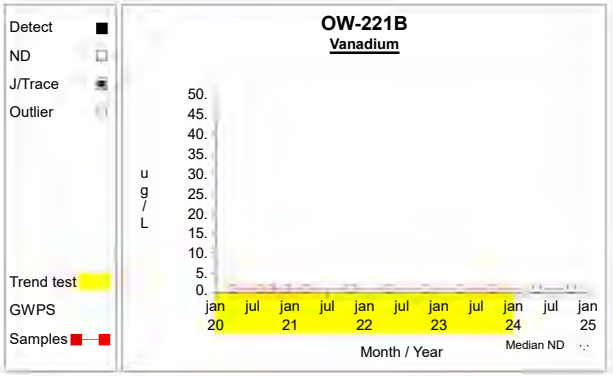
Graph 310



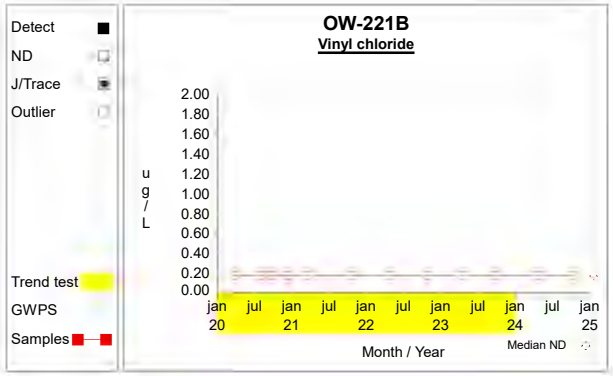
Graph 311



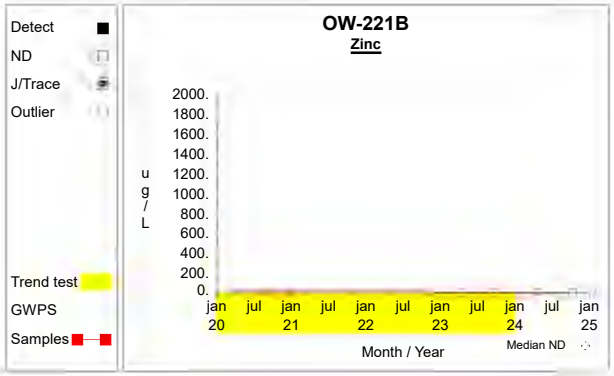
Graph 312



Graph 313

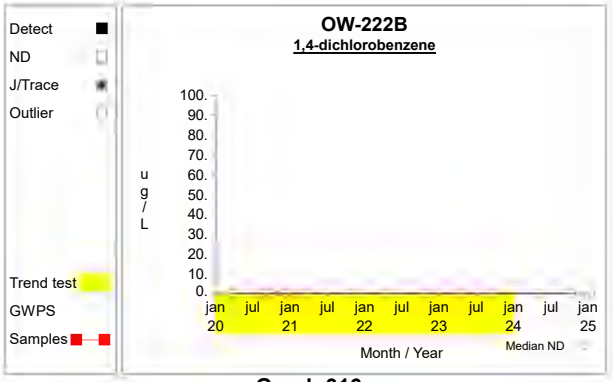


Graph 314

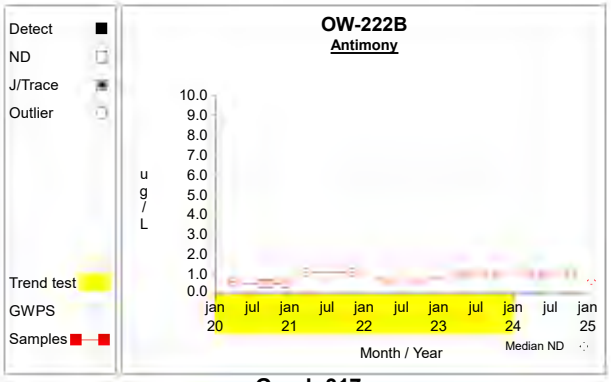


Graph 315

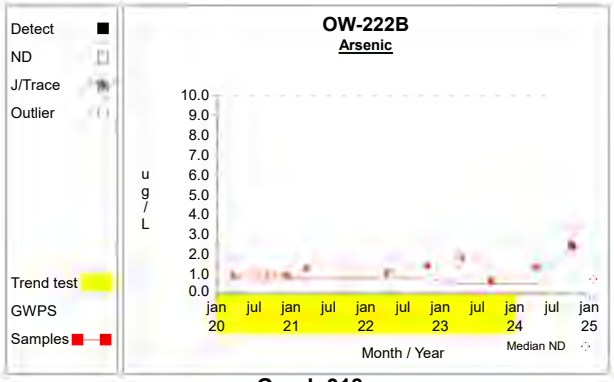
Time Series



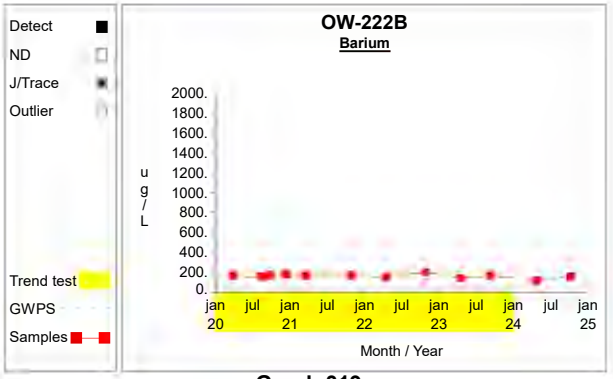
Graph 316



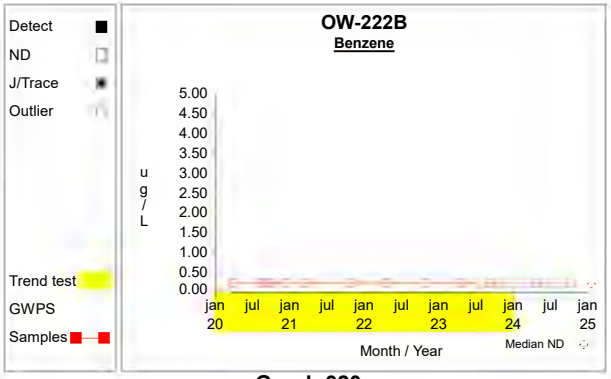
Graph 317



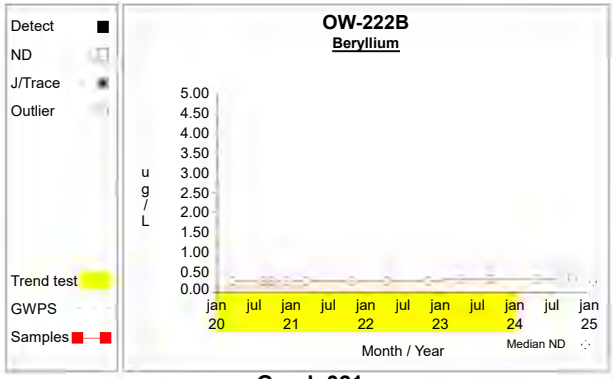
Graph 318



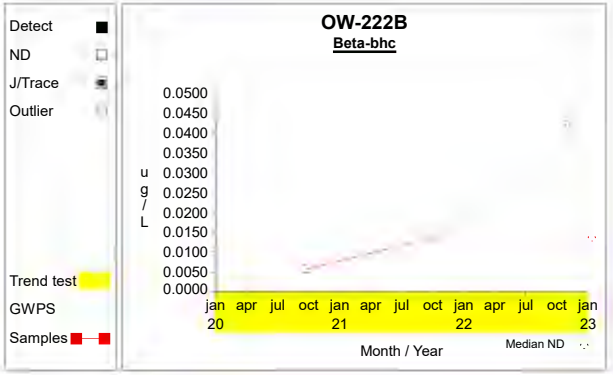
Graph 319



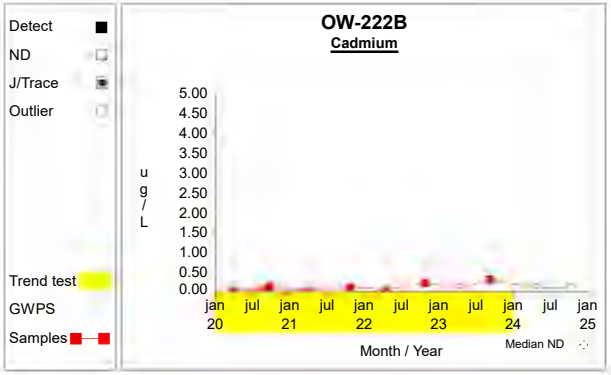
Graph 320



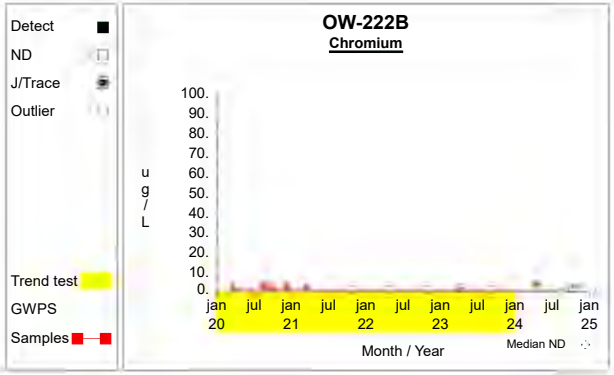
Graph 321



Graph 322

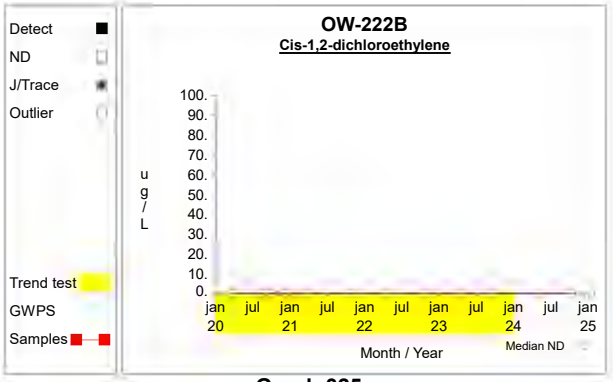


Graph 323

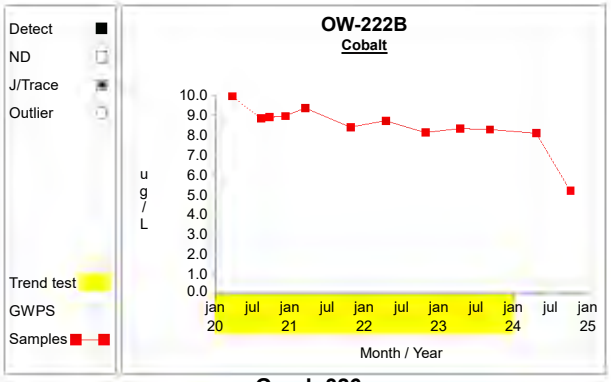


Graph 324

Time Series



Graph 325



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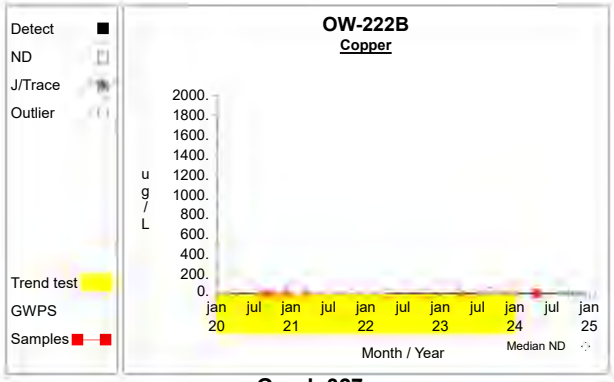
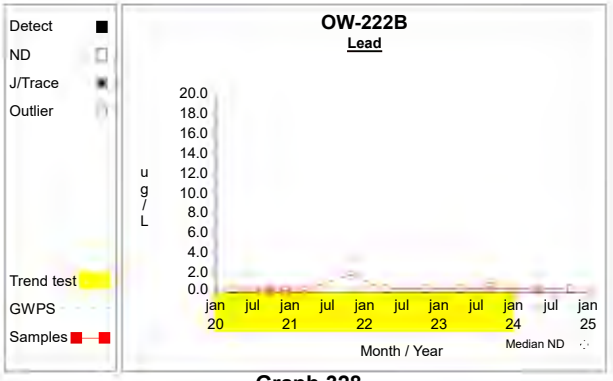
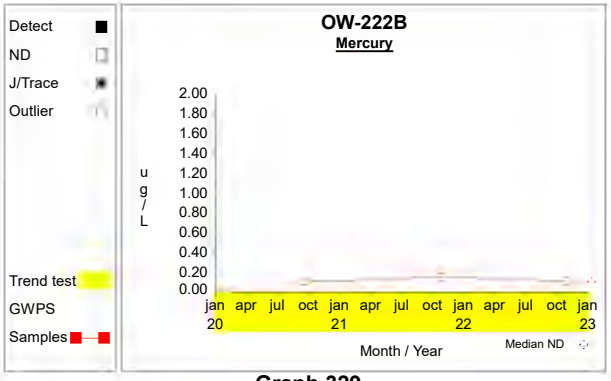


Graph 327



Graph 328



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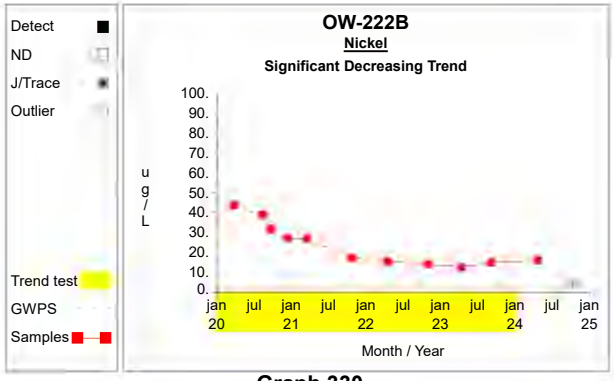

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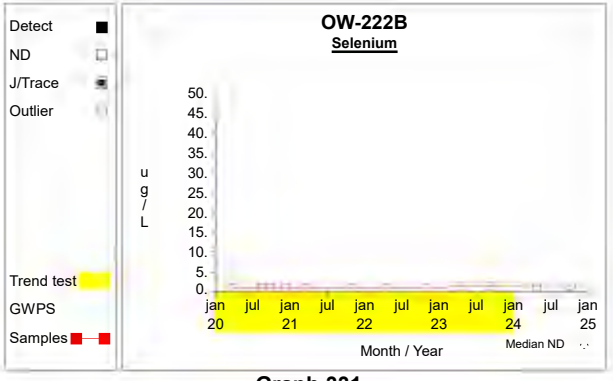

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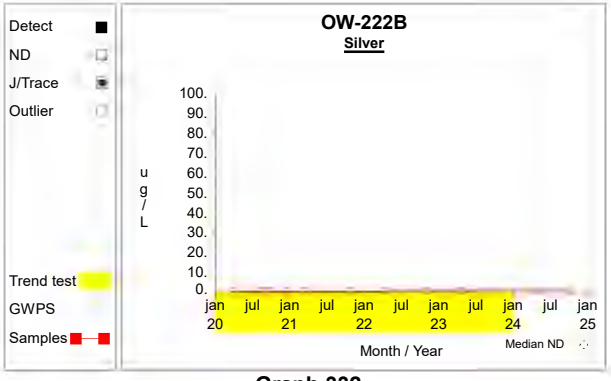

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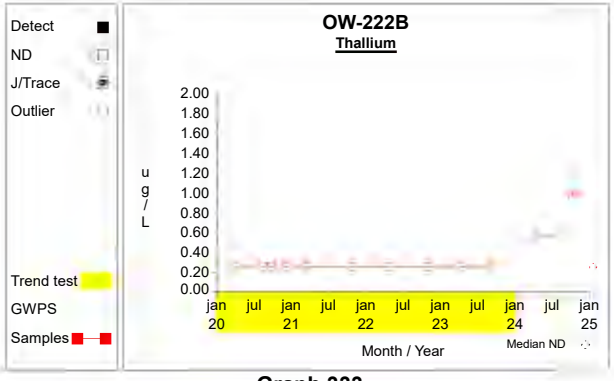
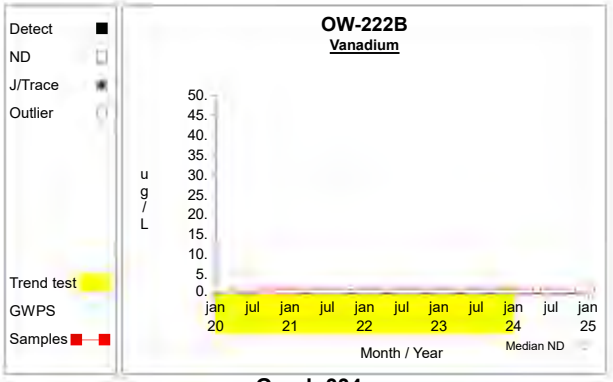
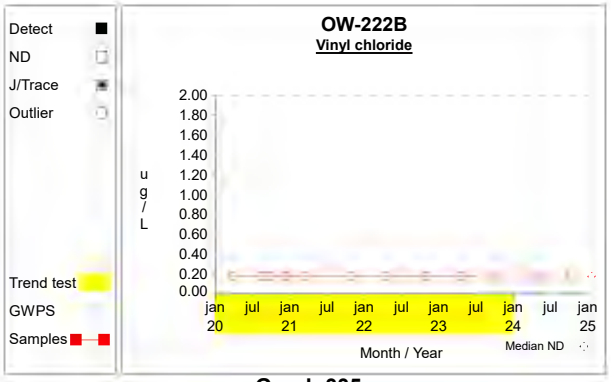


Graph 333

Time Series



Graph 334



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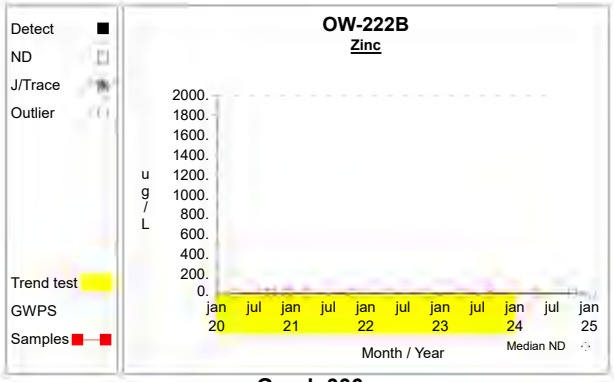

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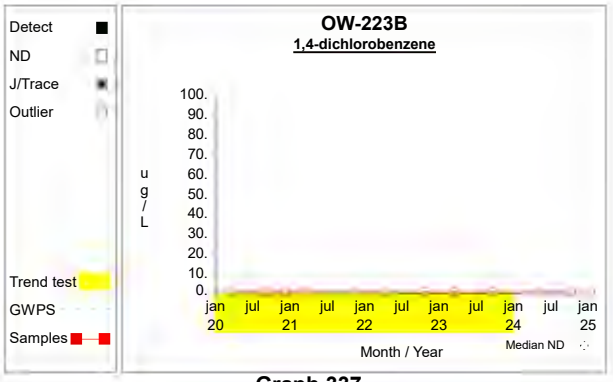

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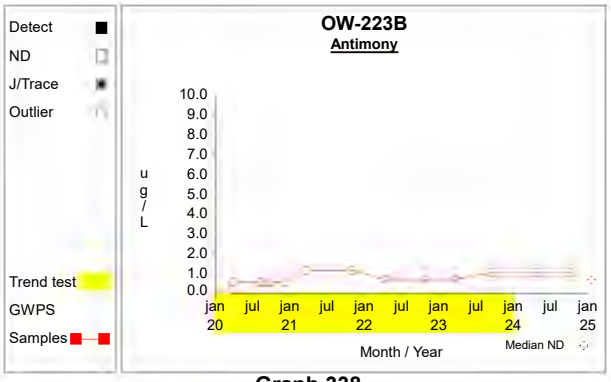
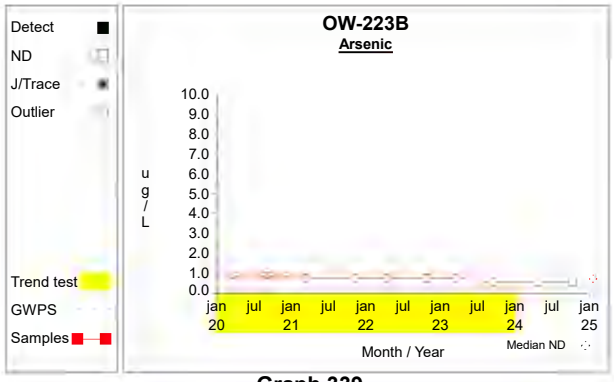
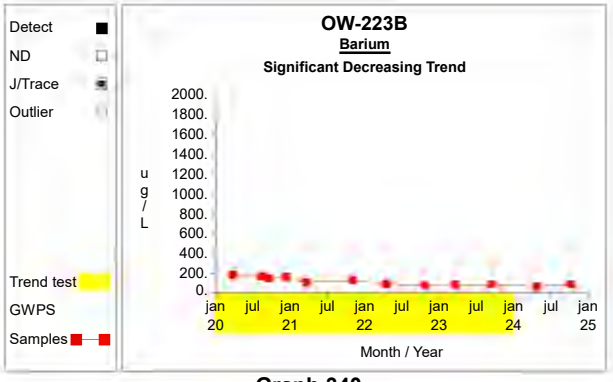


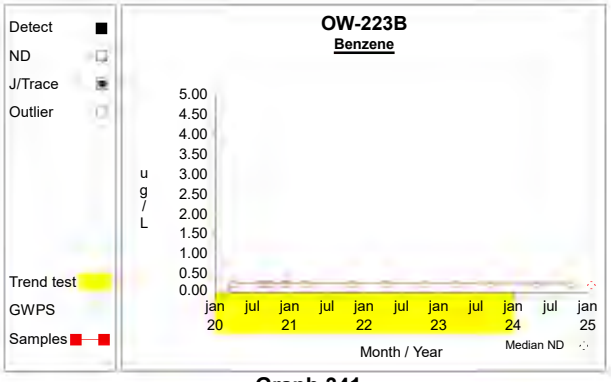
Graph 338



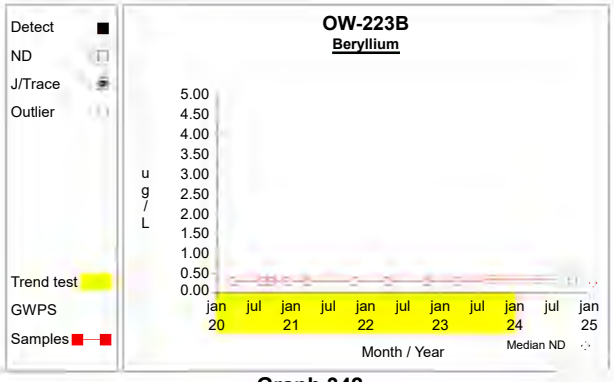
Graph 339



Graph 340

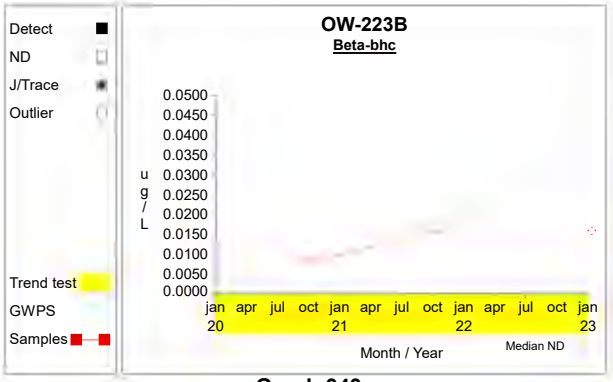


Graph 341



Graph 342

Time Series



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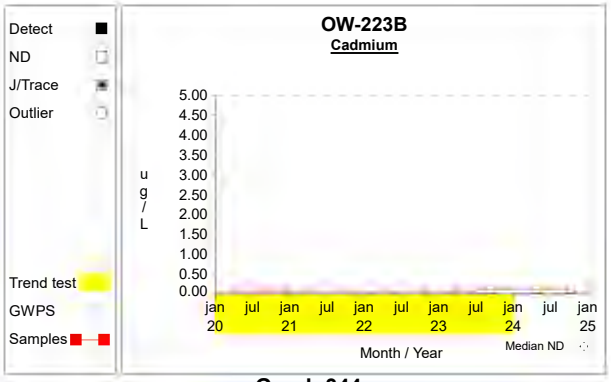

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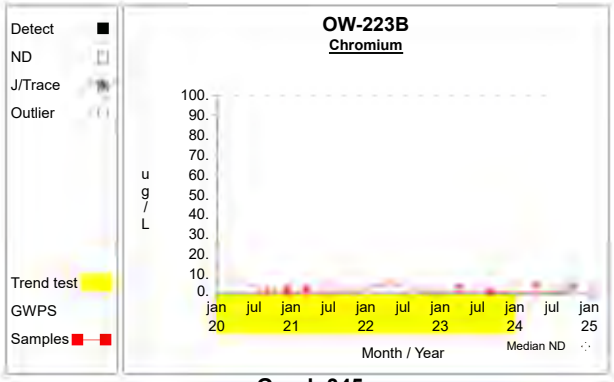
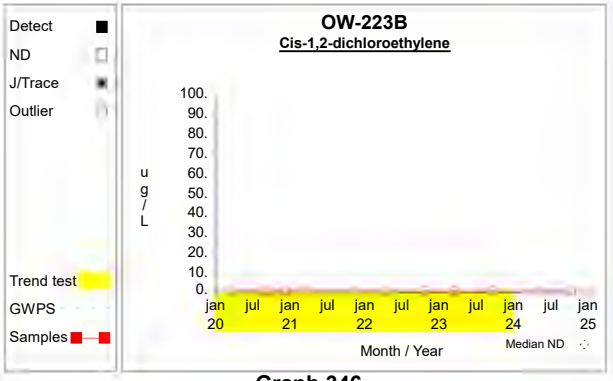
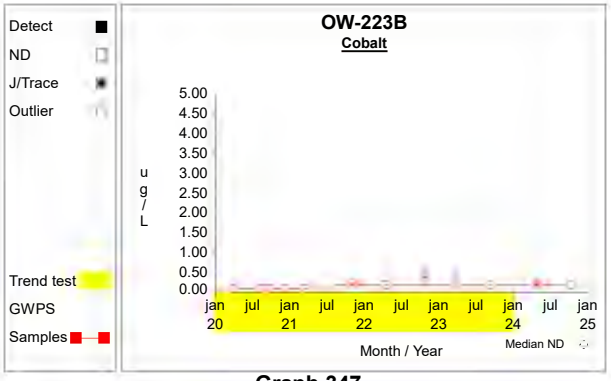


Graph 345



Graph 346



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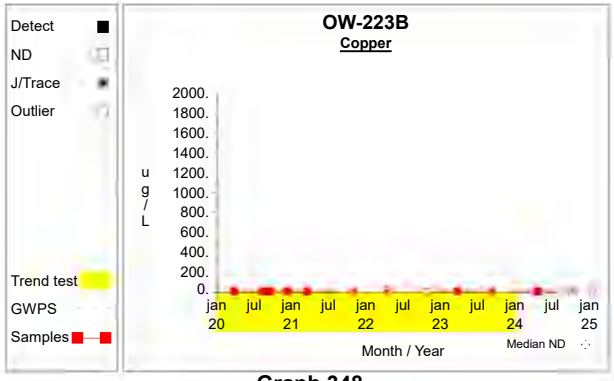

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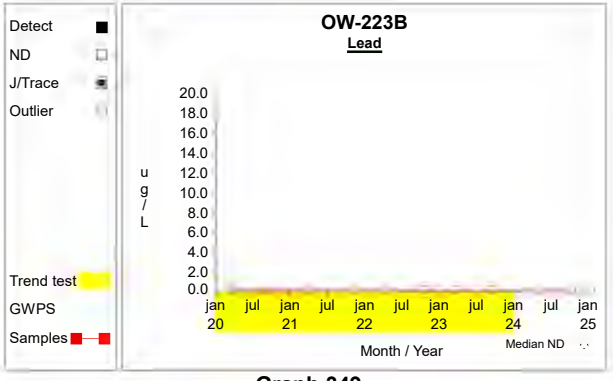

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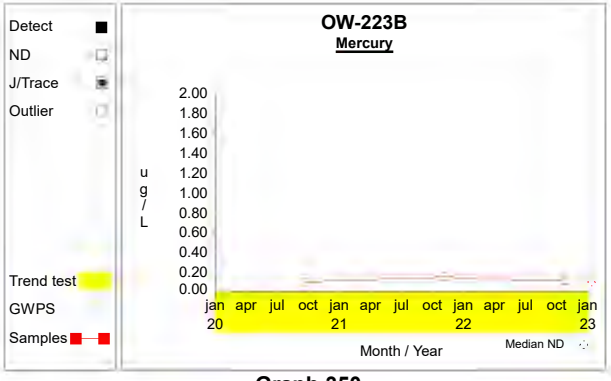

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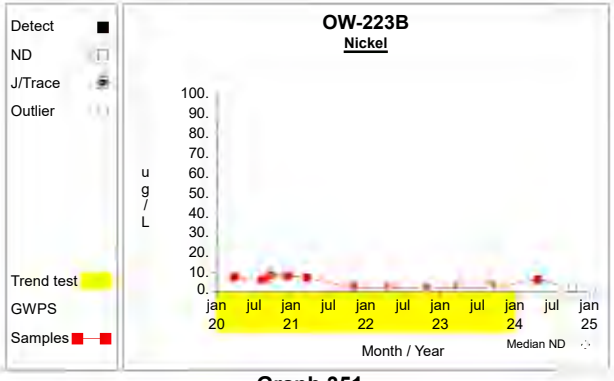
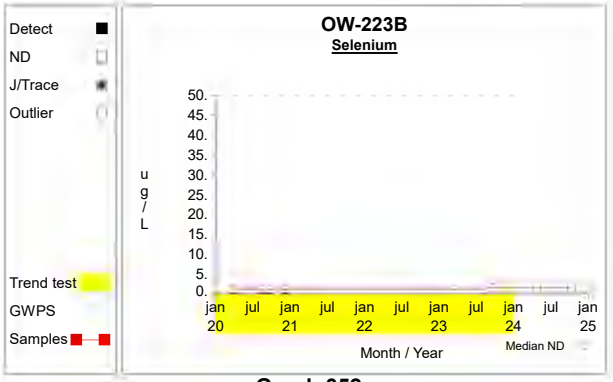
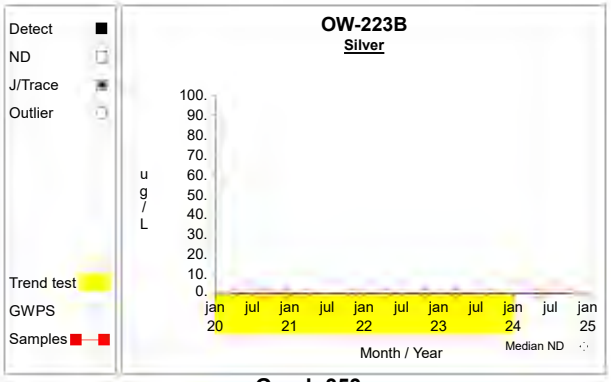


Graph 351

Time Series



Graph 352



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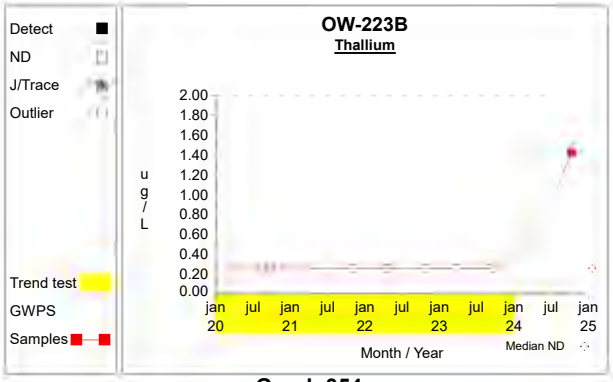
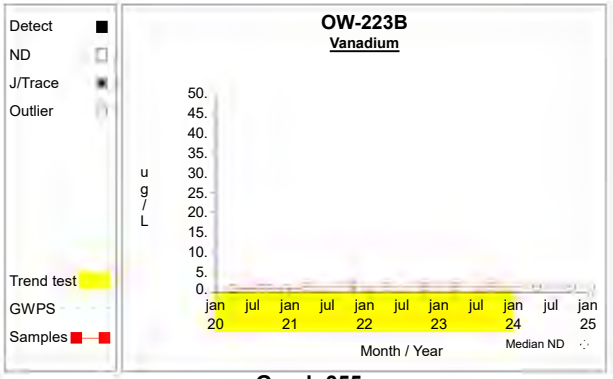
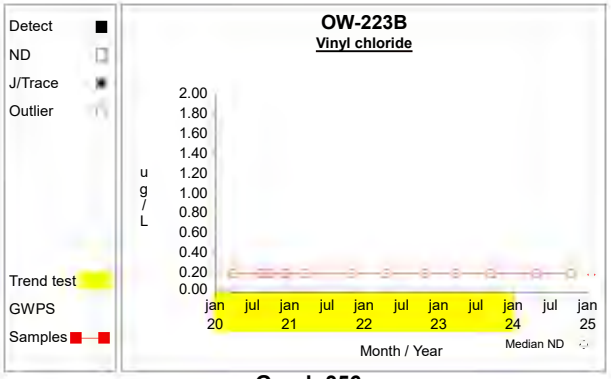


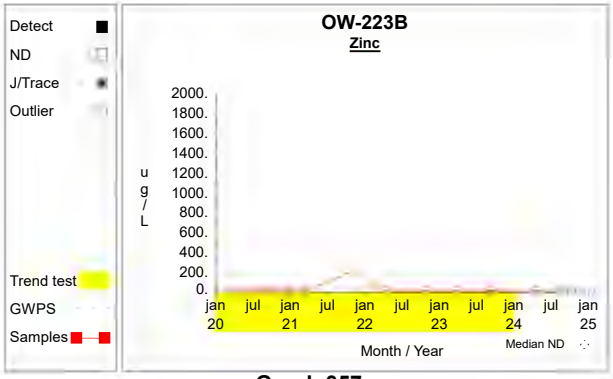
Graph 354



Graph 355



Graph 356



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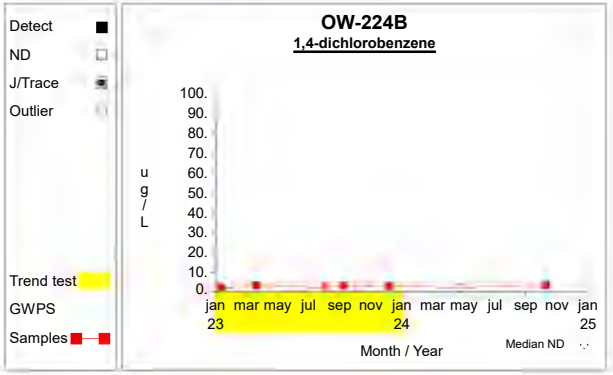
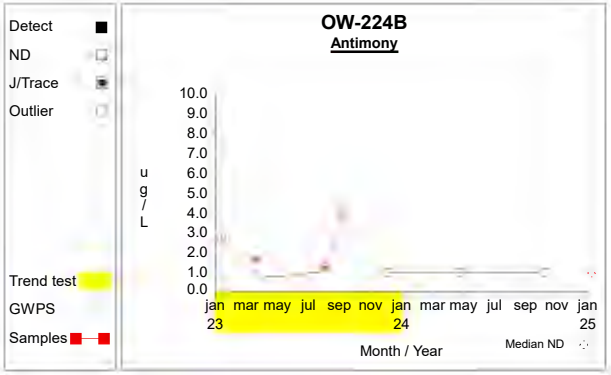
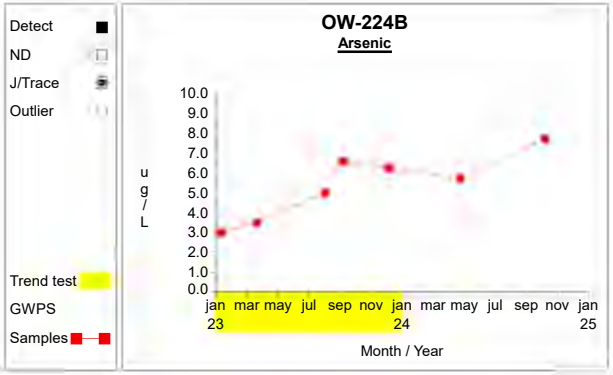


Graph 358

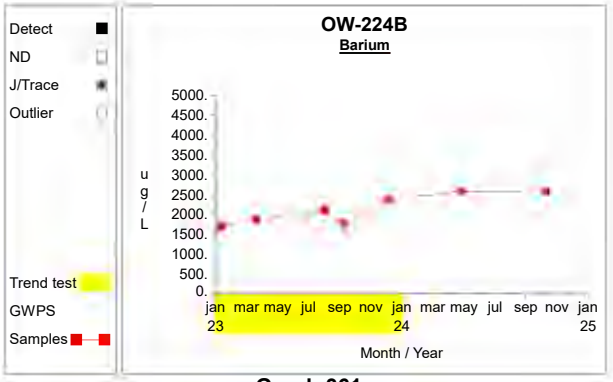


Graph 359

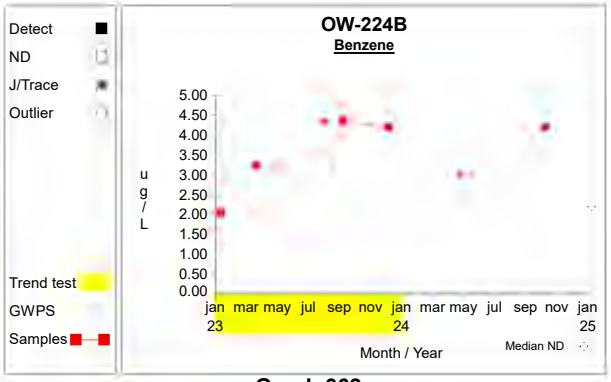


Graph 360

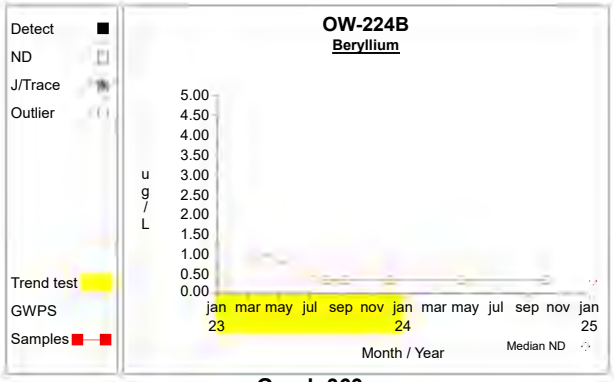
Time Series



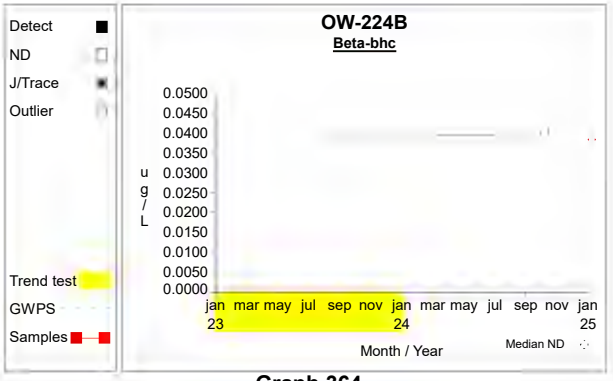
Graph 361



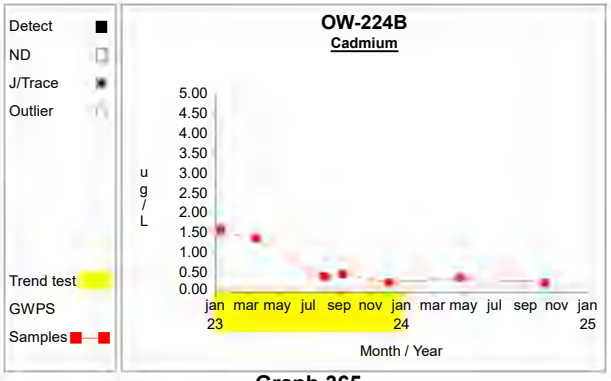
Graph 362



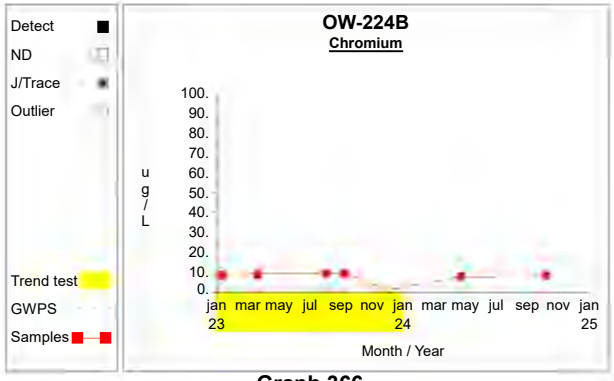
Graph 363



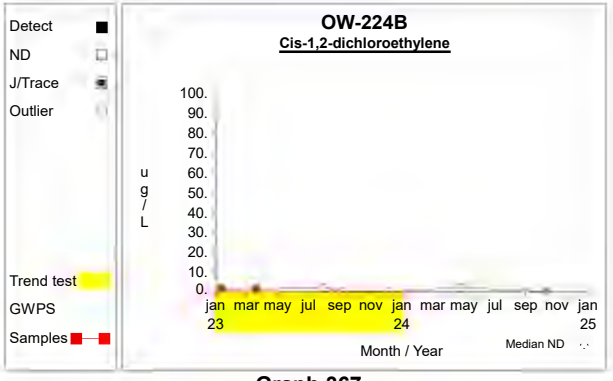
Graph 364



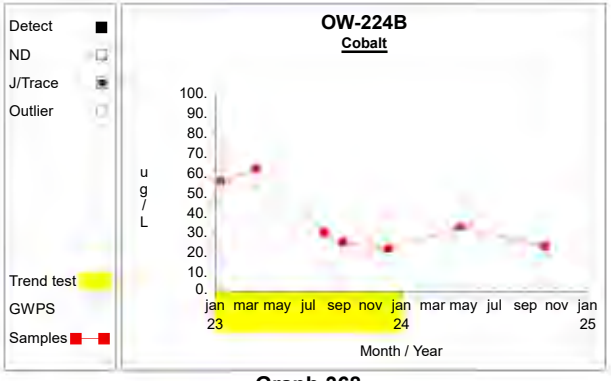
Graph 365



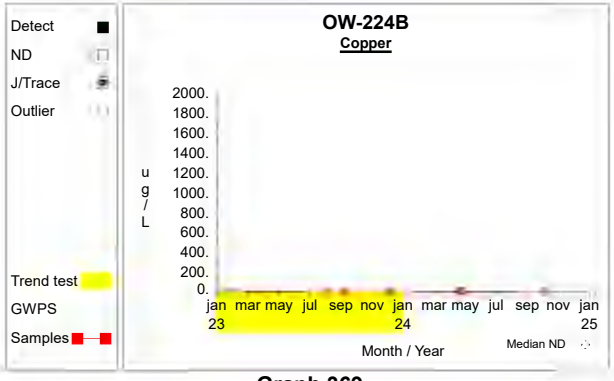
Graph 366



Graph 367

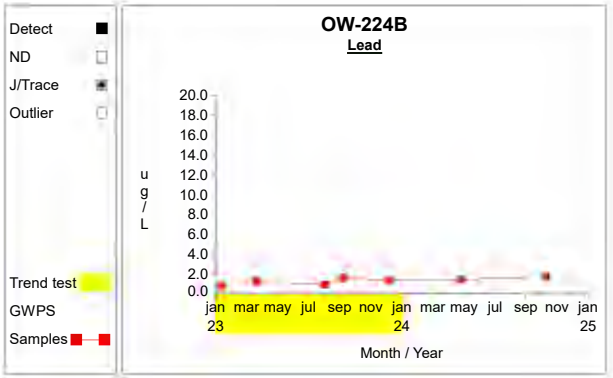


Graph 368

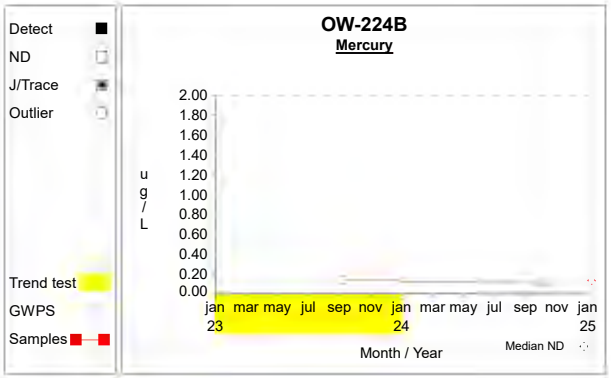


Graph 369

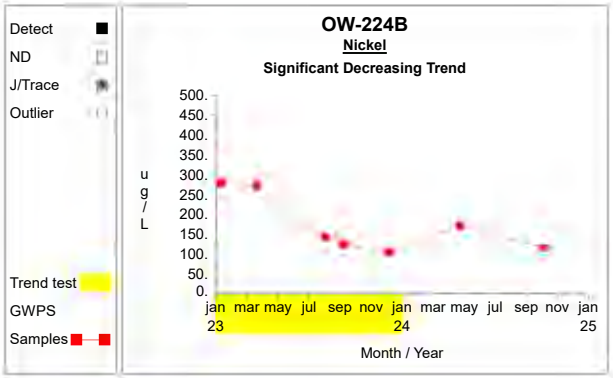
Time Series



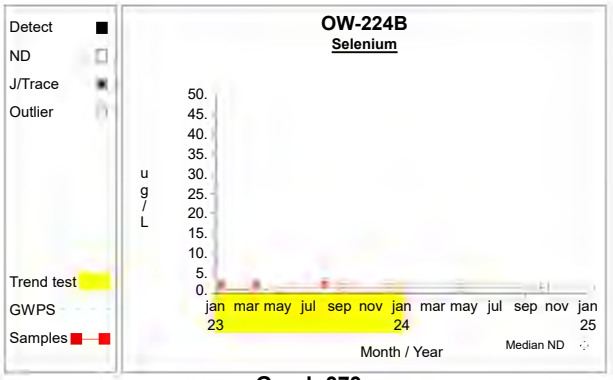
Graph 370



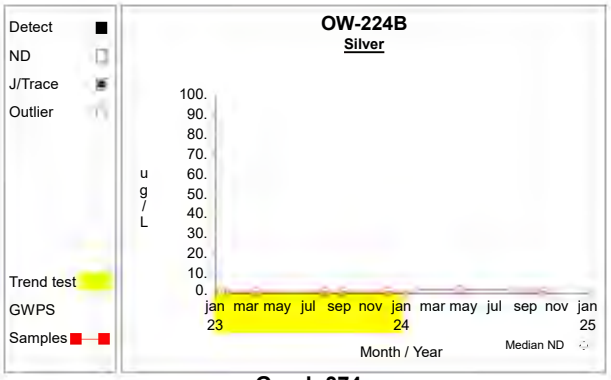
Graph 371



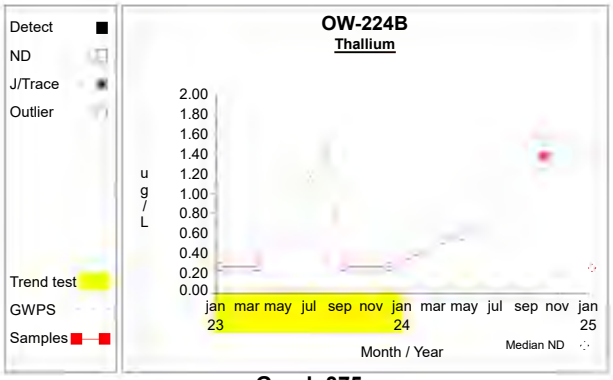
Graph 372



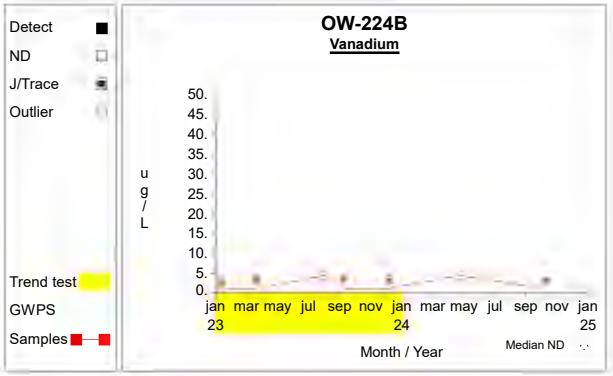
Graph 373



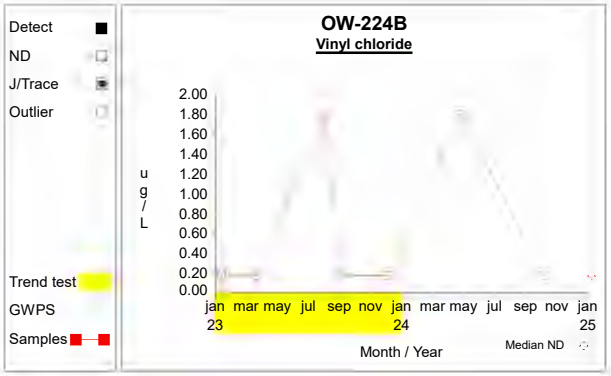
Graph 374



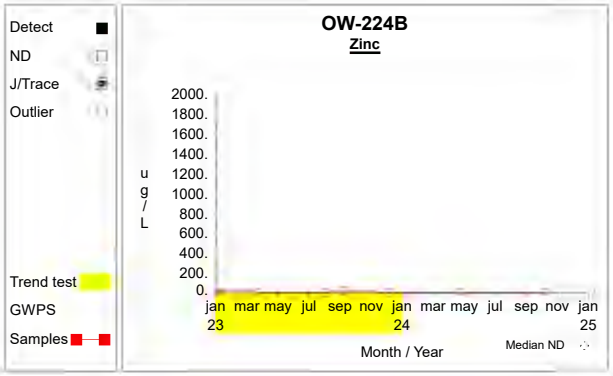
Graph 375



Graph 376

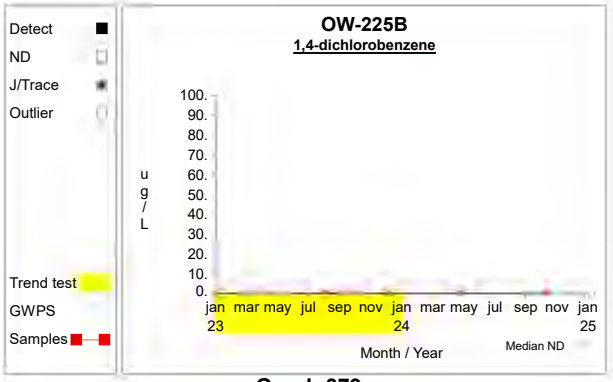


Graph 377

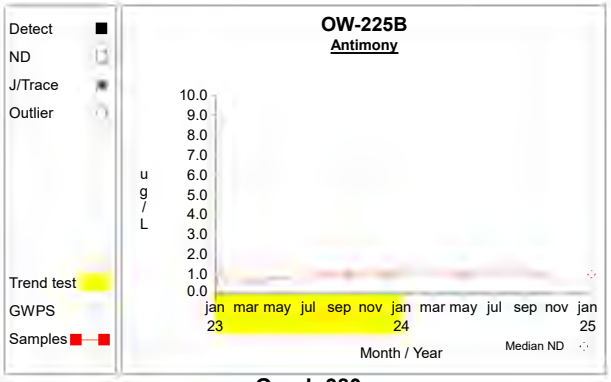


Graph 378

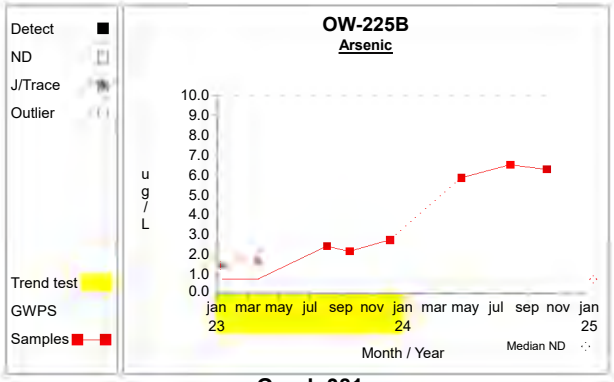
Time Series



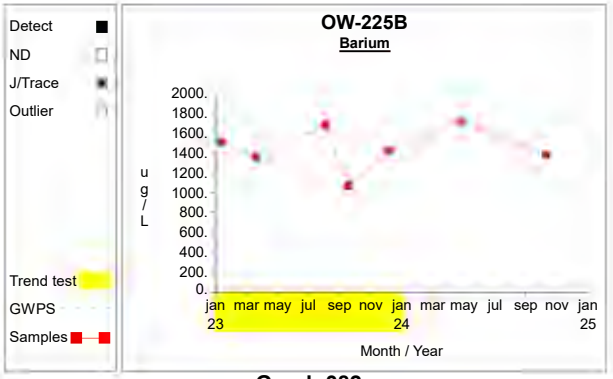
Graph 379



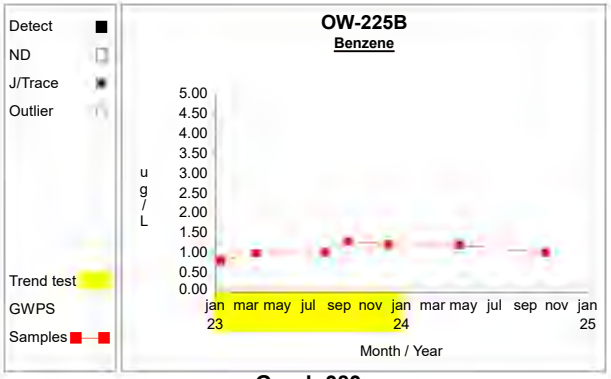
Graph 380



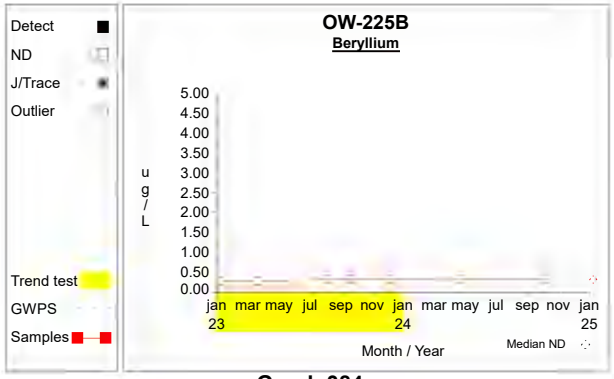
Graph 381



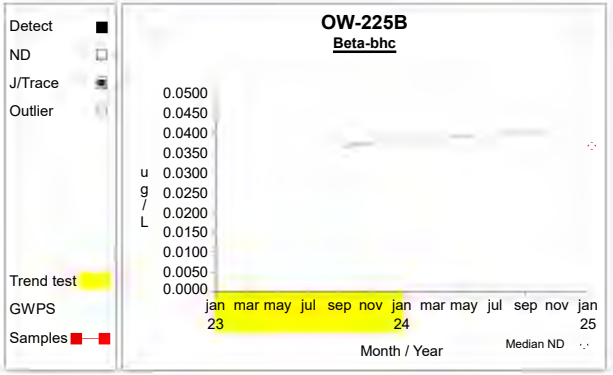
Graph 382



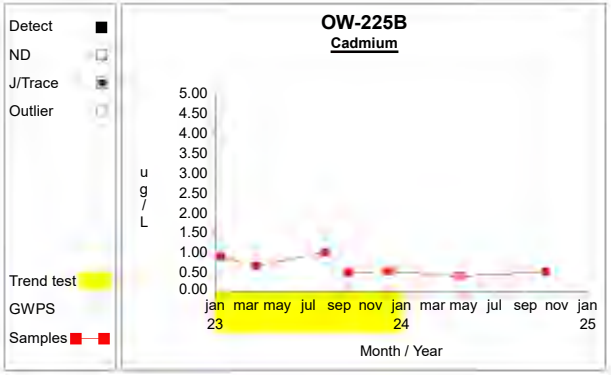
Graph 383



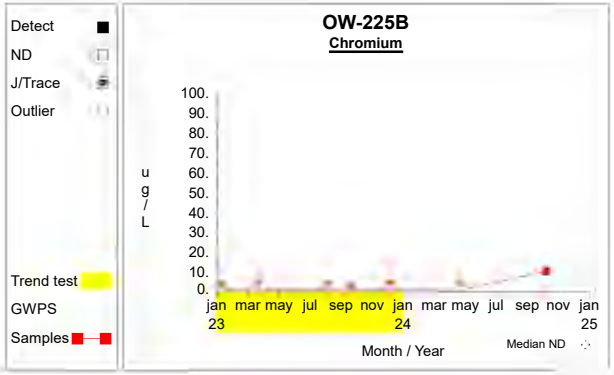
Graph 384



Graph 385

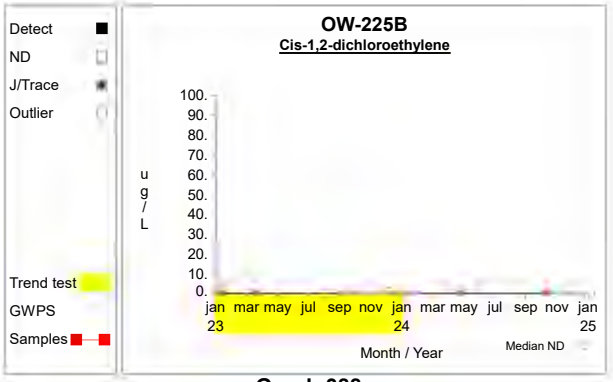


Graph 386

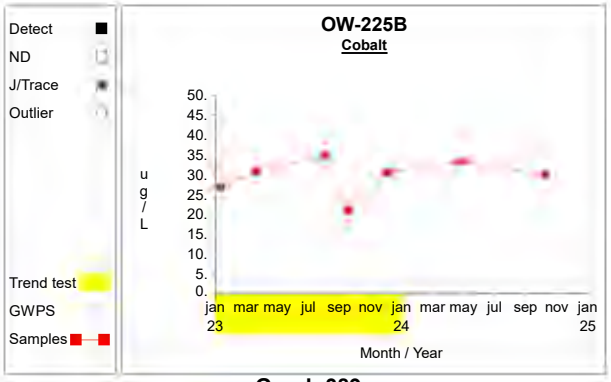


Graph 387

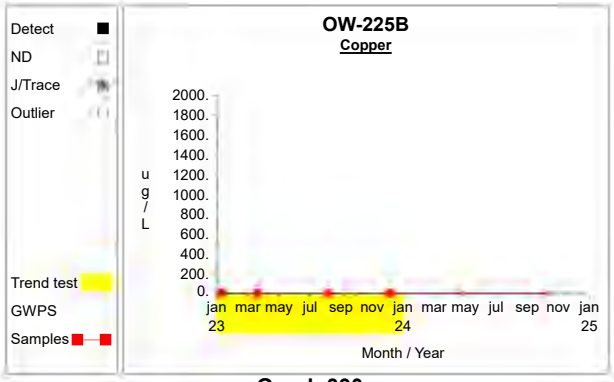
Time Series



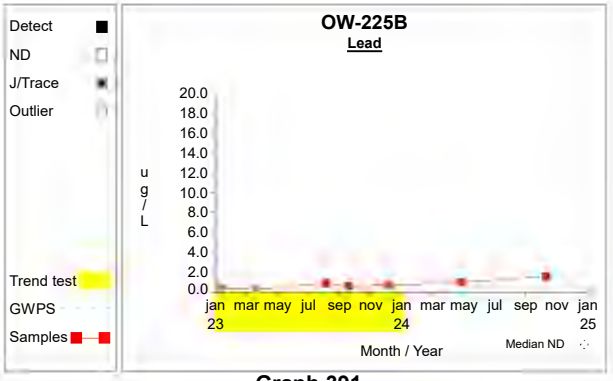
Graph 388



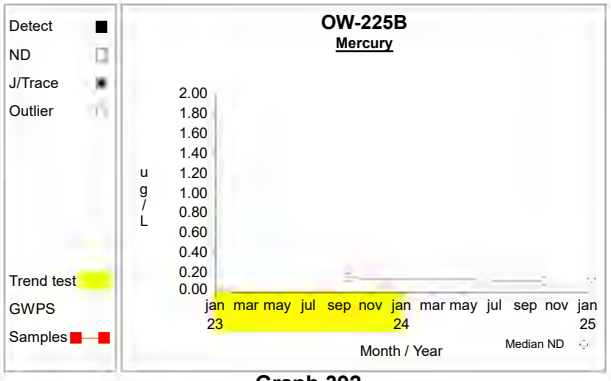
Graph 389



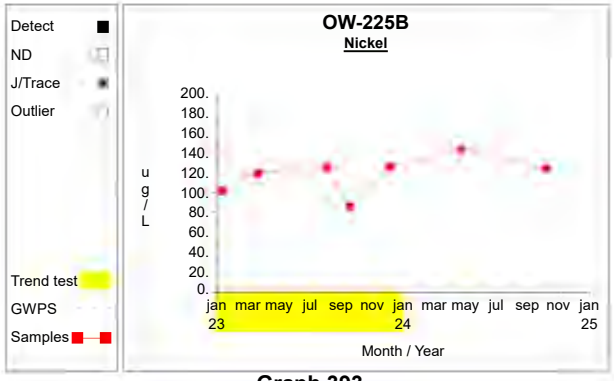
Graph 390



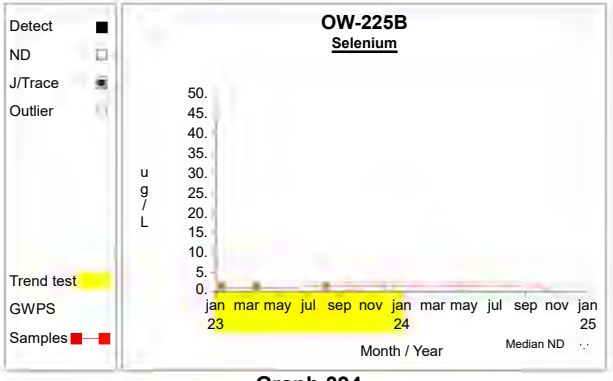
Graph 391



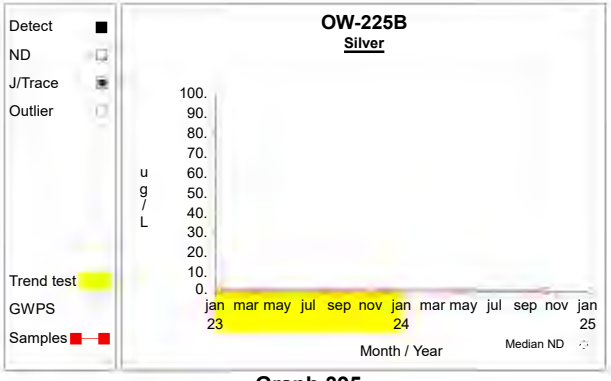
Graph 392



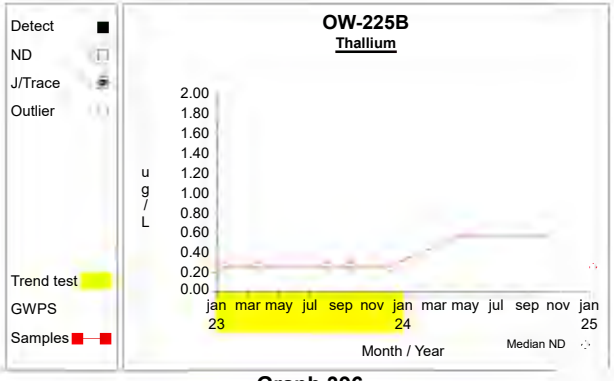
Graph 393



Graph 394

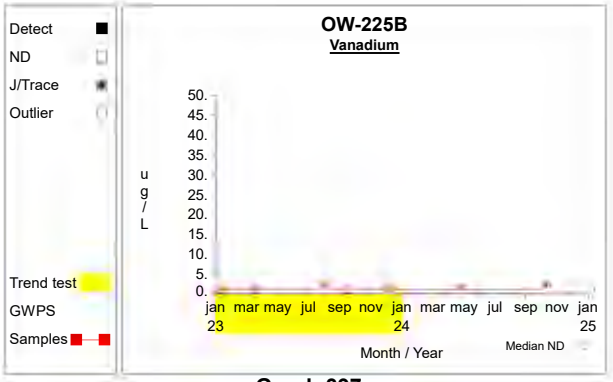


Graph 395

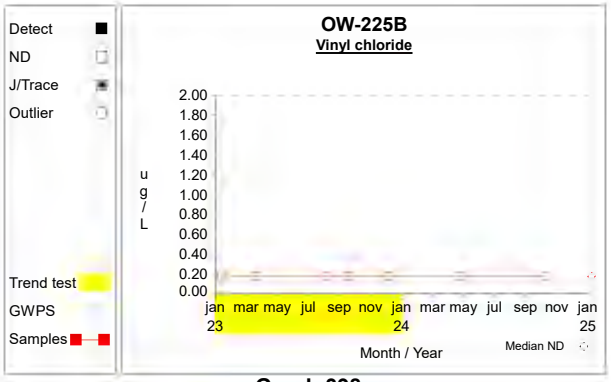


Graph 396

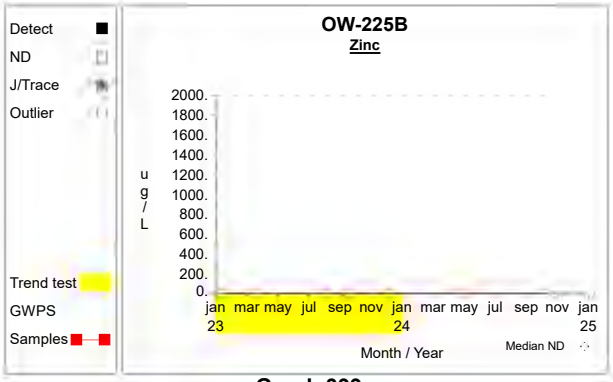
Time Series



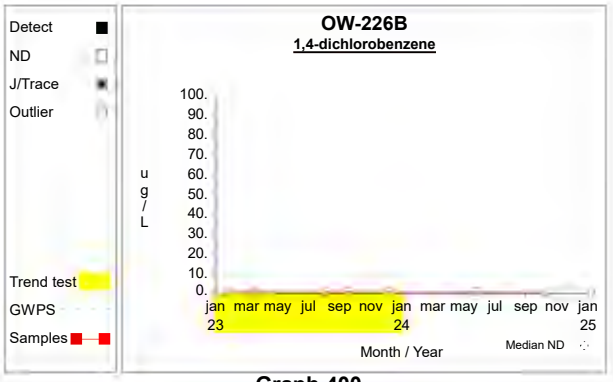
Graph 397



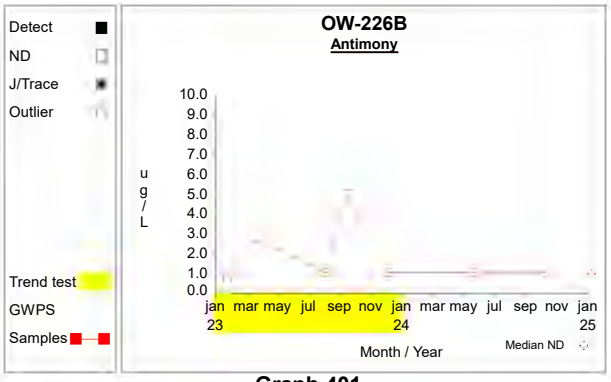
Graph 398



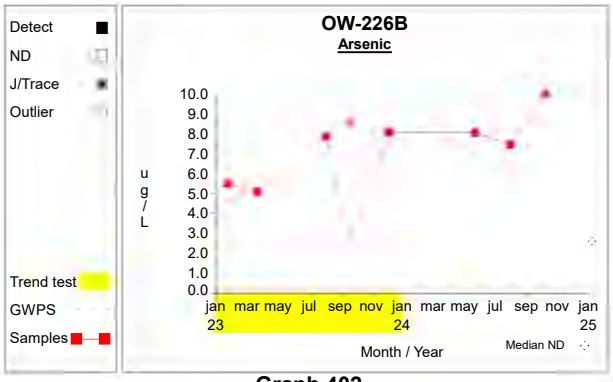
Graph 399



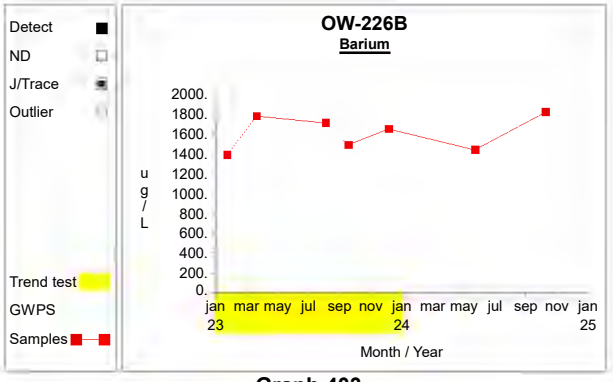
Graph 400



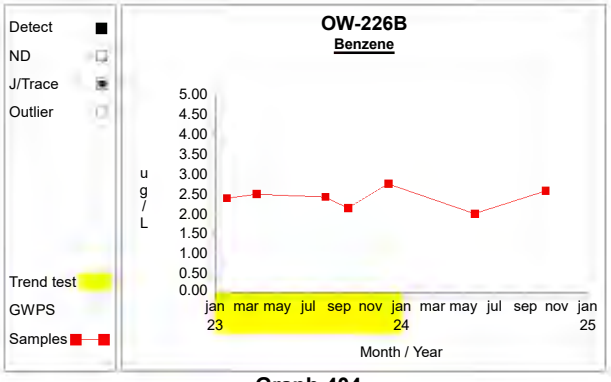
Graph 401



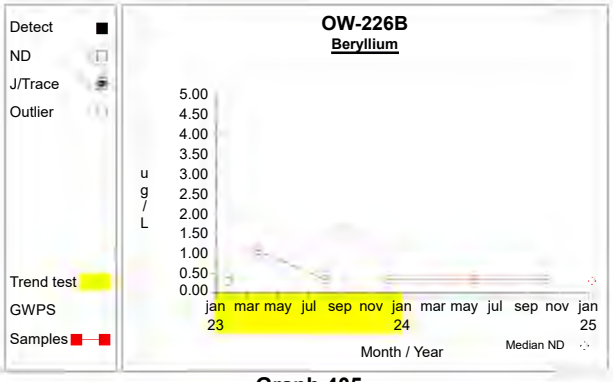
Graph 402



Graph 403

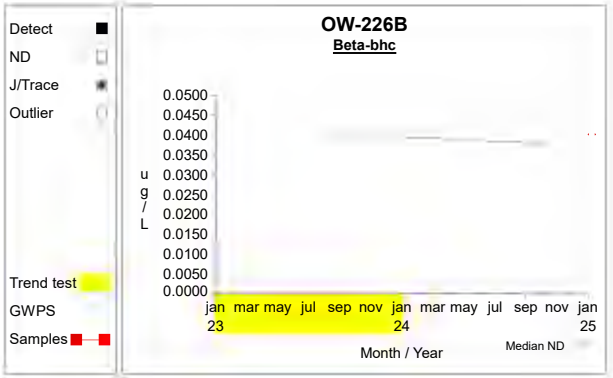


Graph 404

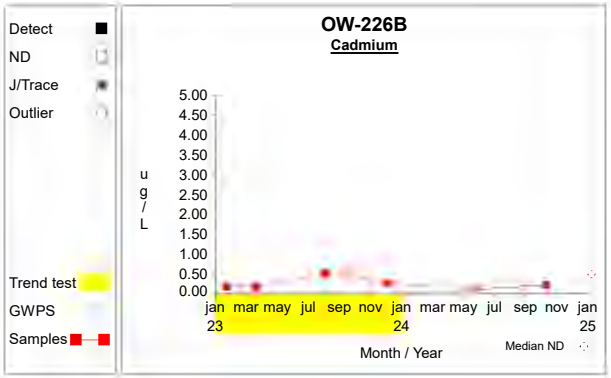


Graph 405

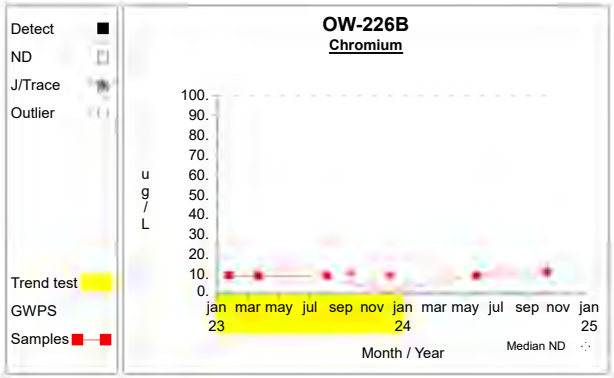
Time Series



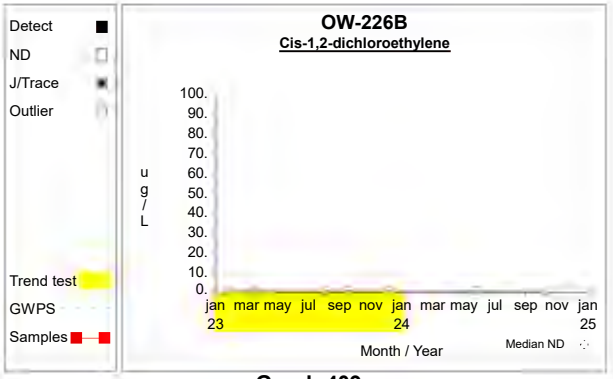
Graph 406



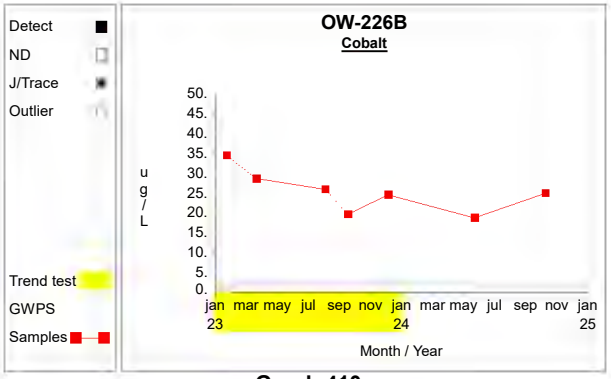
Graph 407



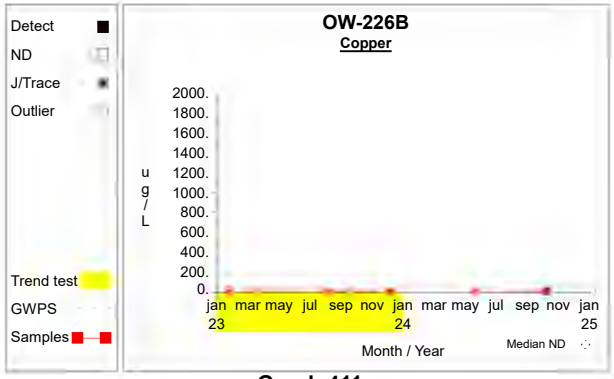
Graph 408



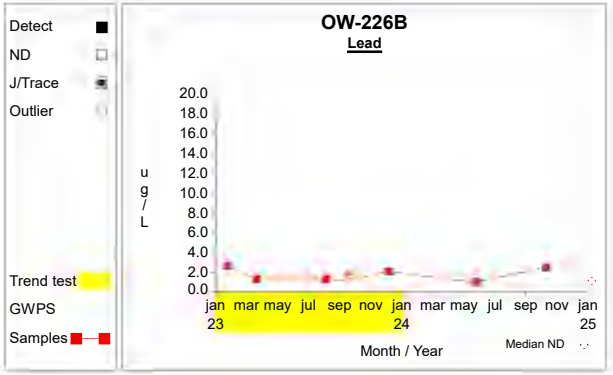
Graph 409



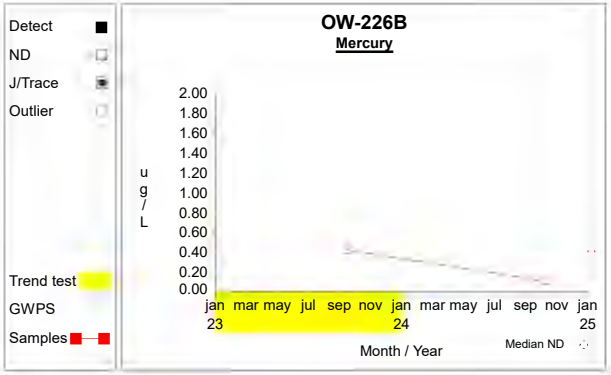
Graph 410



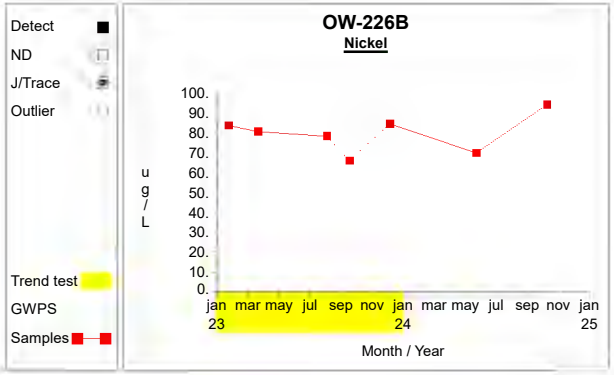
Graph 411



Graph 412

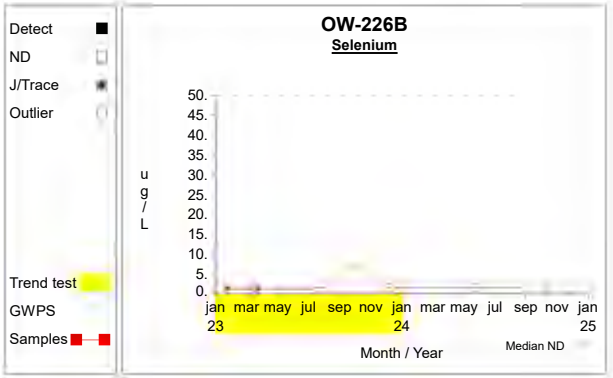


Graph 413

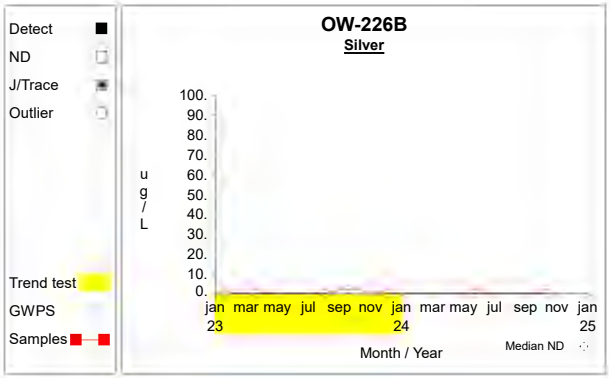


Graph 414

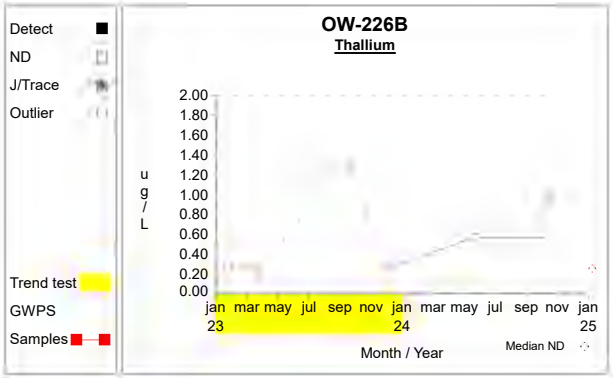
Time Series



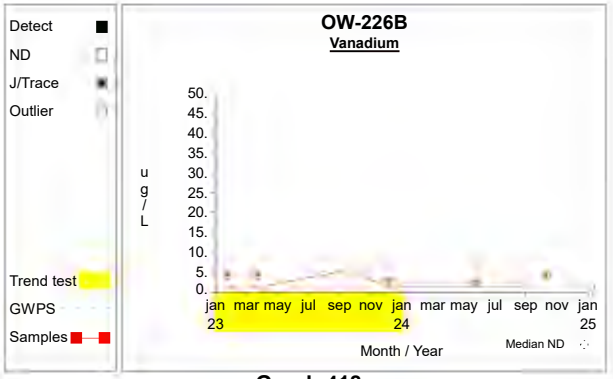
Graph 415



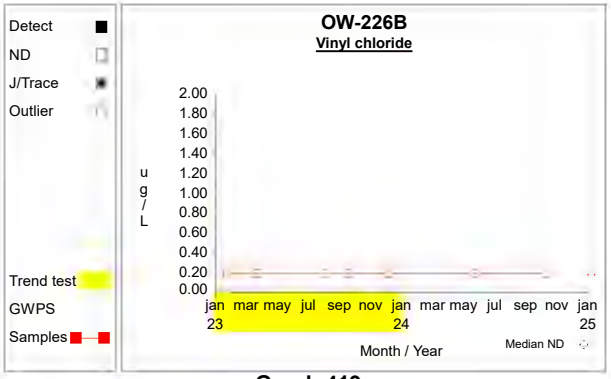
Graph 416



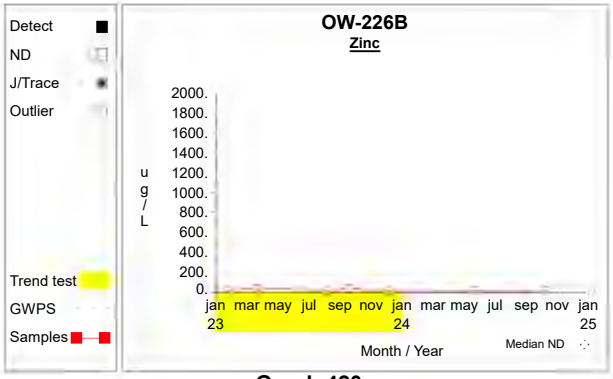
Graph 417



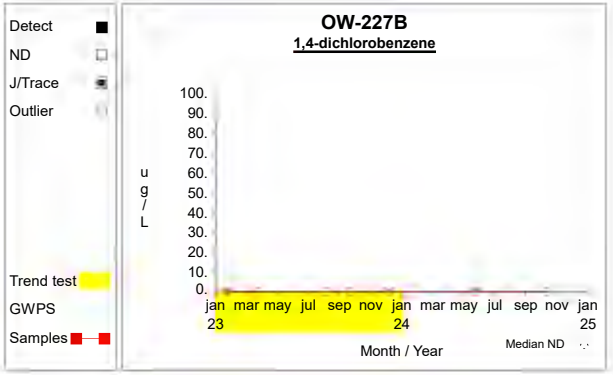
Graph 418



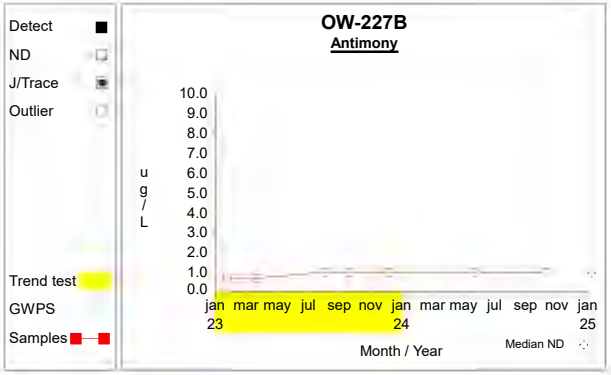
Graph 419



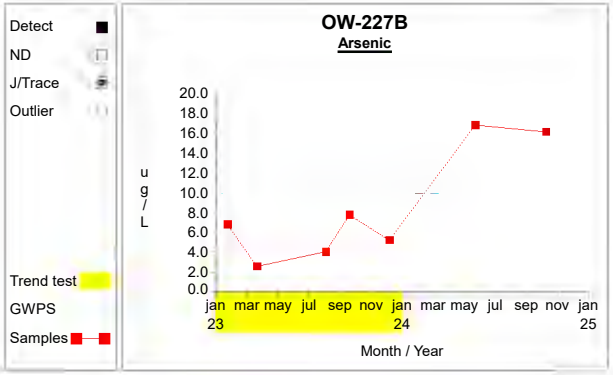
Graph 420



Graph 421

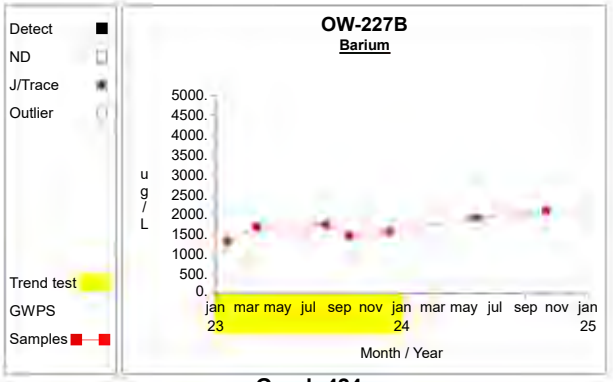


Graph 422

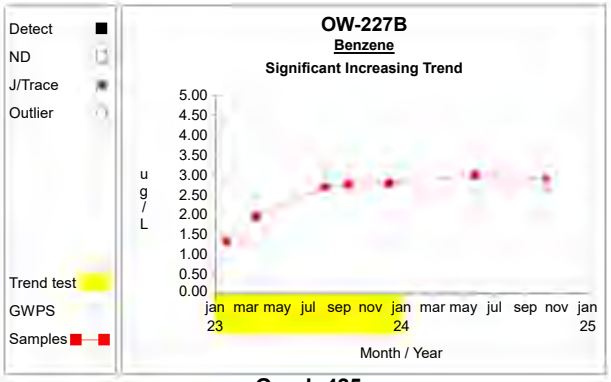


Graph 423

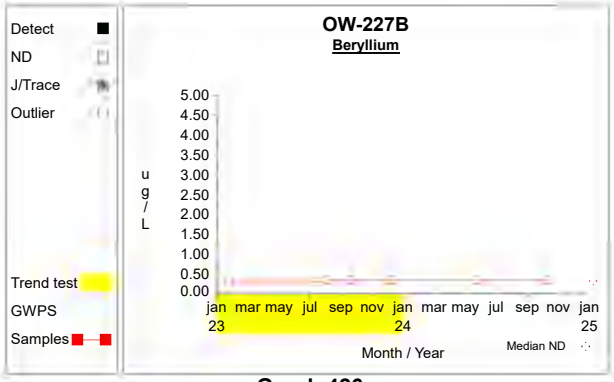
Time Series



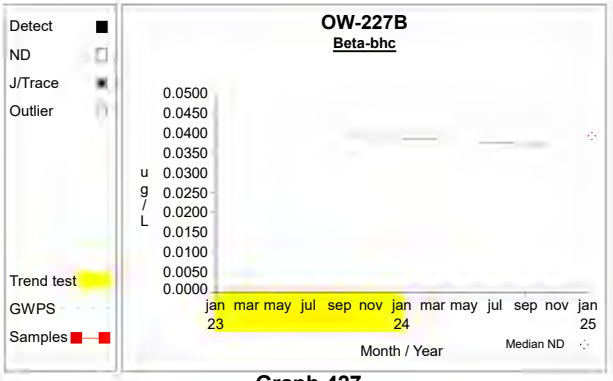
Graph 424



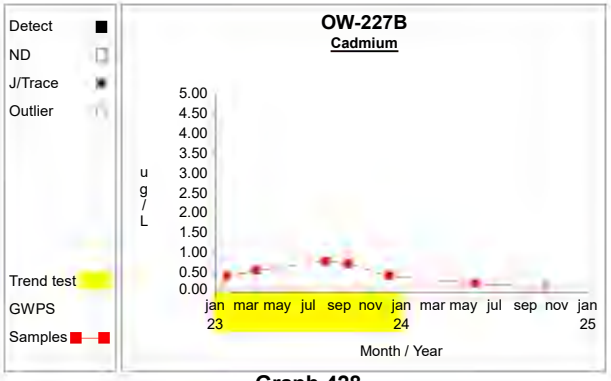
Graph 425



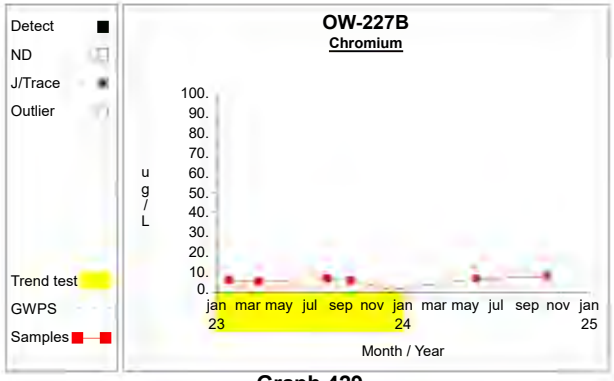
Graph 426



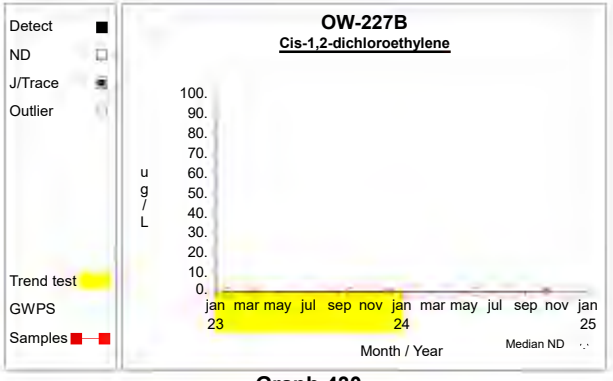
Graph 427



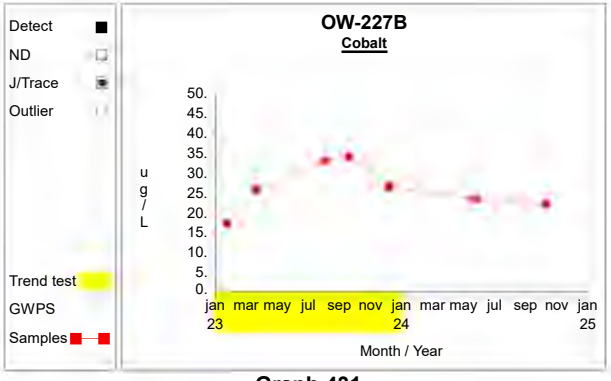
Graph 428



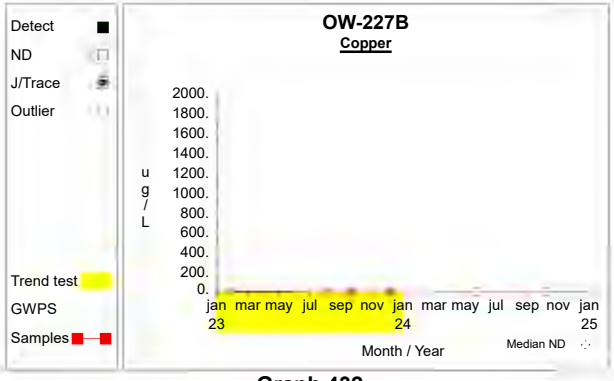
Graph 429



Graph 430

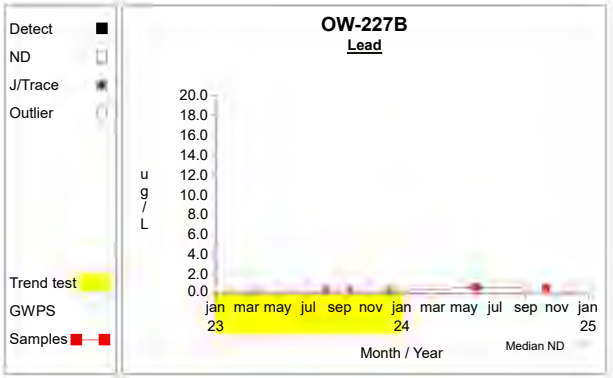


Graph 431

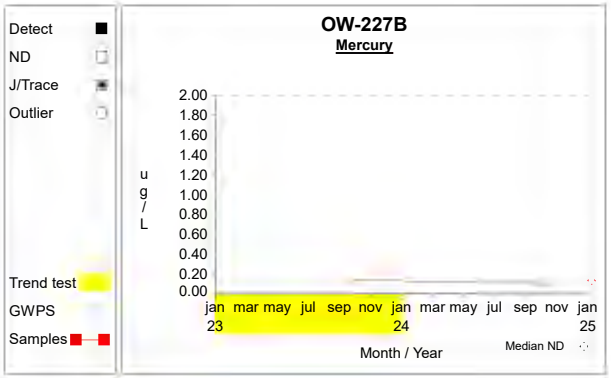


Graph 432

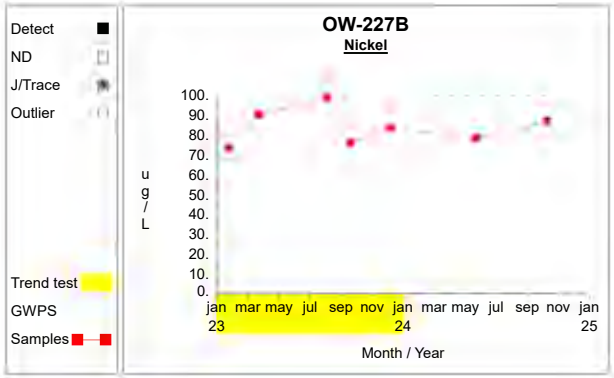
Time Series



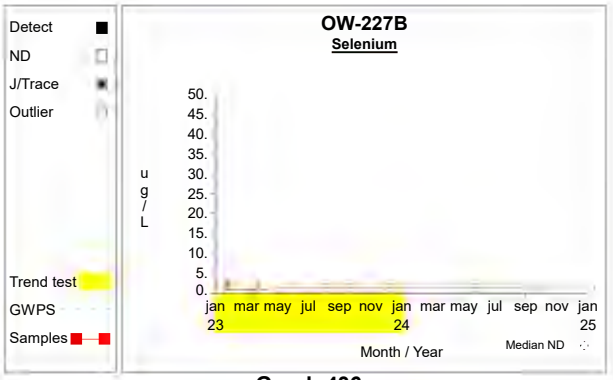
Graph 433



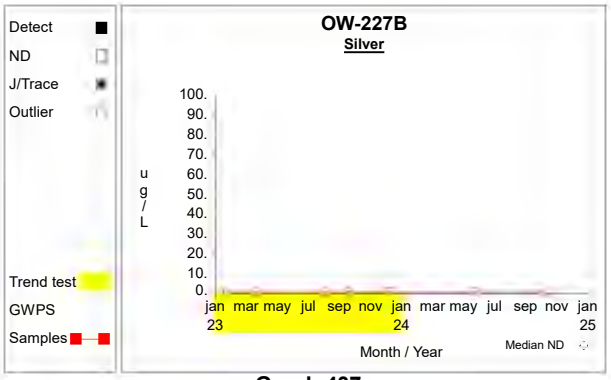
Graph 434



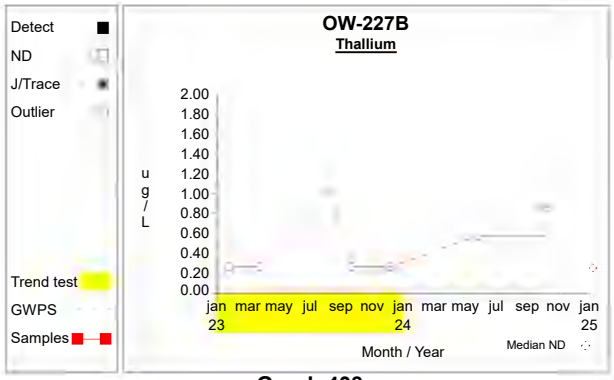
Graph 435



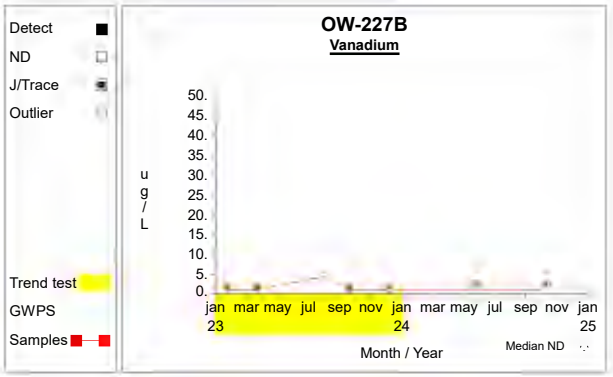
Graph 436



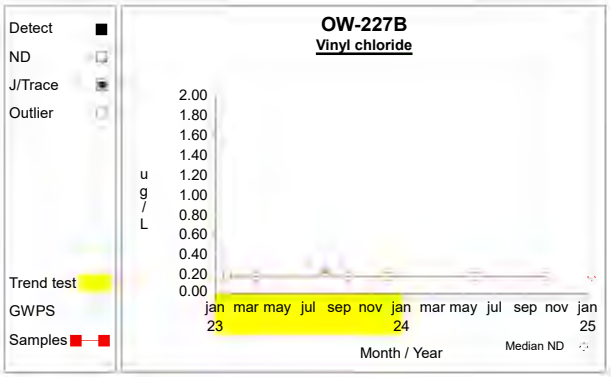
Graph 437



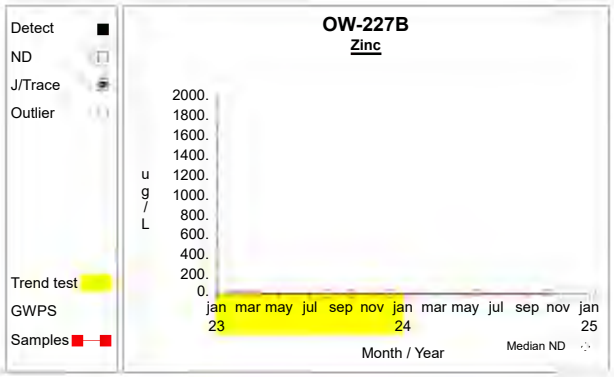
Graph 438



Graph 439

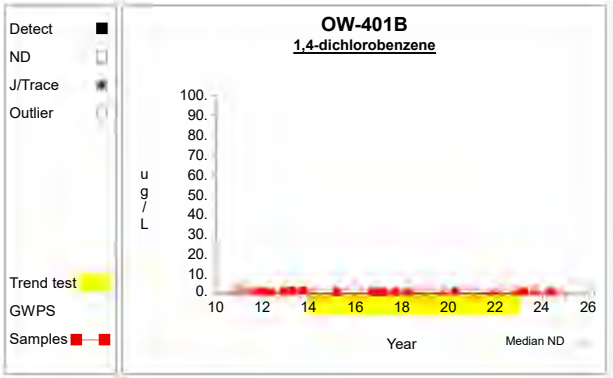


Graph 440

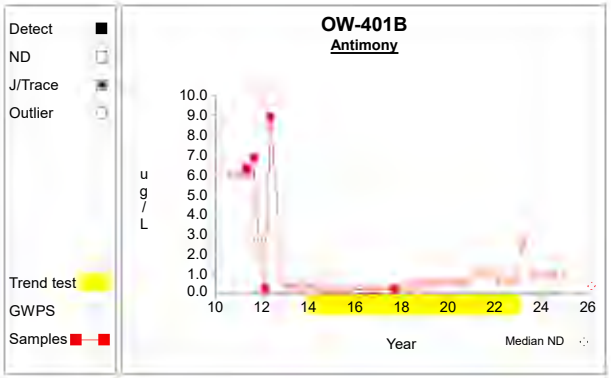


Graph 441

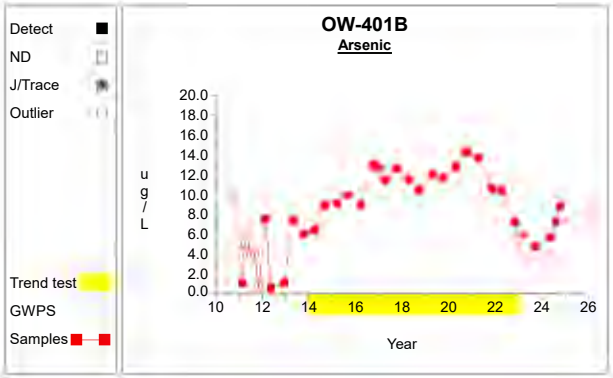
Time Series



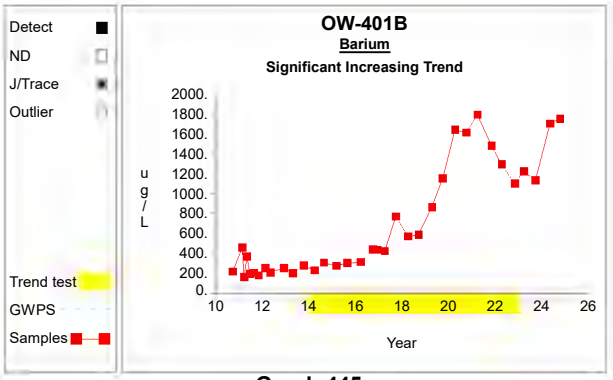
Graph 442



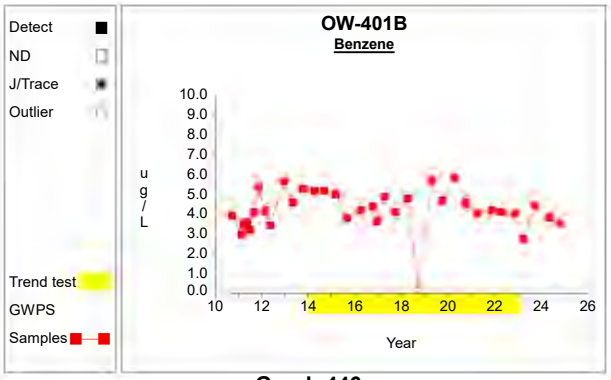
Graph 443



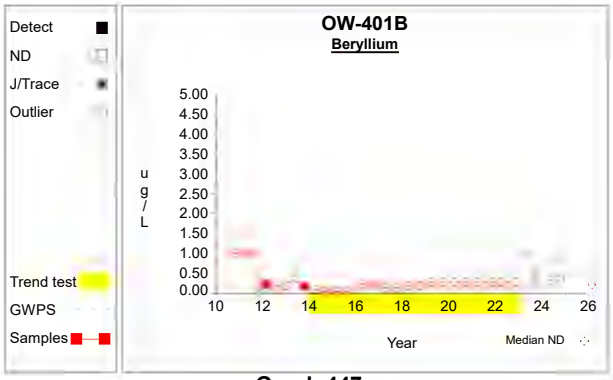
Graph 444



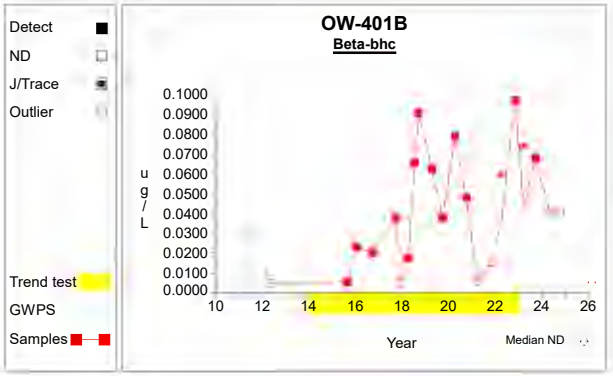
Graph 445



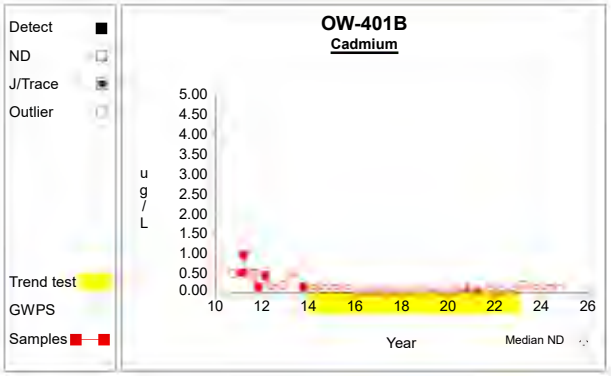
Graph 446



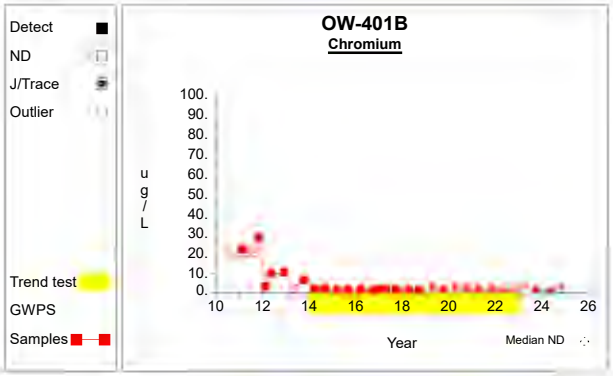
Graph 447



Graph 448

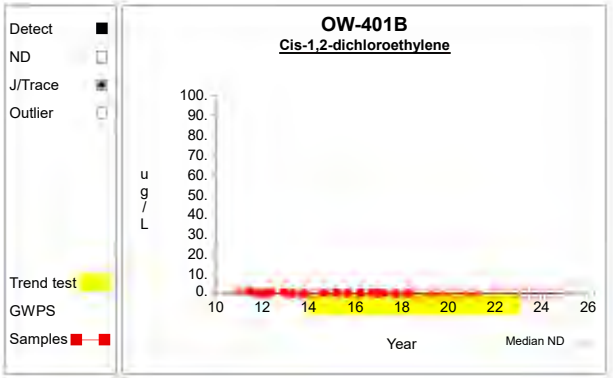


Graph 449

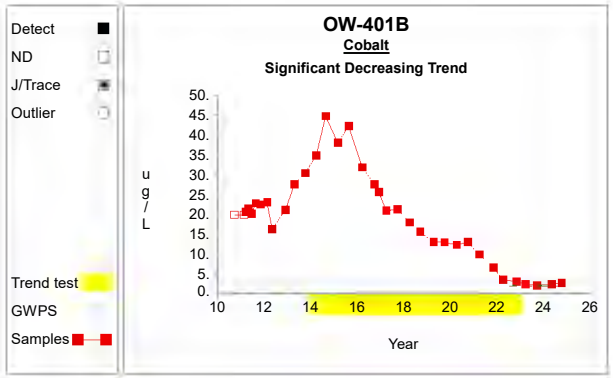


Graph 450

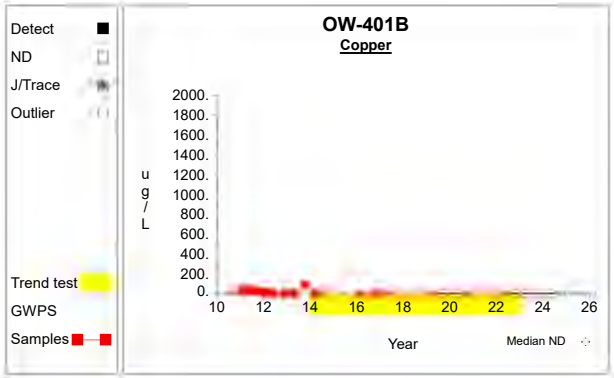
Time Series



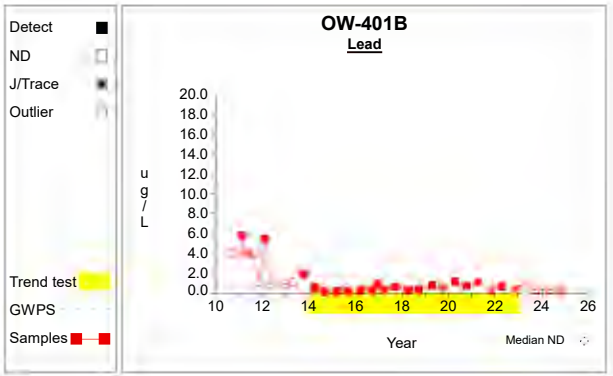
Graph 451



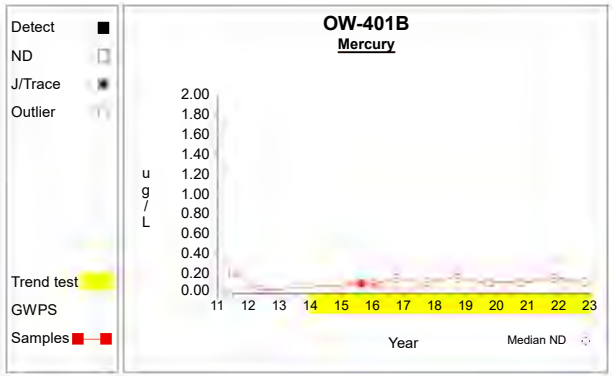
Graph 452



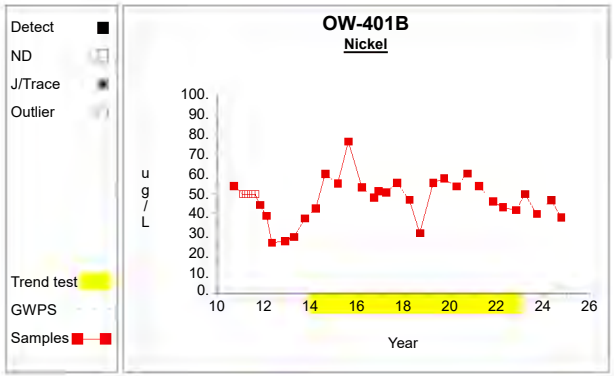
Graph 453



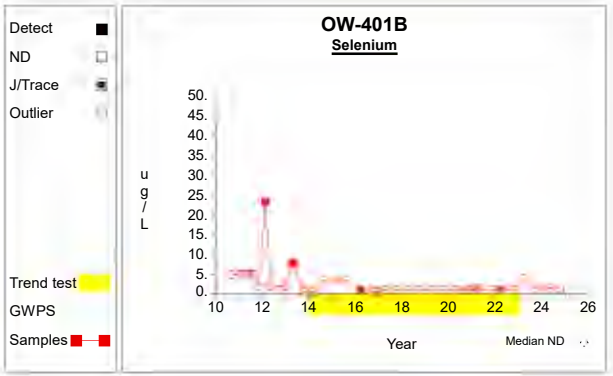
Graph 454



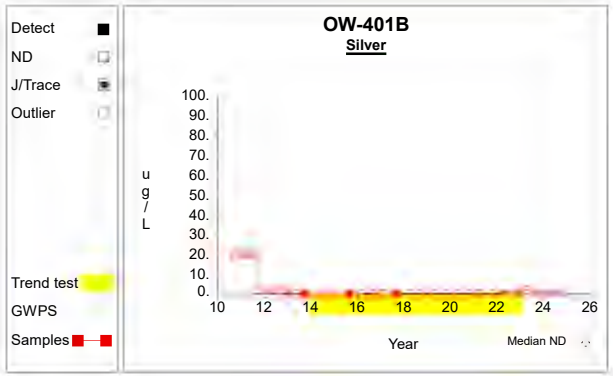
Graph 455



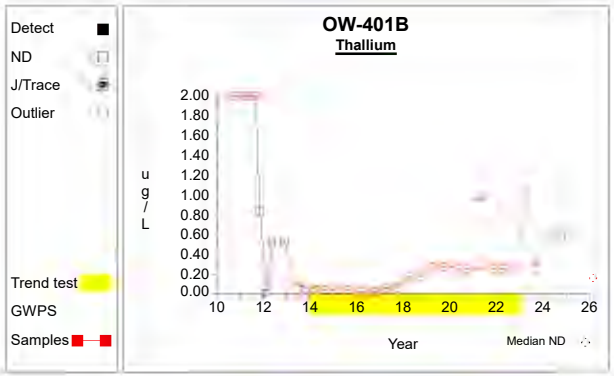
Graph 456



Graph 457

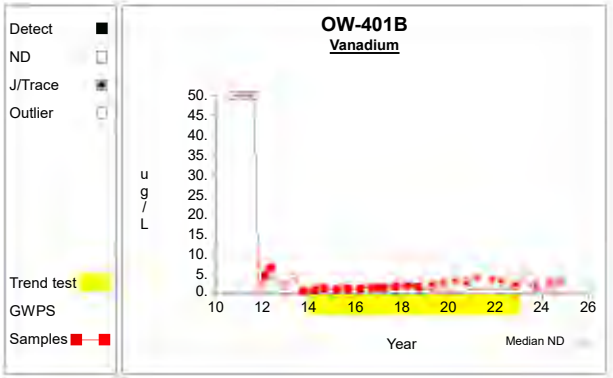


Graph 458

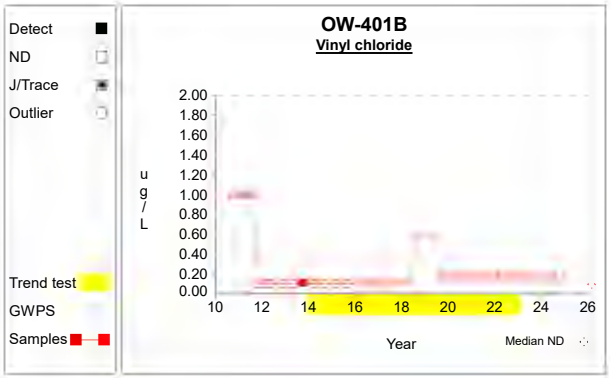


Graph 459

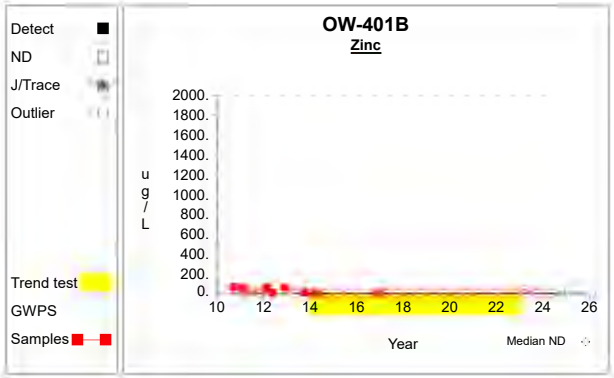
Time Series



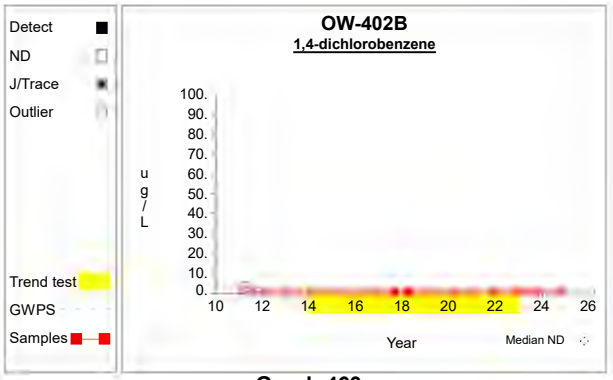
Graph 460



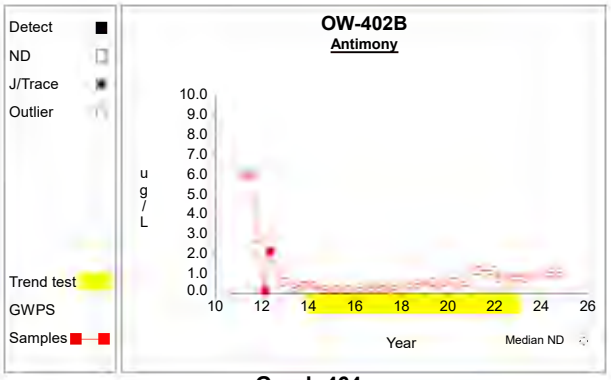
Graph 461



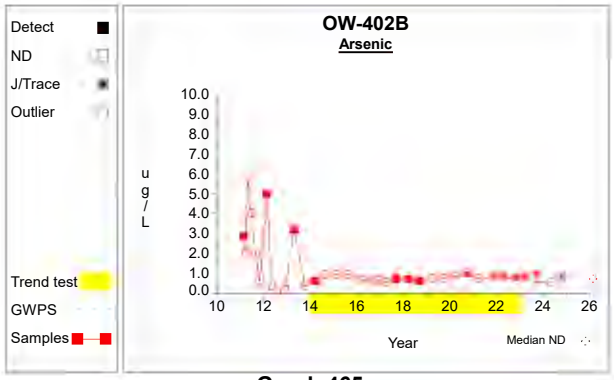
Graph 462



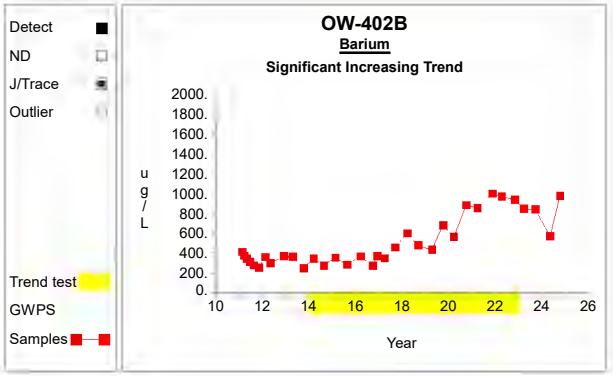
Graph 463



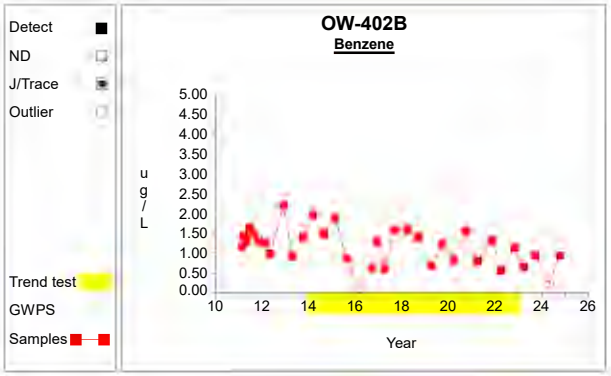
Graph 464



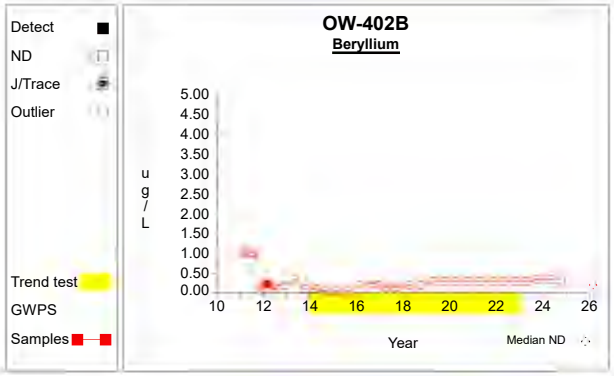
Graph 465



Graph 466

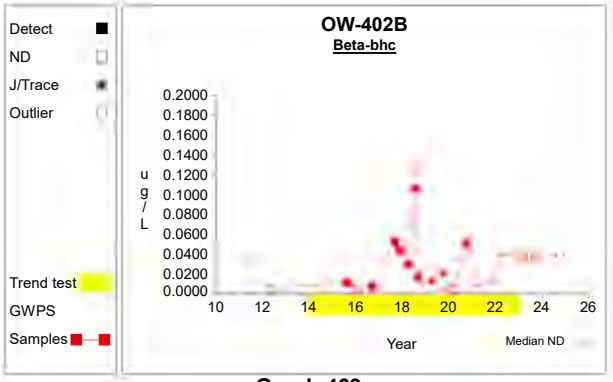


Graph 467

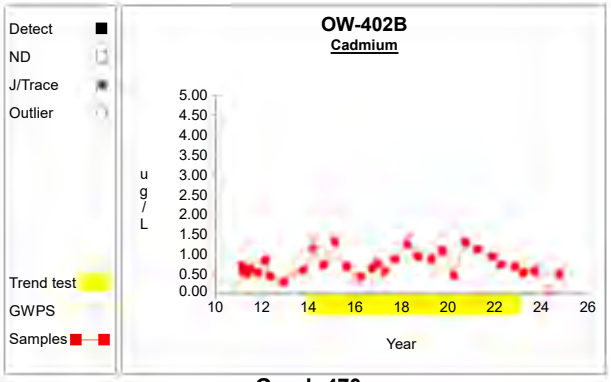


Graph 468

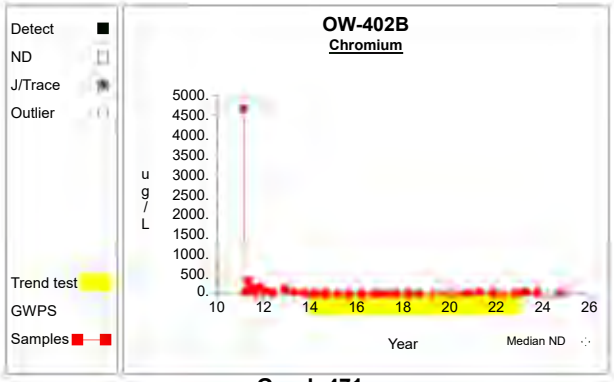
Time Series



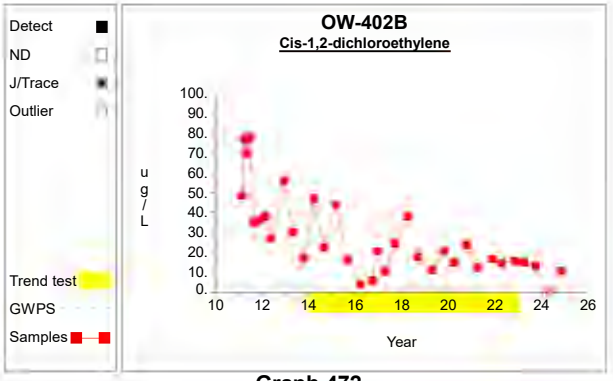
Graph 469



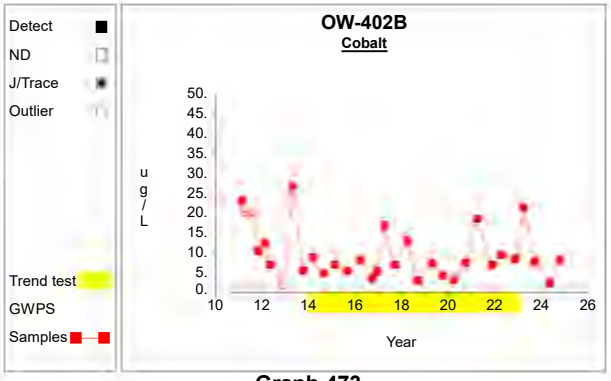
Graph 470



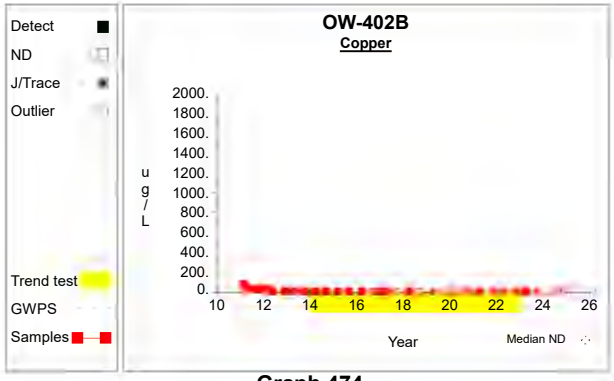
Graph 471



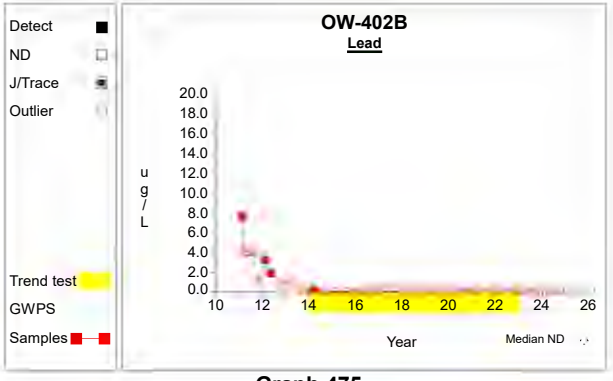
Graph 472



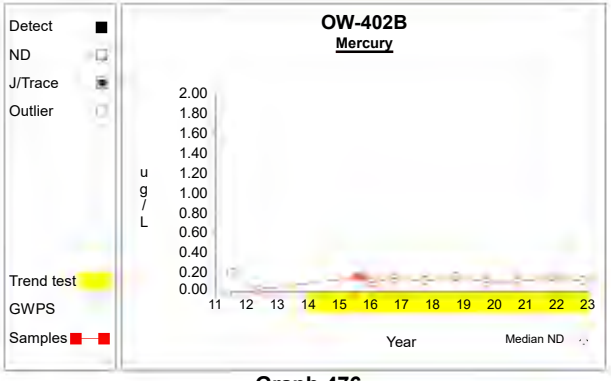
Graph 473



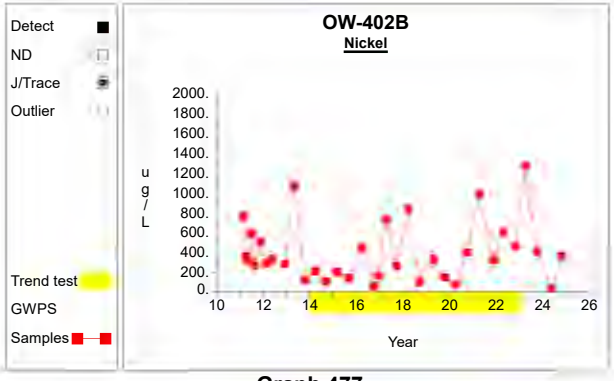
Graph 474



Graph 475

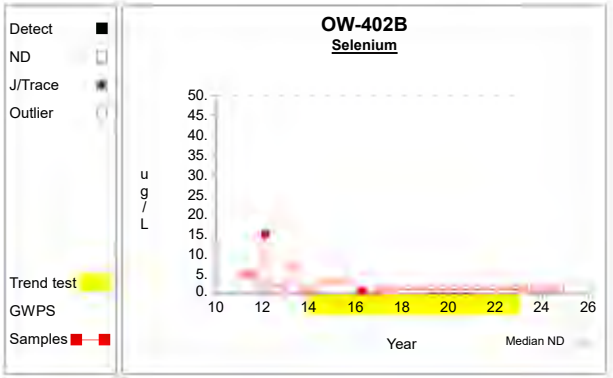


Graph 476

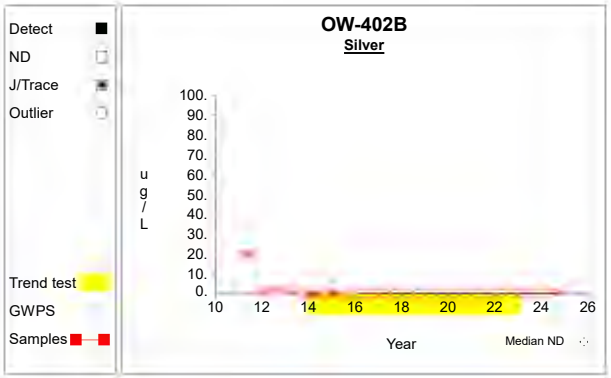


Graph 477

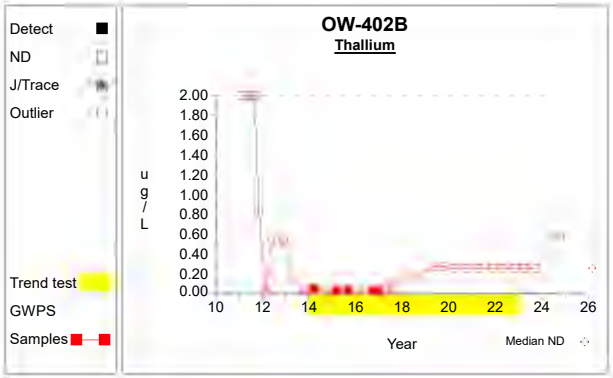
Time Series



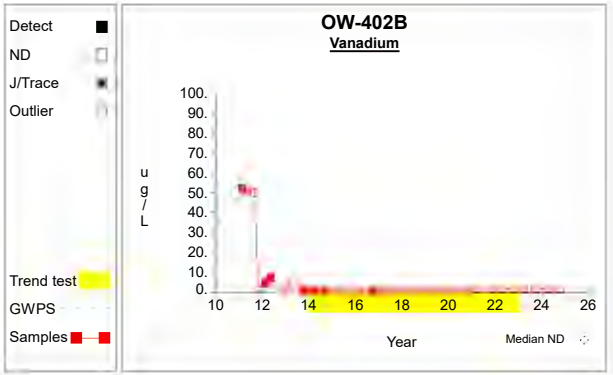
Graph 478



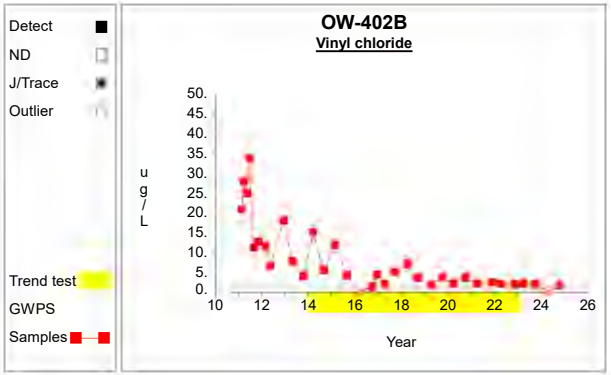
Graph 479



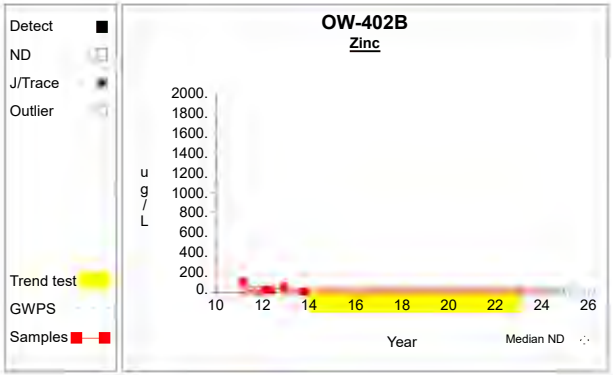
Graph 480



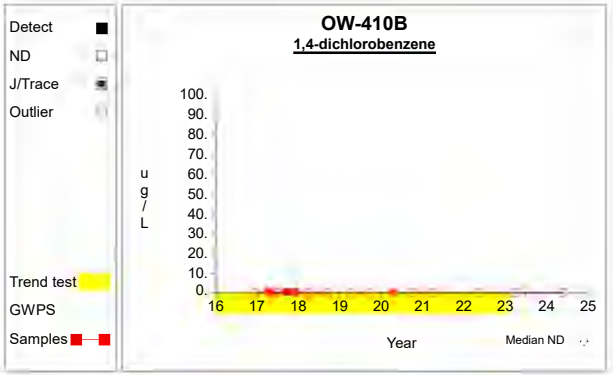
Graph 481



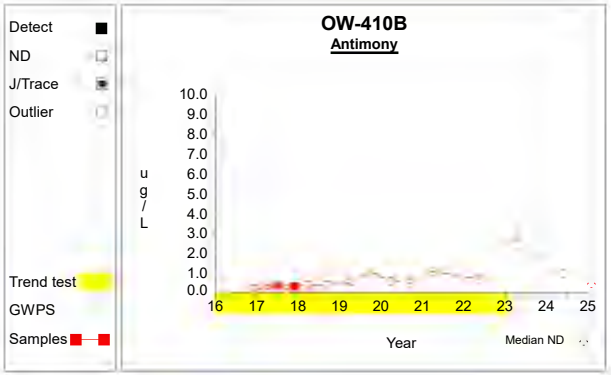
Graph 482



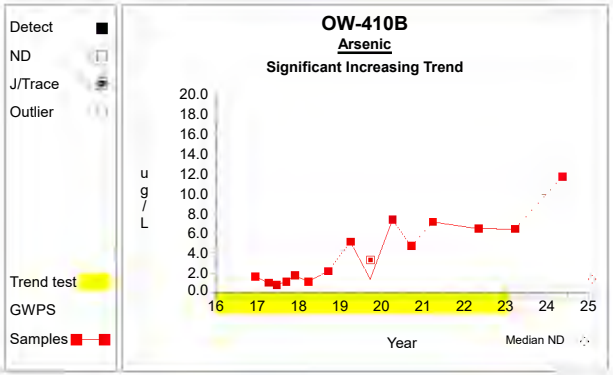
Graph 483



Graph 484

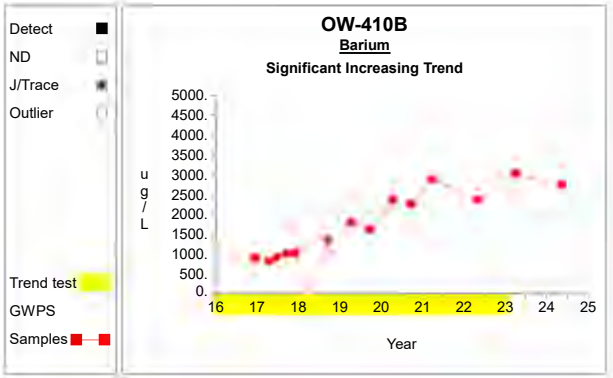


Graph 485

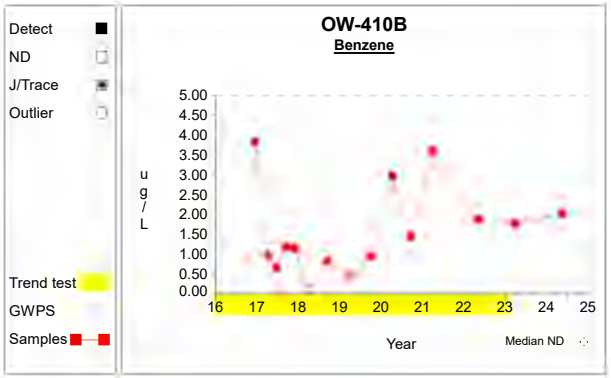


Graph 486

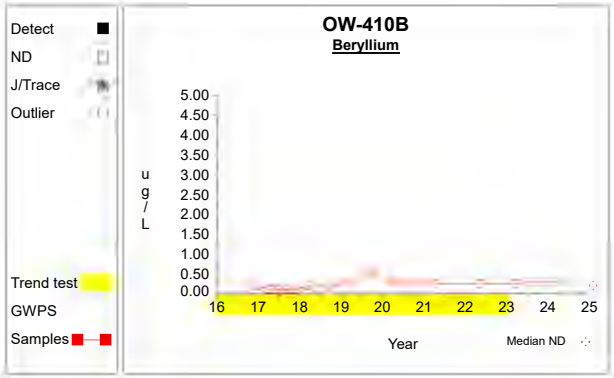
Time Series



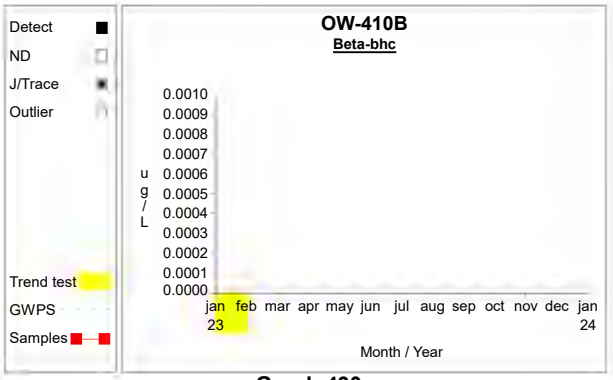
Graph 487



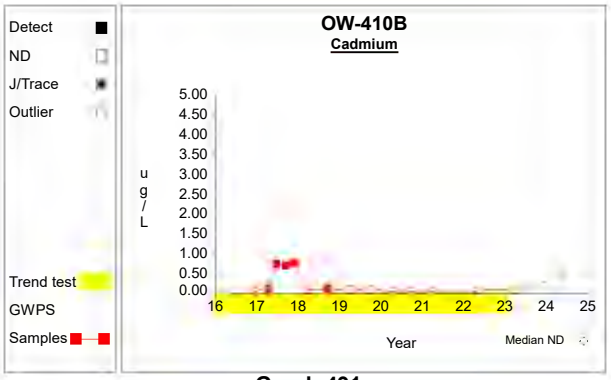
Graph 488



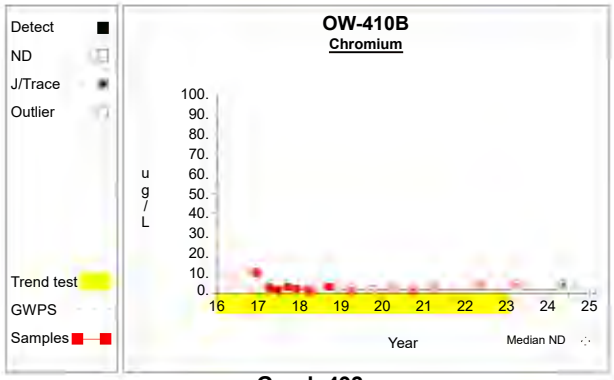
Graph 489



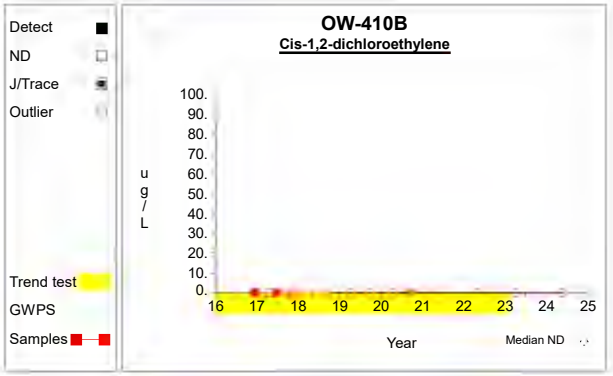
Graph 490



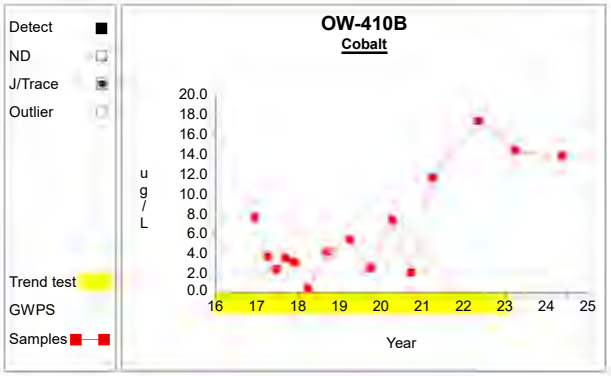
Graph 491



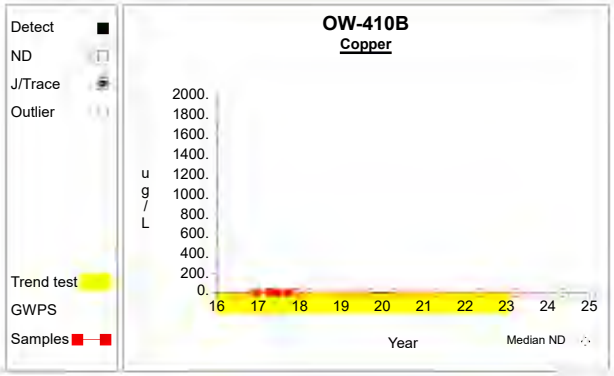
Graph 492



Graph 493

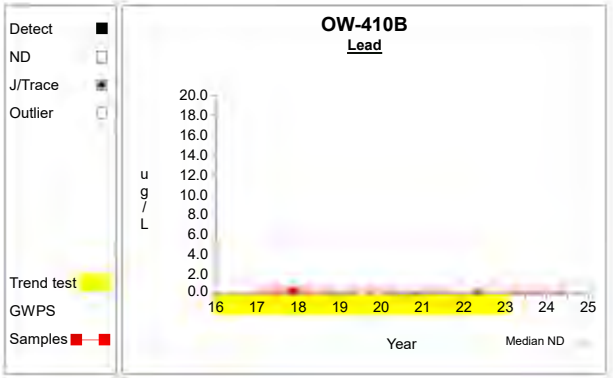


Graph 494

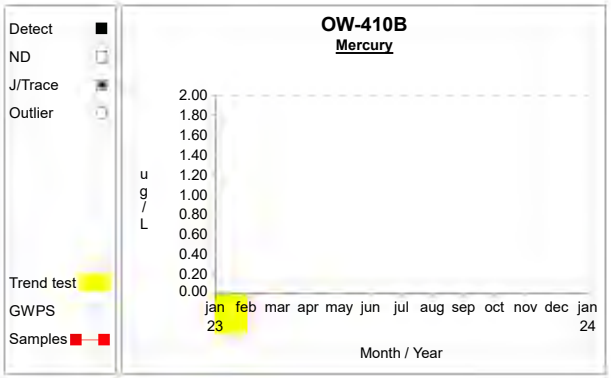


Graph 495

Time Series



Graph 496



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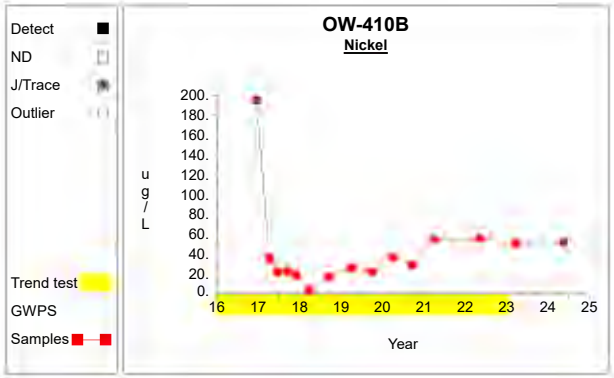

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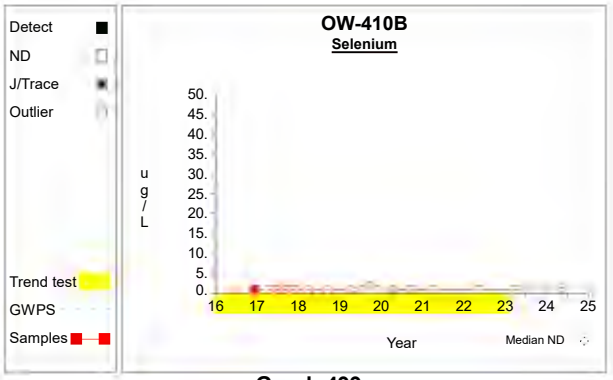

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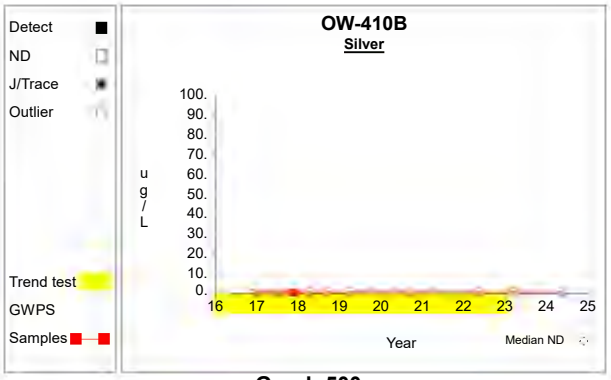

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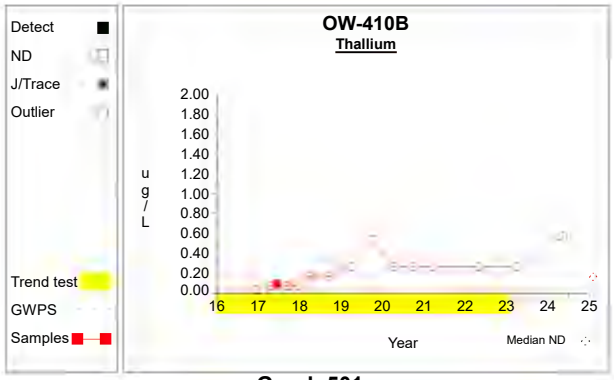

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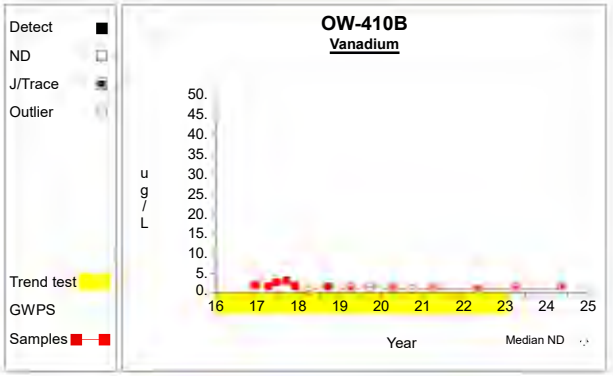

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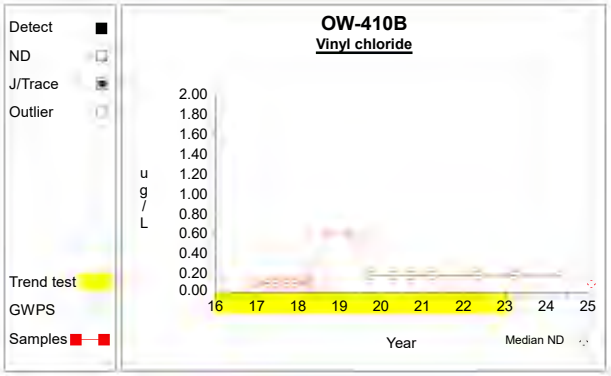

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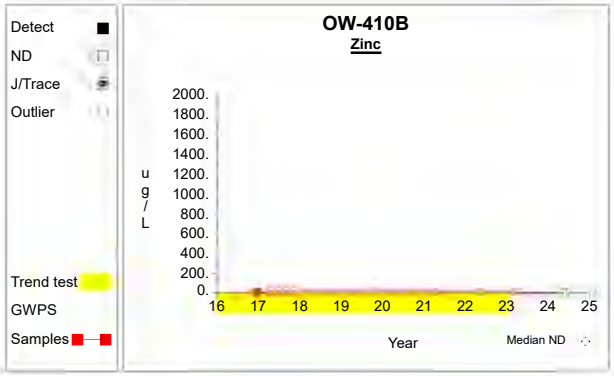
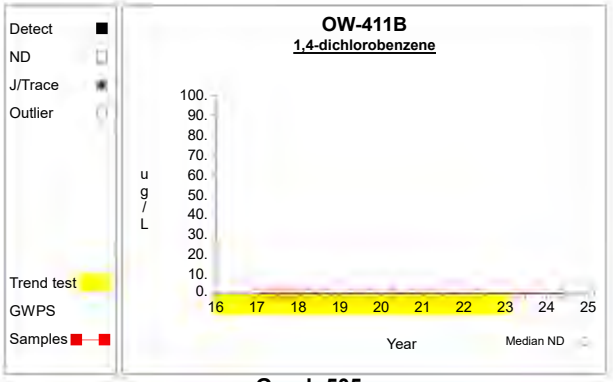
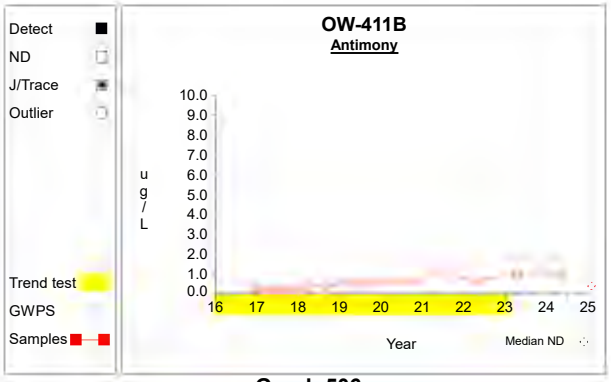


Graph 504

Time Series



Graph 505



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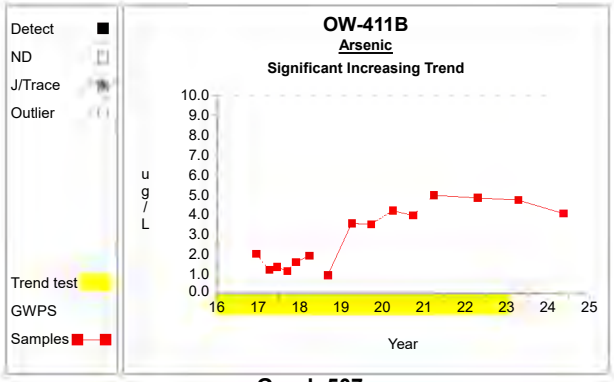

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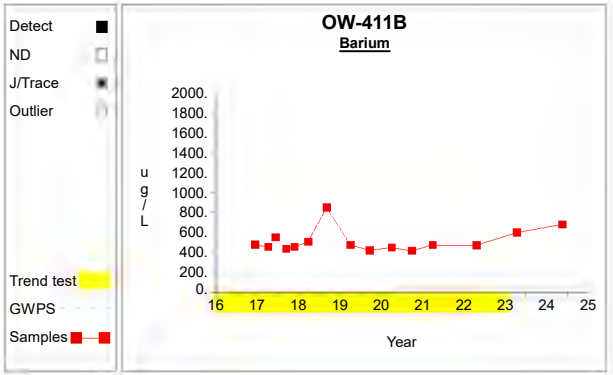

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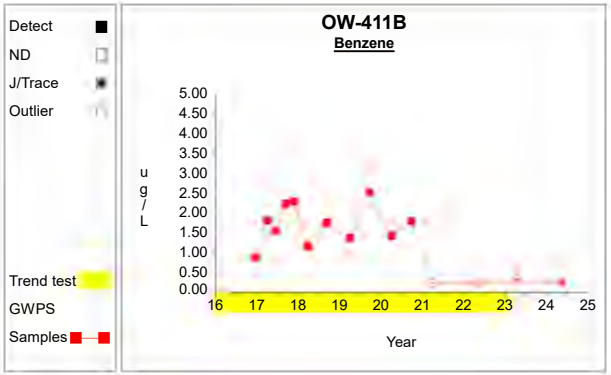

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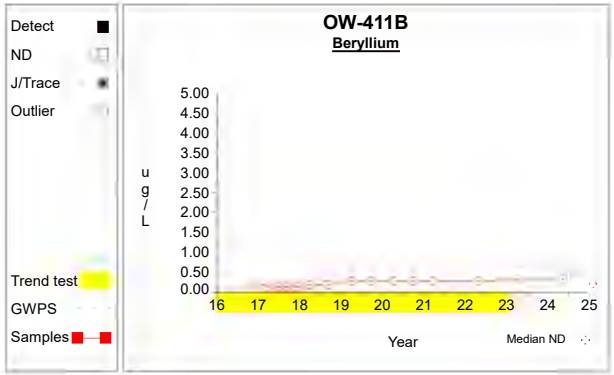
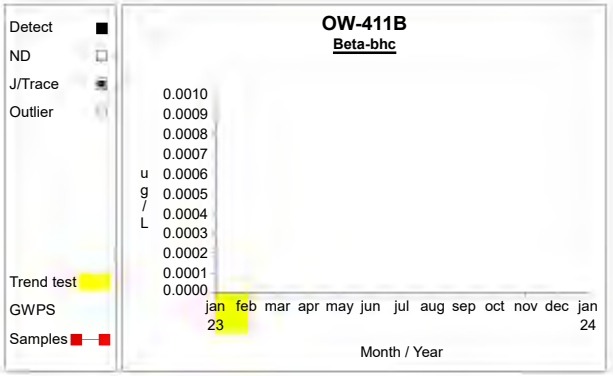


Graph 510



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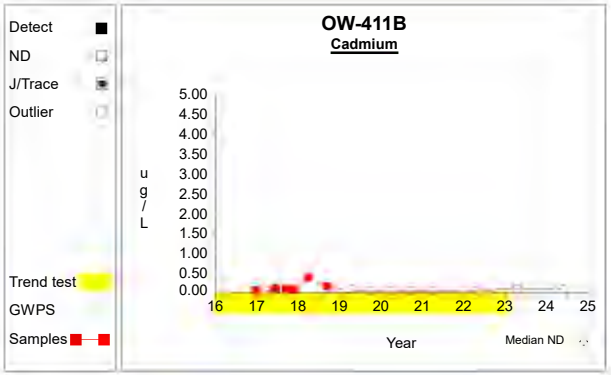
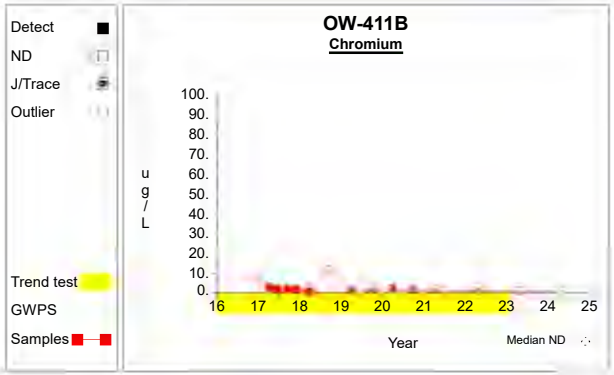
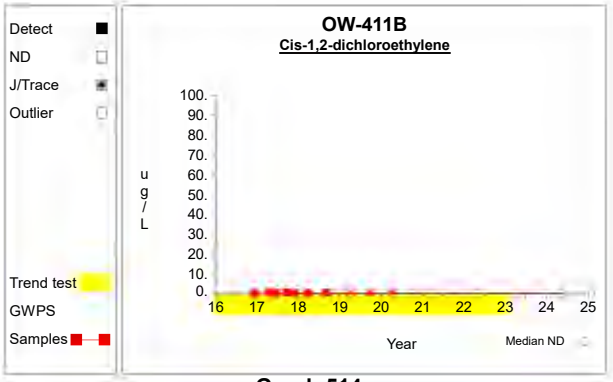


Graph 512



Graph 513

Time Series



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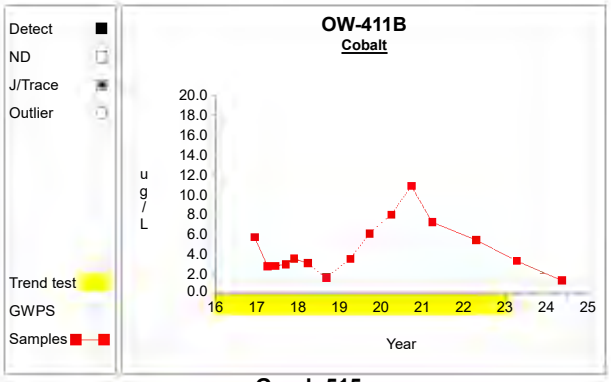

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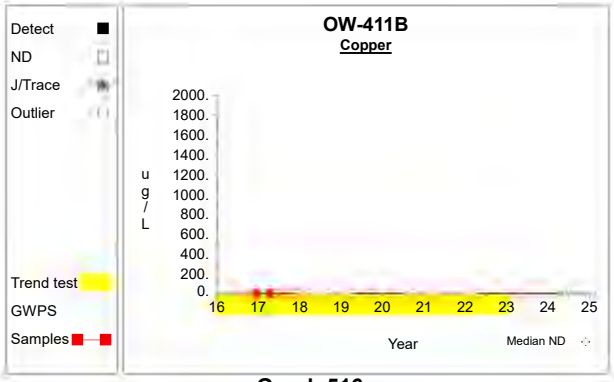
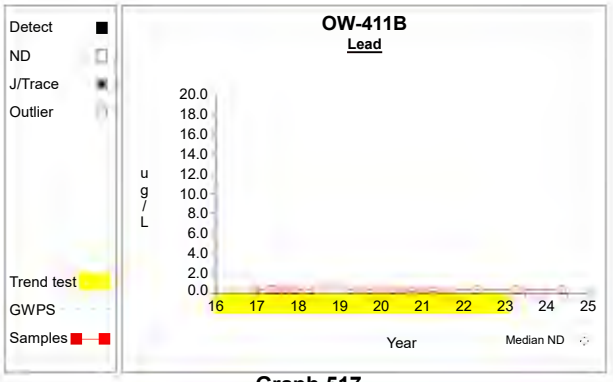


Graph 516



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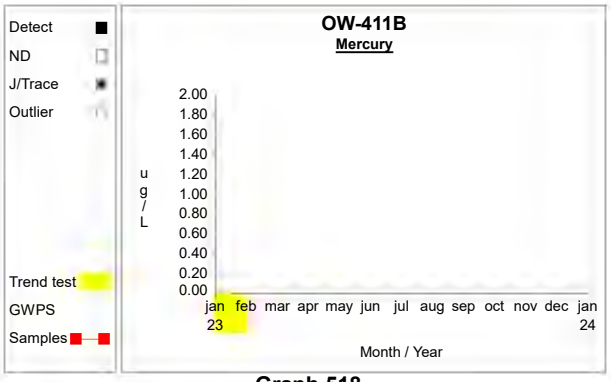

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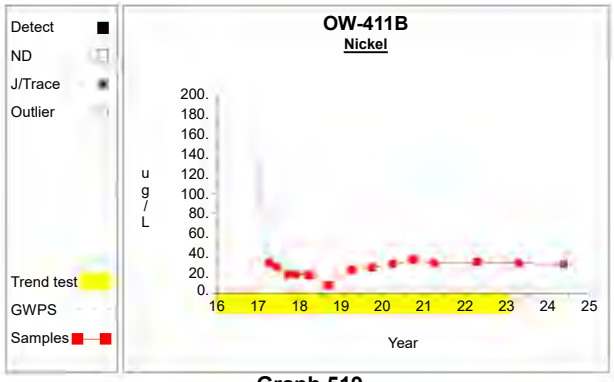

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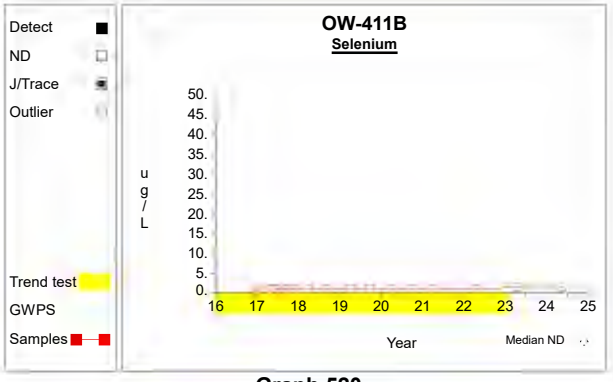

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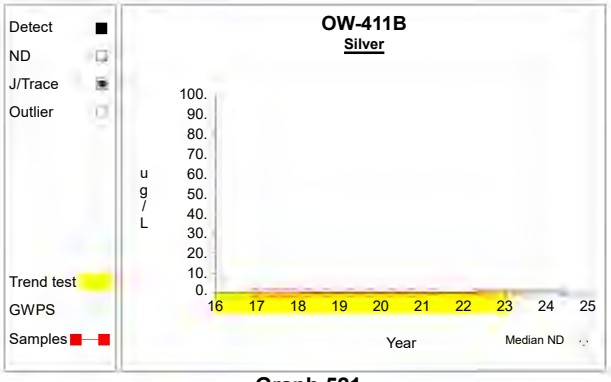

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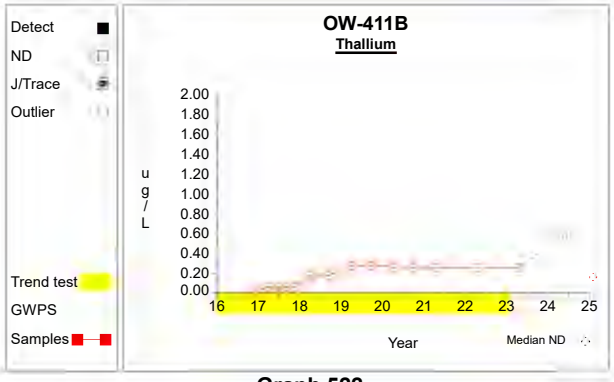
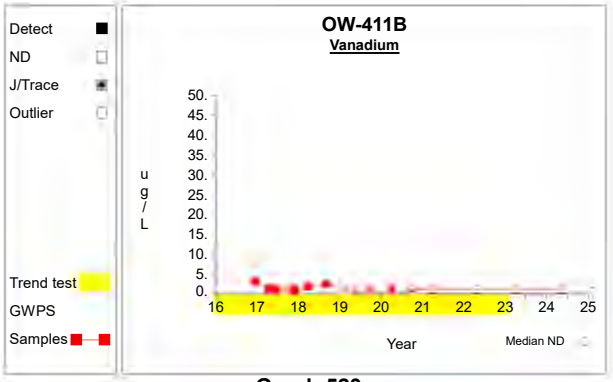
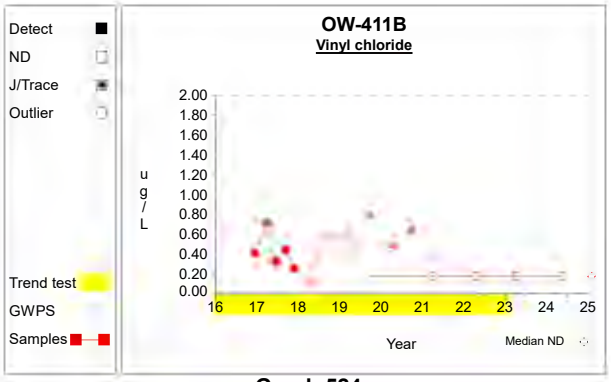


Graph 522

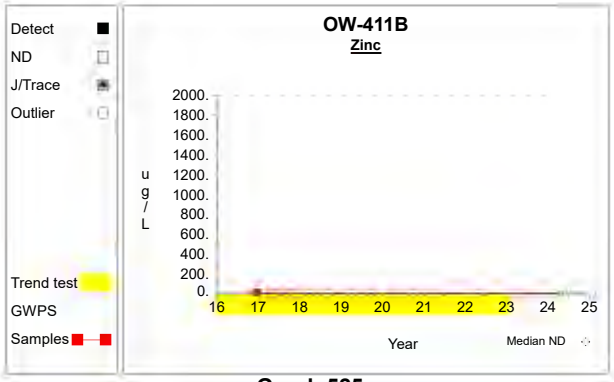
Time Series



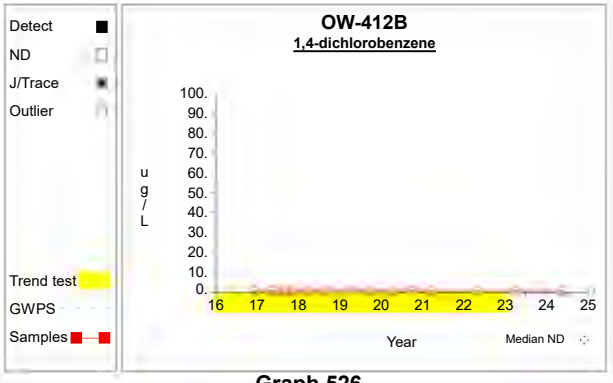
Graph 523



Graph 524



Graph 525



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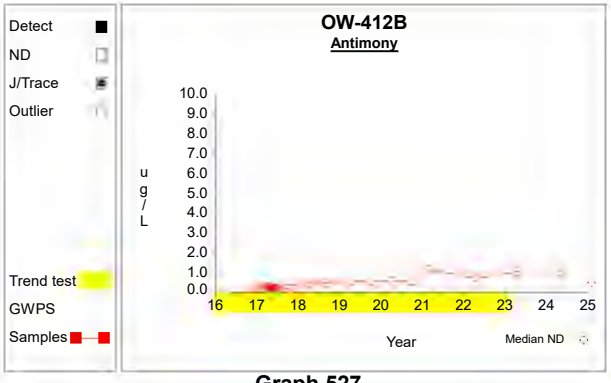

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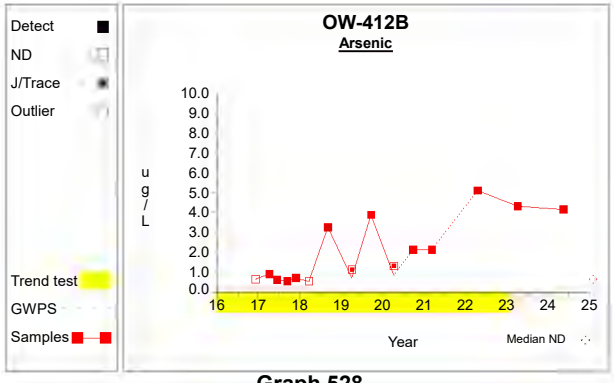

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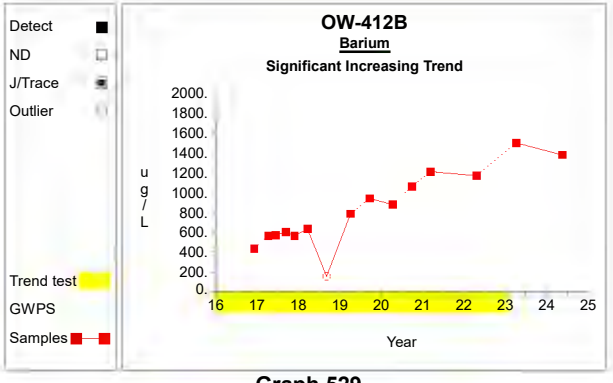
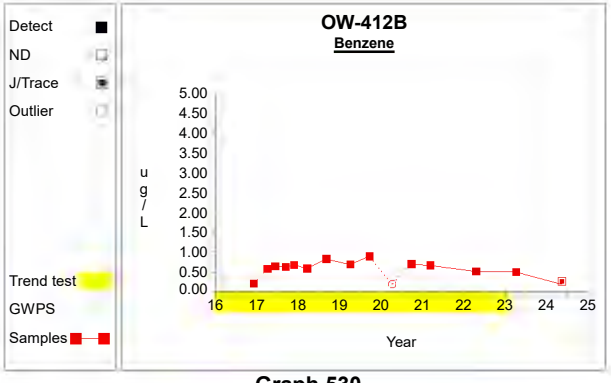


Graph 529



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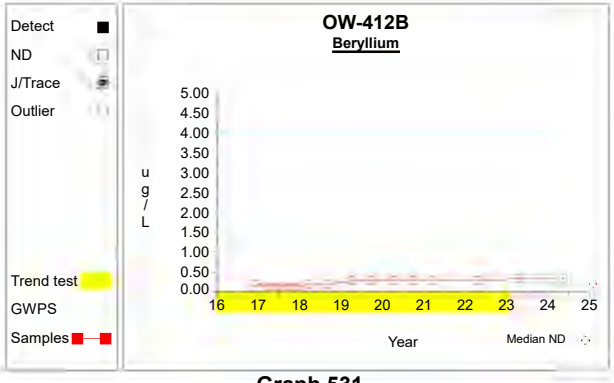
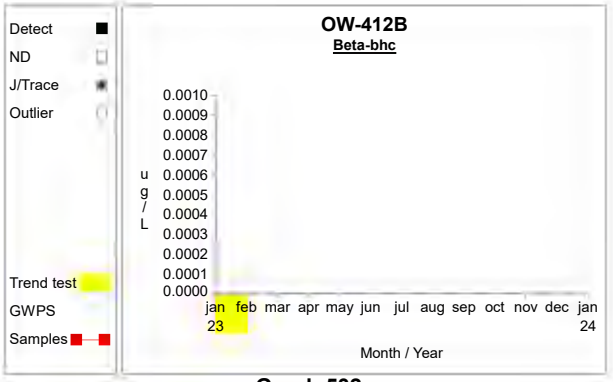


Graph 531

Time Series



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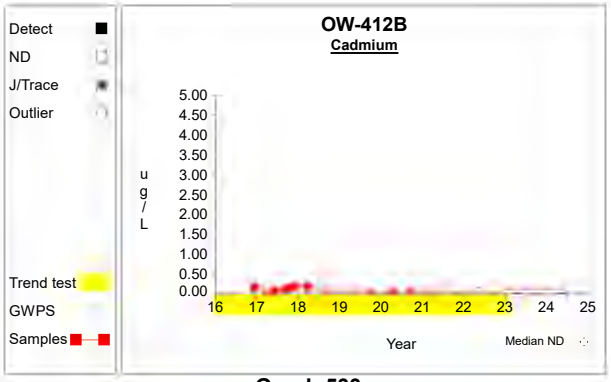

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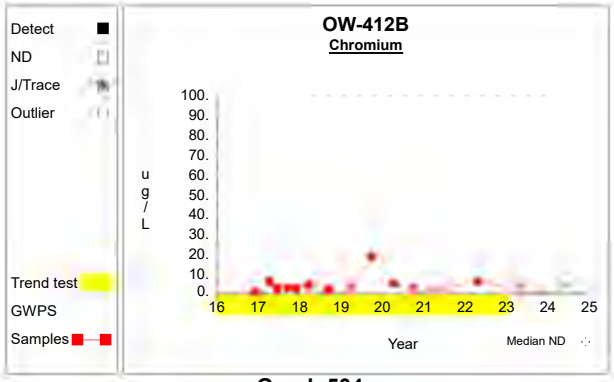

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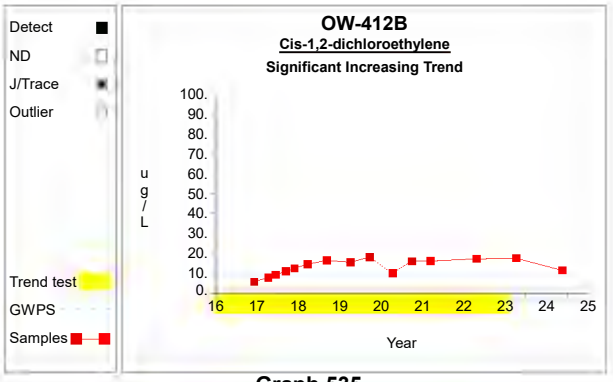
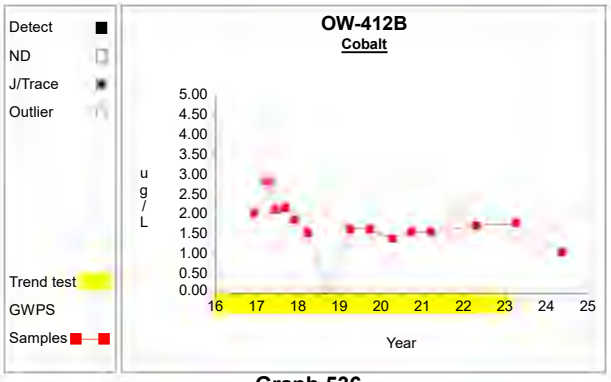


Graph 535



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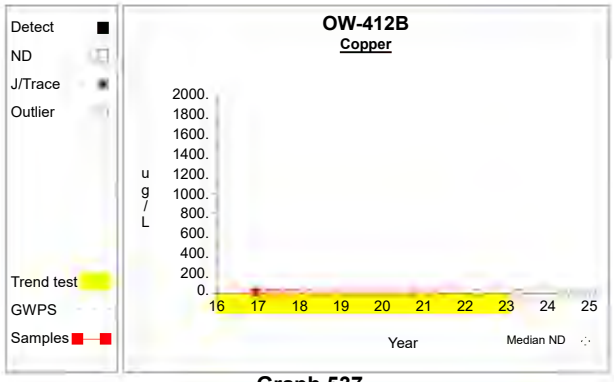
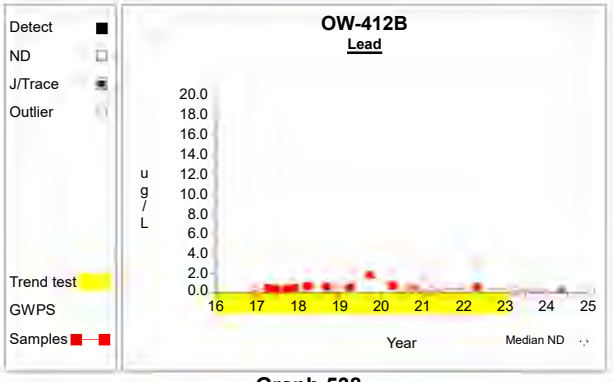
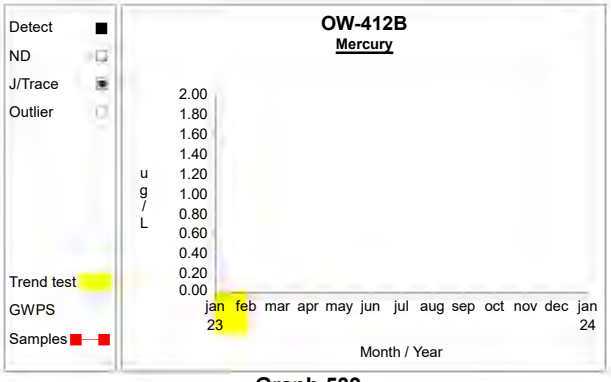


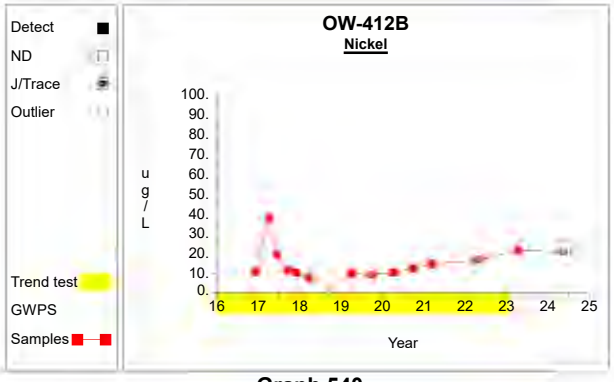
Graph 537



Graph 538

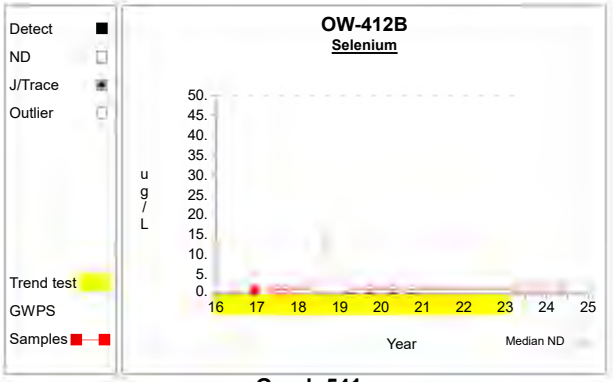


Graph 539

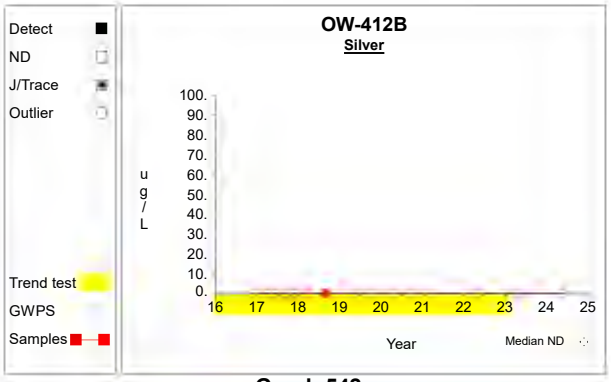


Graph 540

Time Series



Graph 541



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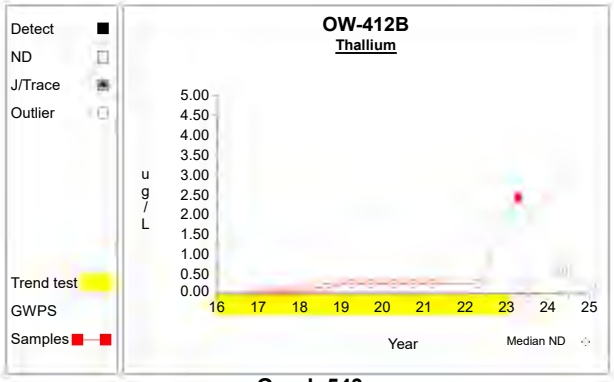

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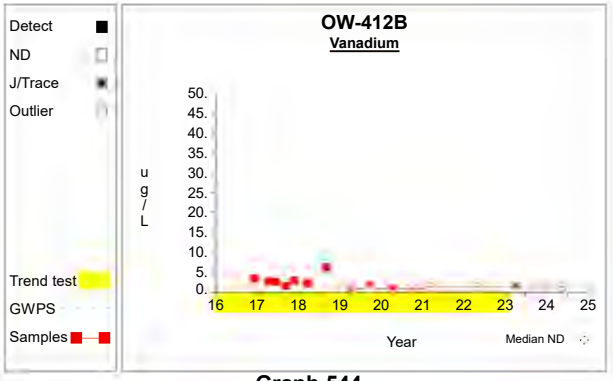
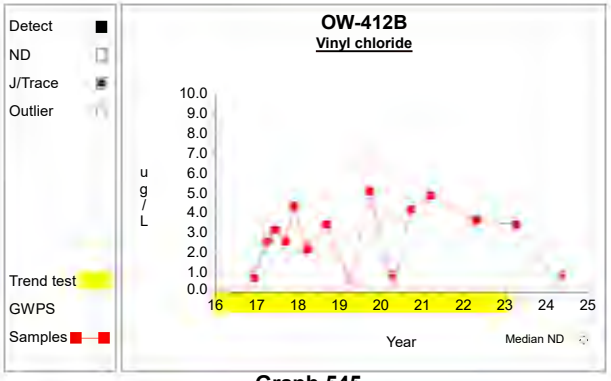
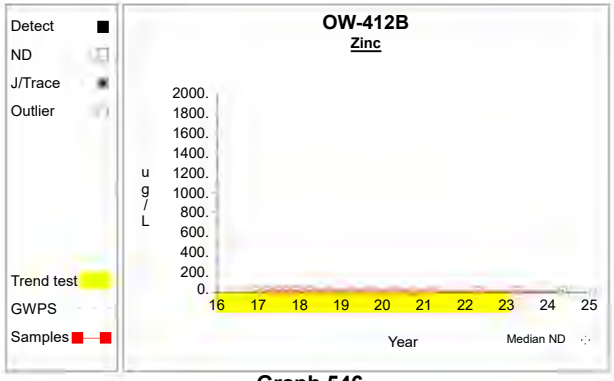


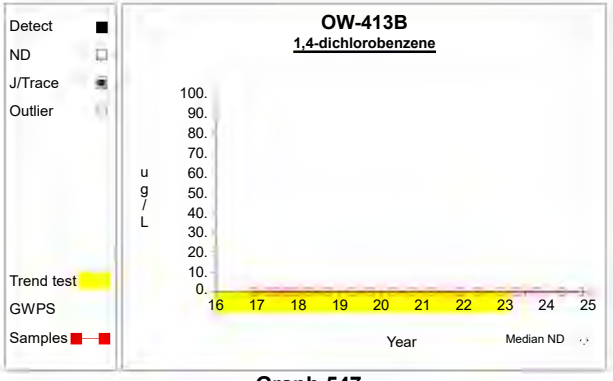
Graph 544



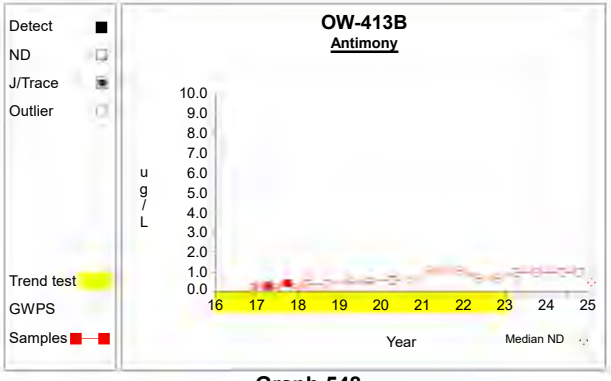
Graph 545



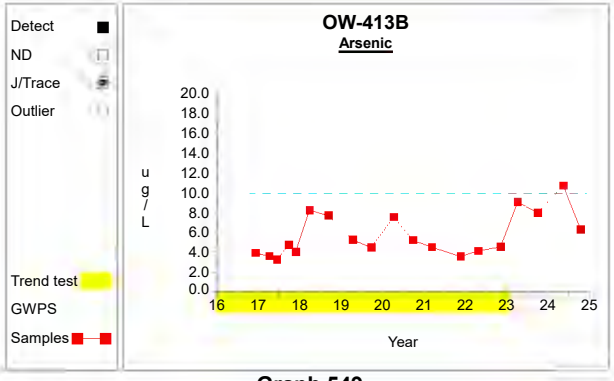
Graph 546



Graph 547

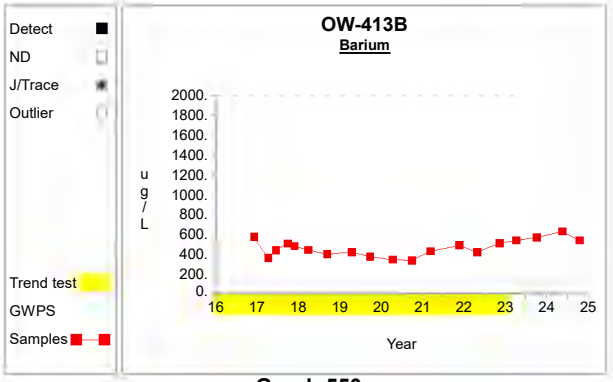


Graph 548

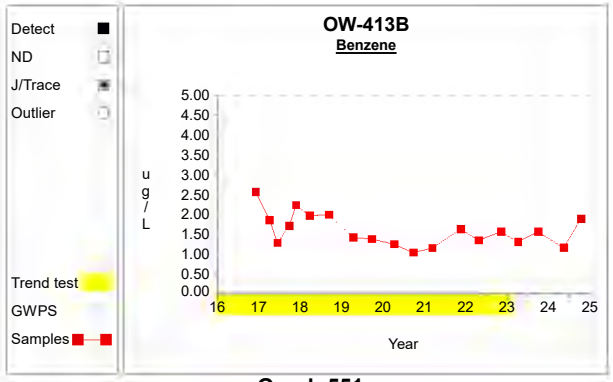


Graph 549

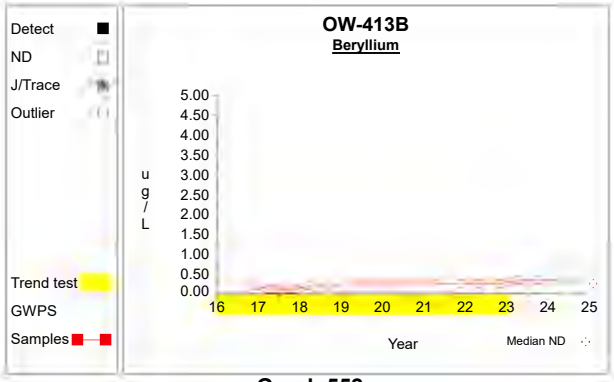
Time Series



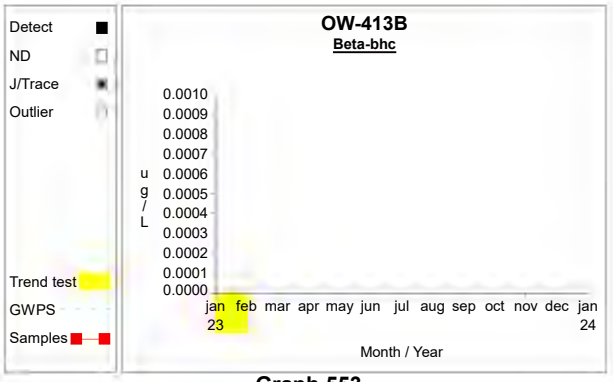
Graph 550



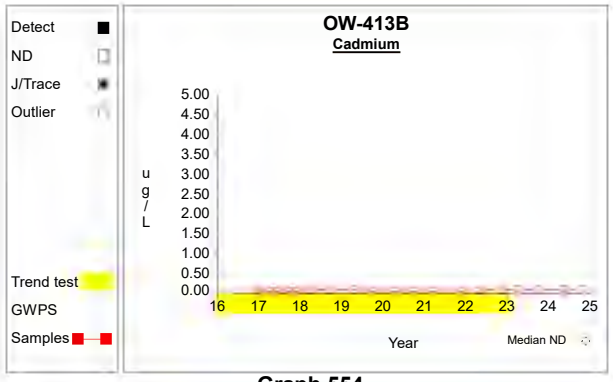
Graph 551



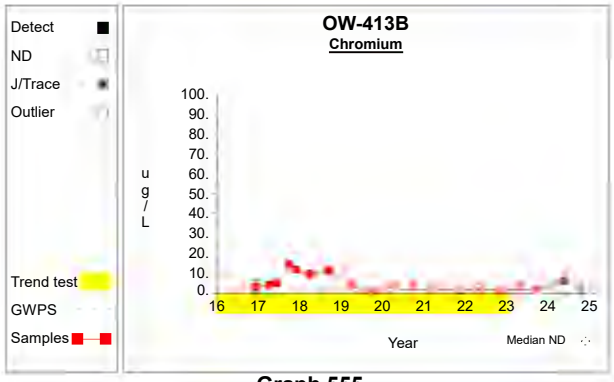
Graph 552



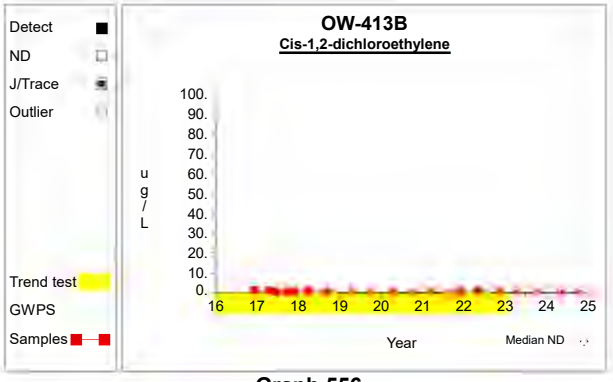
Graph 553



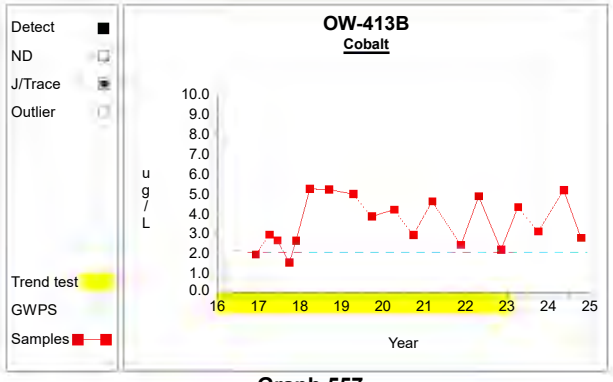
Graph 554



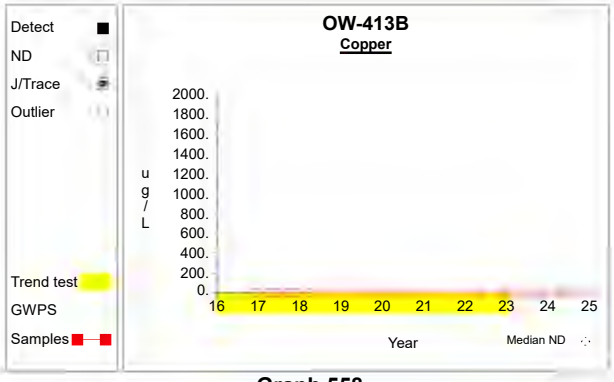
Graph 555



Graph 556

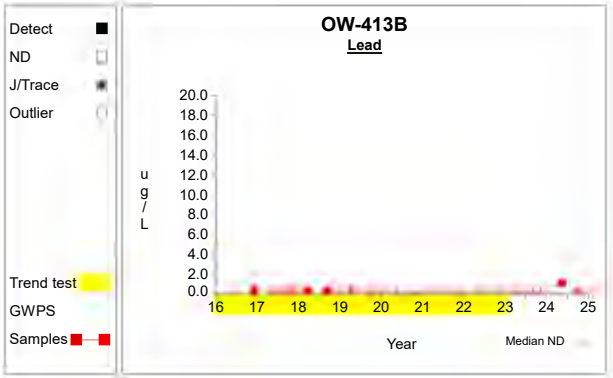


Graph 557

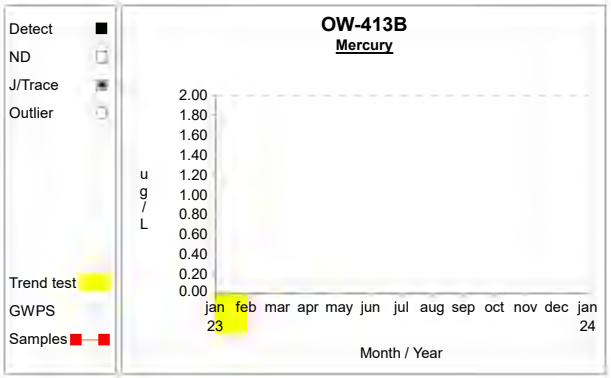


Graph 558

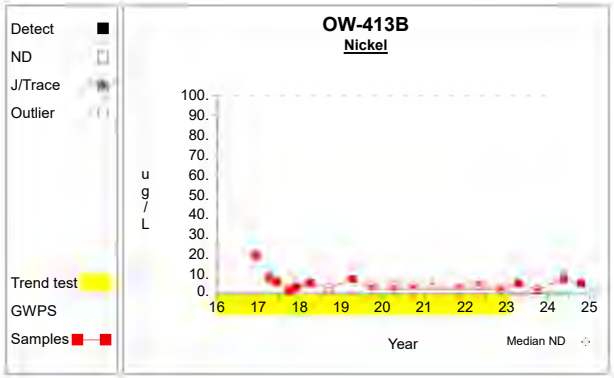
Time Series



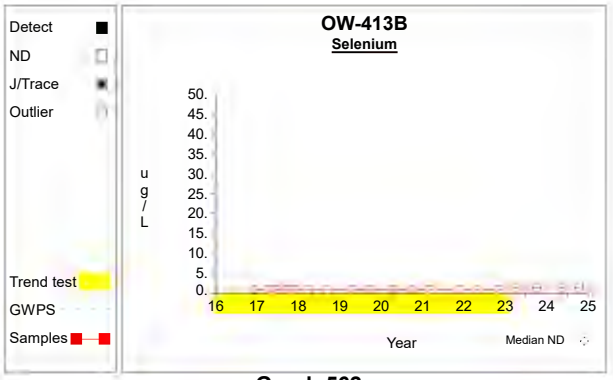
Graph 559



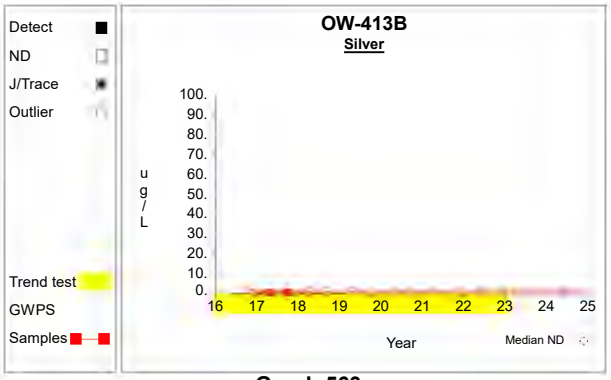
Graph 560



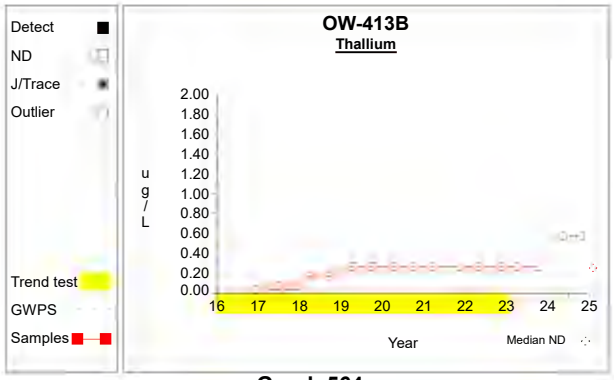
Graph 561



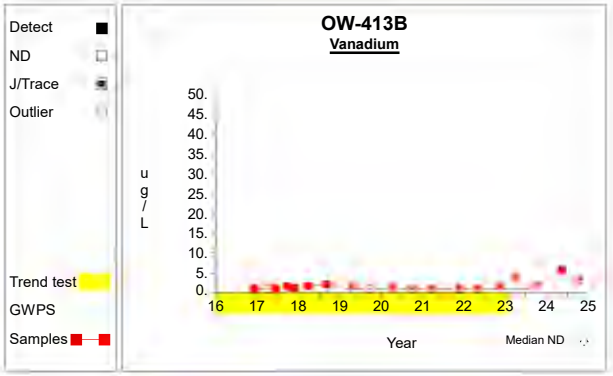
Graph 562



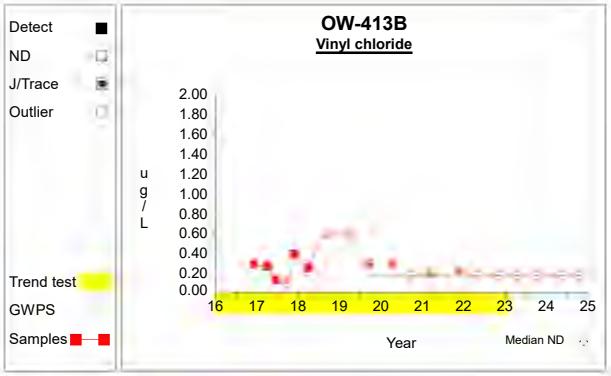
Graph 563



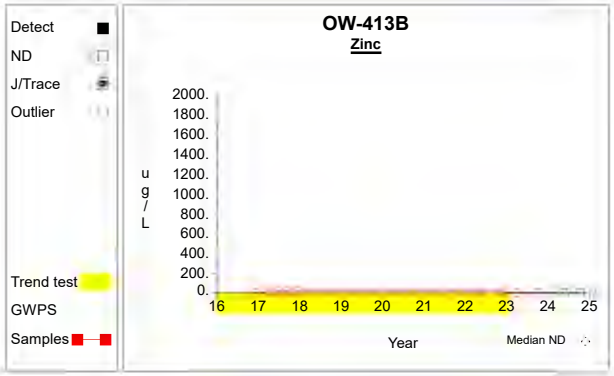
Graph 564



Graph 565

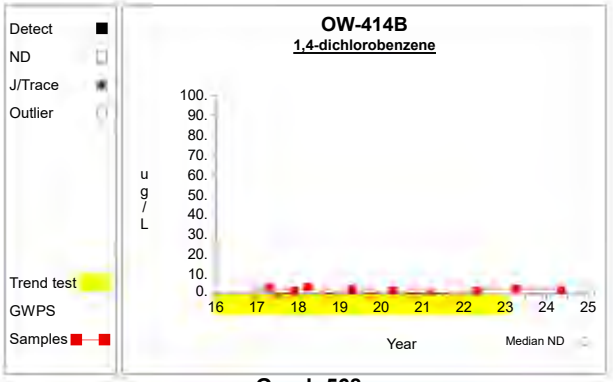


Graph 566

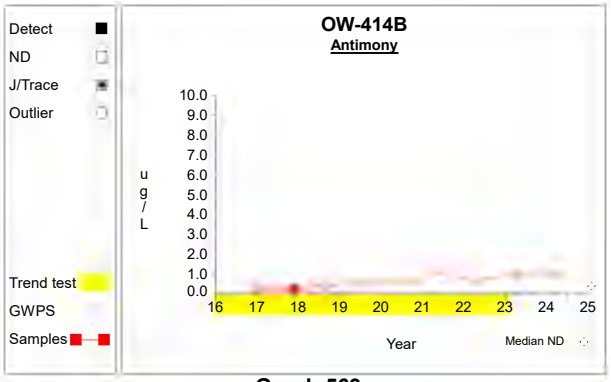


Graph 567

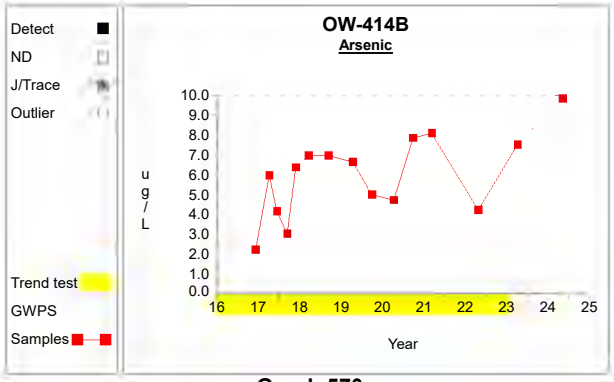
Time Series



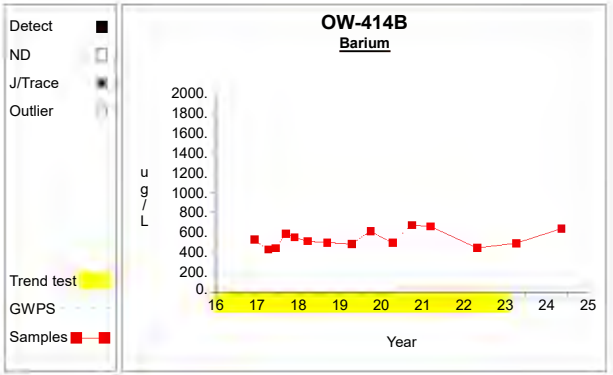
Graph 568



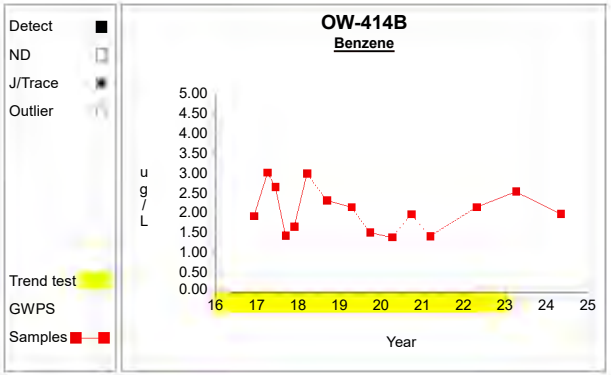
Graph 569



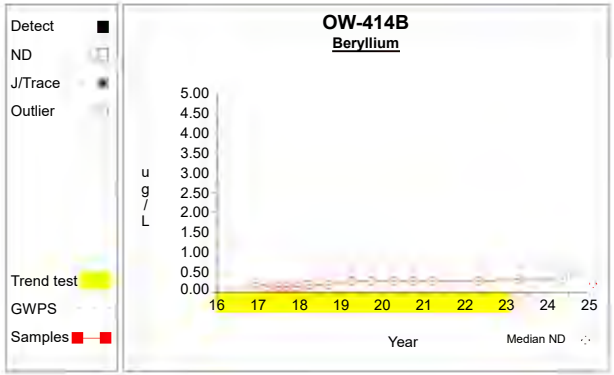
Graph 570



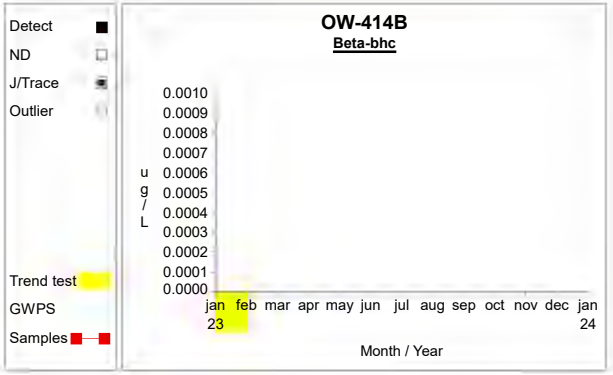
Graph 571



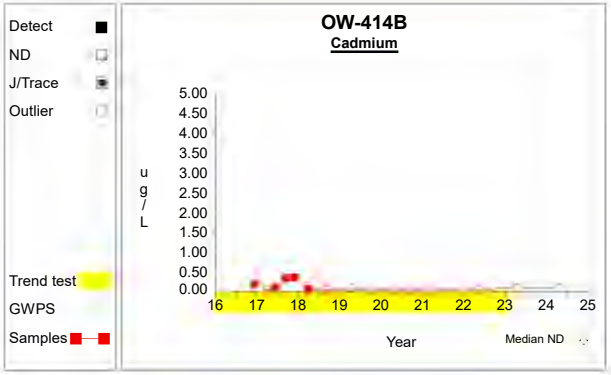
Graph 572



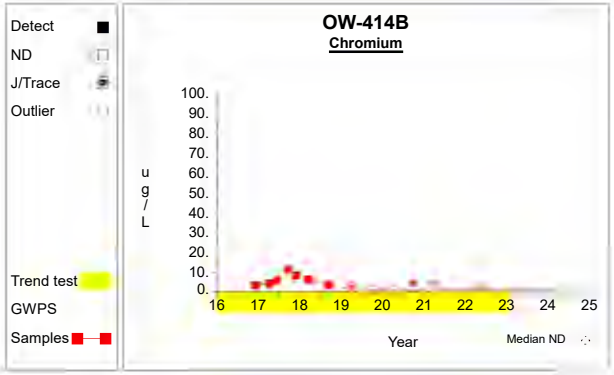
Graph 573



Graph 574

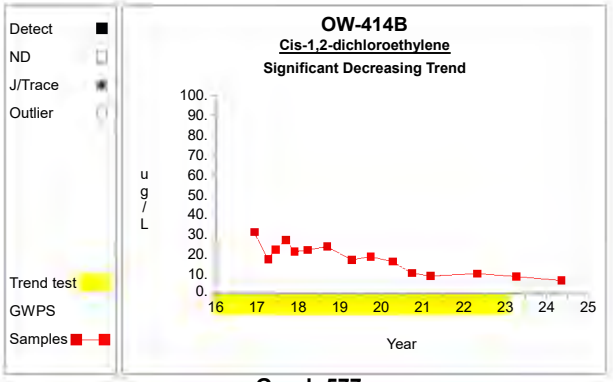


Graph 575

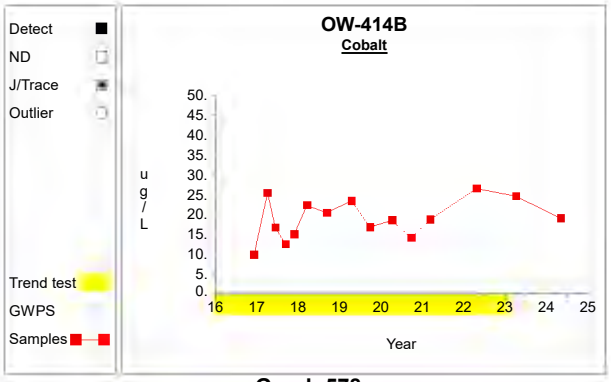


Graph 576

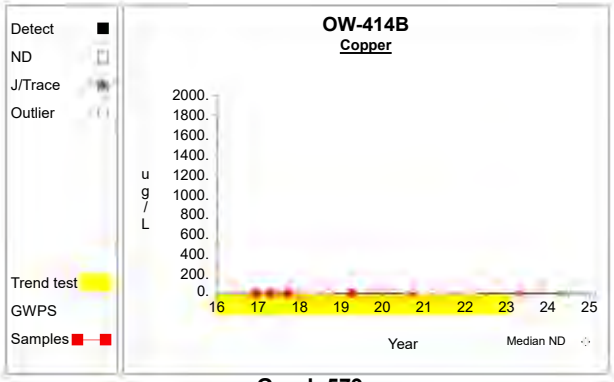
Time Series



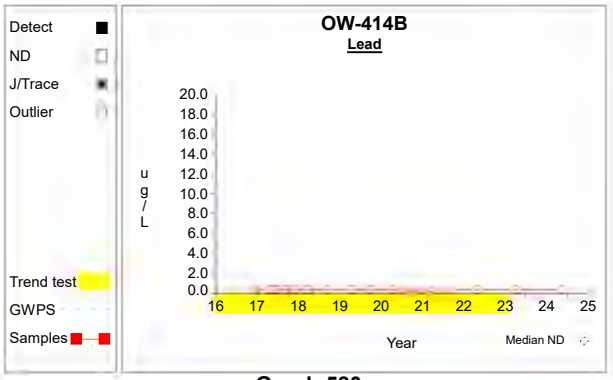
Graph 577



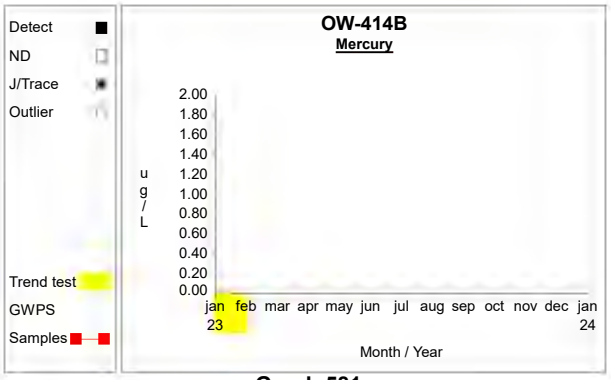
Graph 578



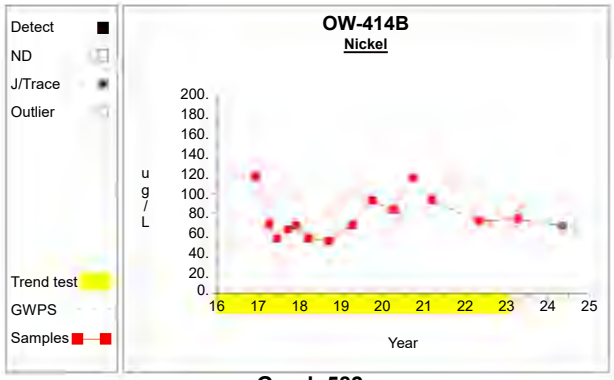
Graph 579



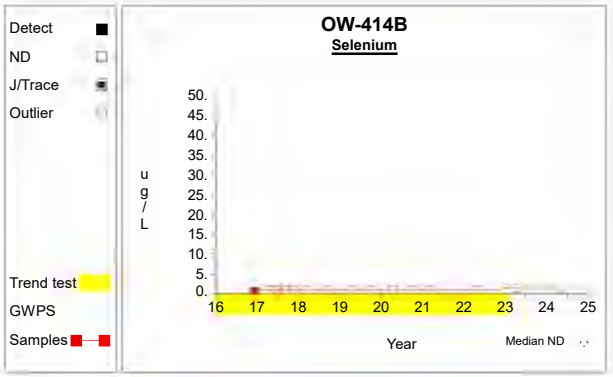
Graph 580



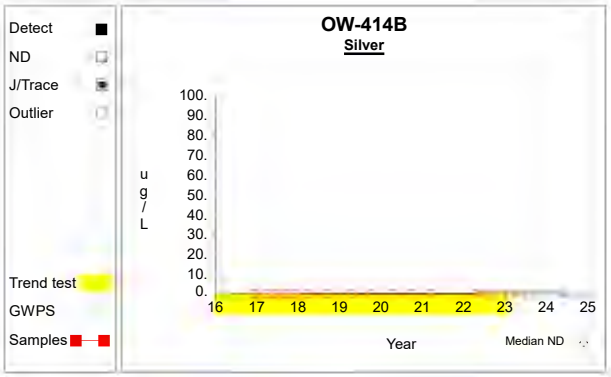
Graph 581



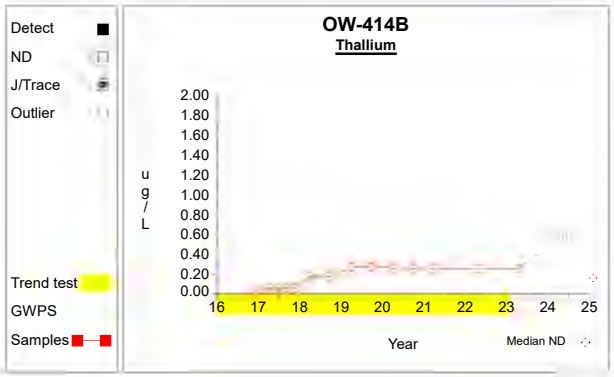
Graph 582



Graph 583

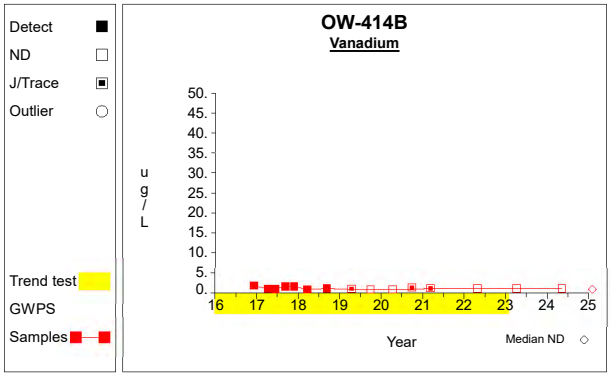


Graph 584

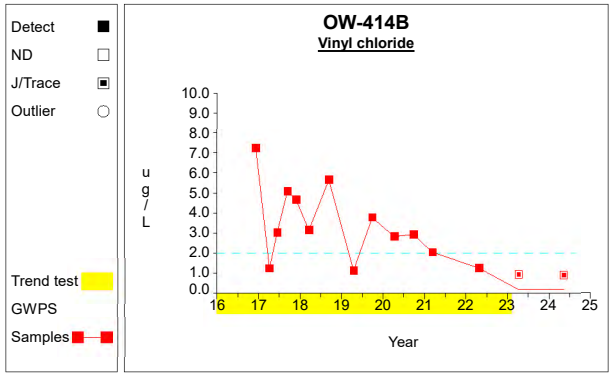


Graph 585

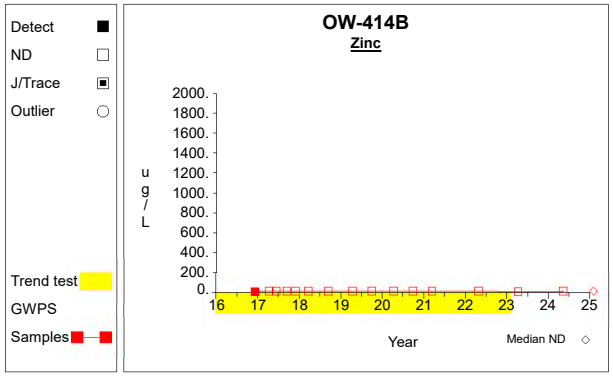
Time Series



Graph 586



Graph 587



Graph 588

Table 9

Historical Volatile Organic Compound Detections

Constituent	Well	Date	Identifier	Result	Limit	Units
1,1-dichloroethane	GUE-1	3/26/2010		5.690	1.000	ug/L
1,1-dichloroethane	GUE-1	5/05/2010		4.450	1.000	ug/L
1,1-dichloroethane	GUE-1	6/01/2010		3.910	1.000	ug/L
1,1-dichloroethane	GUE-1	9/30/2010		2.880	1.000	ug/L
1,1-dichloroethane	GUE-1	12/28/2010		2.510	1.000	ug/L
1,1-dichloroethane	GUE-1	5/03/2011		2.450	1.000	ug/L
1,1-dichloroethane	GUE-1	11/07/2011		2.430	.210	ug/L
1,1-dichloroethane	GUE-1	4/29/2013		.479	.210	ug/L
1,1-dichloroethane	GUE-1	10/22/2013		1.060	.210	ug/L
1,1-dichloroethane	GUE-1	3/20/2014		.558	.210	ug/L
1,1-dichloroethane	GUE-1	9/18/2018		.222	.220	ug/L
2-butanone	GUE-1	12/07/2012		27.700	.470	ug/L
2-butanone	GUE-1	4/29/2013		.749	.470	ug/L
2-butanone	GUE-1	8/28/2015		4.710	.470	ug/L
2-butanone	GUE-1	3/11/2016		2.490	.470	ug/L
2-butanone	GUE-1	3/23/2018		2.220	1.040	ug/L
2-hexanone	GUE-1	12/07/2012		2.41	.20	ug/L
4-methyl-2-pentanone	GUE-1	12/07/2012		.30	.22	ug/L
Acetone	GUE-1	11/07/2011		4.59	1.79	ug/L
Acetone	GUE-1	12/07/2012		50.70	1.79	ug/L
Acetone	GUE-1	4/29/2013		1.86	1.79	ug/L
Acetone	GUE-1	3/13/2015		2.56	1.79	ug/L
Acetone	GUE-1	3/11/2016		2.54	1.79	ug/L
Acetone	GUE-1	3/23/2018		5.02	1.79	ug/L
Acetone	GUE-1	9/18/2018		4.57	3.10	ug/L
Benzene	GUE-1	12/07/2012		.210	.110	ug/L
Benzene	GUE-1	3/11/2016		.262	.110	ug/L
Benzene	GUE-1	3/23/2018		.341	.110	ug/L
Cis-1,2-dichloroethylene	GUE-1	3/26/2010		3.440	2.000	ug/L
Cis-1,2-dichloroethylene	GUE-1	5/05/2010		4.130	1.000	ug/L
Cis-1,2-dichloroethylene	GUE-1	6/01/2010		4.240	1.000	ug/L
Cis-1,2-dichloroethylene	GUE-1	9/30/2010		2.560	1.000	ug/L
Cis-1,2-dichloroethylene	GUE-1	12/28/2010		2.110	1.000	ug/L
Cis-1,2-dichloroethylene	GUE-1	5/03/2011		2.140	1.000	ug/L
Cis-1,2-dichloroethylene	GUE-1	11/07/2011		2.600	.130	ug/L
Cis-1,2-dichloroethylene	GUE-1	5/08/2012		.160	.130	ug/L
Cis-1,2-dichloroethylene	GUE-1	4/29/2013		.416	.130	ug/L
Cis-1,2-dichloroethylene	GUE-1	10/22/2013		1.390	.130	ug/L
Cis-1,2-dichloroethylene	GUE-1	3/20/2014		.456	.130	ug/L
Cis-1,2-dichloroethylene	GUE-1	3/23/2018		.230	.130	ug/L
Dichloromethane	GUE-1	12/07/2012		.760	.170	ug/L
Dichloromethane	GUE-1	3/20/2014		.602	.170	ug/L
Dichloromethane	GUE-1	3/11/2016		.456	.170	ug/L
Dichloromethane	GUE-1	9/26/2016		.312	.170	ug/L
Dichloromethane	GUE-1	3/17/2017		.500	.170	ug/L
Dichloromethane	GUE-1	3/23/2018		.542	.170	ug/L
Ethylbenzene	GUE-1	3/11/2016		1.33	.21	ug/L
Ethylbenzene	GUE-1	3/23/2018		1.42	.21	ug/L
M,p-xylene	GUE-1	3/11/2016		2.97	.12	ug/L
M,p-xylene	GUE-1	3/23/2018		3.14	.12	ug/L
O-xylene	GUE-1	3/11/2016		1.020	.130	ug/L
O-xylene	GUE-1	3/23/2018		.945	.130	ug/L
Toluene	GUE-1	12/07/2012		.16	.15	ug/L
Toluene	GUE-1	3/11/2016		4.68	.15	ug/L
Toluene	GUE-1	3/23/2018		6.21	.15	ug/L
Toluene	GUE-1	4/03/2019		3.09	.43	ug/L
Trichloroethylene	GUE-1	5/05/2010		1.07	1.00	ug/L
Trichloroethylene	GUE-1	6/01/2010		1.59	1.00	ug/L
Trichloroethylene	GUE-1	11/07/2011		.56	.19	ug/L
Vinyl chloride	GUE-1	11/07/2011		.220	.100	ug/L
Vinyl chloride	GUE-1	3/11/2016		.104	.100	ug/L
Xylenes	GUE-1	3/11/2016		3.99	.13	ug/L
Xylenes	GUE-1	3/23/2018		4.09	.13	ug/L
1,1-dichloroethane	GUE-2	3/20/2014		.445	.210	ug/L
1,1-dichloroethane	GUE-2	9/08/2014		1.120	.210	ug/L

Detections are shown for the constituents and sample points selected for the analysis
The Limit column refers to the laboratory reporting limit

Table 9

Historical Volatile Organic Compound Detections

Constituent	Well	Date	Identifier	Result	Limit	Units
1,1-dichloroethane	GUE-2	3/13/2015		1.190	.210	ug/L
1,1-dichloroethane	GUE-2	8/20/2015		1.180	.210	ug/L
1,1-dichloroethane	GUE-2	3/11/2016		.842	.210	ug/L
1,1-dichloroethane	GUE-2	3/22/2017		.772	.210	ug/L
1,1-dichloroethane	GUE-2	9/22/2017		.661	.210	ug/L
1,1-dichloroethane	GUE-2	3/16/2018		.415	.210	ug/L
1,1-dichloroethane	GUE-2	9/14/2018		.720	.220	ug/L
1,2-dichloroethane	GUE-2	3/16/2018		.254	.180	ug/L
1,4-dichlorobenzene	GUE-2	9/22/2017		.477	.200	ug/L
1,4-dichlorobenzene	GUE-2	3/16/2018		.415	.200	ug/L
1,4-dichlorobenzene	GUE-2	9/14/2018		.621	.230	ug/L
2-butanone	GUE-2	3/11/2016		.78	.47	ug/L
2-butanone	GUE-2	3/16/2018		2.43	1.04	ug/L
Acetone	GUE-2	10/22/2013		2.12	1.79	ug/L
Acetone	GUE-2	3/20/2014		2.11	1.79	ug/L
Acetone	GUE-2	3/13/2015		7.81	1.79	ug/L
Acetone	GUE-2	3/22/2017		4.81	1.79	ug/L
Acetone	GUE-2	9/22/2017		6.01	1.79	ug/L
Acetone	GUE-2	3/16/2018		7.35	1.79	ug/L
Acetone	GUE-2	9/14/2018		5.84	3.10	ug/L
Acetone	GUE-2	9/25/2019		13.10	3.10	ug/L
Benzene	GUE-2	1/20/2014		.870	.110	ug/L
Benzene	GUE-2	3/20/2014		.568	.110	ug/L
Benzene	GUE-2	9/08/2014		2.580	.110	ug/L
Benzene	GUE-2	3/13/2015		1.470	.110	ug/L
Benzene	GUE-2	8/20/2015		2.530	.110	ug/L
Benzene	GUE-2	3/11/2016		1.290	.110	ug/L
Benzene	GUE-2	3/22/2017		1.170	.110	ug/L
Benzene	GUE-2	9/22/2017		.773	.110	ug/L
Benzene	GUE-2	3/16/2018		.458	.110	ug/L
Benzene	GUE-2	9/14/2018		.948	.220	ug/L
Benzene	GUE-2	4/04/2019		1.380	.220	ug/L
Benzene	GUE-2	9/25/2019		1.700	.220	ug/L
Benzene	GUE-2	4/02/2020		.928	.220	ug/L
Benzene	GUE-2	10/06/2020		1.500	.220	ug/L
Benzene	GUE-2	4/01/2021		.536	.220	ug/L
Benzene	GUE-2	5/02/2022		1.240	.220	ug/L
Benzene	GUE-2	11/02/2022		1.270	.220	ug/L
Benzene	GUE-2	3/31/2023		1.200	.220	ug/L
Benzene	GUE-2	5/07/2024		1.270	.220	ug/L
Bromomethane	GUE-2	9/22/2017		.387	.220	ug/L
Carbon disulfide	GUE-2	8/20/2015		.174	.150	ug/L
Chloroethane	GUE-2	9/08/2014		.631	.150	ug/L
Chloroethane	GUE-2	3/13/2015		1.260	.150	ug/L
Chloroethane	GUE-2	8/20/2015		2.970	.150	ug/L
Chloroethane	GUE-2	3/11/2016		.939	.150	ug/L
Chloroethane	GUE-2	3/22/2017		1.180	.150	ug/L
Chloroethane	GUE-2	9/22/2017		1.350	.150	ug/L
Chloromethane	GUE-2	3/11/2016		.45	.31	ug/L
Cis-1,2-dichloroethylene	GUE-2	10/22/2013		.791	.130	ug/L
Cis-1,2-dichloroethylene	GUE-2	1/20/2014		3.560	.130	ug/L
Cis-1,2-dichloroethylene	GUE-2	3/20/2014		2.290	.130	ug/L
Cis-1,2-dichloroethylene	GUE-2	9/08/2014		7.360	.130	ug/L
Cis-1,2-dichloroethylene	GUE-2	3/13/2015		5.760	.130	ug/L
Cis-1,2-dichloroethylene	GUE-2	8/20/2015		7.050	.130	ug/L
Cis-1,2-dichloroethylene	GUE-2	3/11/2016		3.560	.130	ug/L
Cis-1,2-dichloroethylene	GUE-2	3/22/2017		3.270	.130	ug/L
Cis-1,2-dichloroethylene	GUE-2	9/22/2017		1.790	.130	ug/L
Cis-1,2-dichloroethylene	GUE-2	3/16/2018		1.030	.130	ug/L
Cis-1,2-dichloroethylene	GUE-2	9/14/2018		2.220	.210	ug/L
Cis-1,2-dichloroethylene	GUE-2	4/04/2019		3.720	.210	ug/L
Cis-1,2-dichloroethylene	GUE-2	9/25/2019		4.270	.210	ug/L
Cis-1,2-dichloroethylene	GUE-2	4/02/2020		3.100	.210	ug/L
Cis-1,2-dichloroethylene	GUE-2	10/06/2020		4.050	.210	ug/L
Cis-1,2-dichloroethylene	GUE-2	4/01/2021		1.020	.210	ug/L

Detections are shown for the constituents and sample points selected for the analysis
The Limit column refers to the laboratory reporting limit

Table 9

Historical Volatile Organic Compound Detections

Constituent	Well	Date	Identifier	Result	Limit	Units
Cis-1,2-dichloroethylene	GUE-2	5/02/2022		3.420	.210	ug/L
Cis-1,2-dichloroethylene	GUE-2	11/02/2022		3.560	.210	ug/L
Cis-1,2-dichloroethylene	GUE-2	3/31/2023		2.930	.210	ug/L
Cis-1,2-dichloroethylene	GUE-2	5/07/2024		2.920	.210	ug/L
Dichloromethane	GUE-2	1/20/2014		.556	.170	ug/L
Dichloromethane	GUE-2	3/20/2014		.428	.170	ug/L
Dichloromethane	GUE-2	3/13/2015		.392	.170	ug/L
Dichloromethane	GUE-2	3/11/2016		.346	.170	ug/L
Dichloromethane	GUE-2	9/15/2016		.753	.170	ug/L
Dichloromethane	GUE-2	3/22/2017		.840	.170	ug/L
Dichloromethane	GUE-2	3/16/2018		1.040	.170	ug/L
Trans-1,2-dichloroethylene	GUE-2	9/08/2014		.340	.210	ug/L
Trans-1,2-dichloroethylene	GUE-2	8/20/2015		.804	.210	ug/L
Trans-1,2-dichloroethylene	GUE-2	3/11/2016		.506	.210	ug/L
Trans-1,2-dichloroethylene	GUE-2	3/22/2017		.405	.210	ug/L
Trans-1,2-dichloroethylene	GUE-2	3/16/2018		.213	.210	ug/L
Trichloroethylene	GUE-2	1/20/2014		.672	.190	ug/L
Trichloroethylene	GUE-2	3/20/2014		.395	.190	ug/L
Trichloroethylene	GUE-2	9/08/2014		1.050	.190	ug/L
Trichloroethylene	GUE-2	3/13/2015		1.210	.190	ug/L
Trichloroethylene	GUE-2	8/20/2015		1.350	.190	ug/L
Trichloroethylene	GUE-2	3/11/2016		.685	.190	ug/L
Trichloroethylene	GUE-2	3/22/2017		.732	.190	ug/L
Trichloroethylene	GUE-2	9/22/2017		.514	.190	ug/L
Trichloroethylene	GUE-2	3/16/2018		.348	.190	ug/L
Vinyl chloride	GUE-2	1/20/2014		.145	.100	ug/L
Vinyl chloride	GUE-2	9/08/2014		1.220	.100	ug/L
Vinyl chloride	GUE-2	3/13/2015		.590	.100	ug/L
Vinyl chloride	GUE-2	8/20/2015		1.240	.100	ug/L
Vinyl chloride	GUE-2	3/11/2016		.598	.100	ug/L
Vinyl chloride	GUE-2	3/22/2017		.287	.100	ug/L
Vinyl chloride	GUE-2	9/22/2017		.190	.100	ug/L
1,1-dichloroethane	GUX-1	11/07/2011		.24	.21	ug/L
1,1-dichloroethane	GUX-1	5/08/2012		.29	.21	ug/L
2-butanone	GUX-1	5/08/2012		.65	.47	ug/L
Acetone	GUX-1	2/22/2011		20.70	10.00	ug/L
Acetone	GUX-1	3/22/2017		8.61	1.79	ug/L
Acetone	GUX-1	9/22/2017		3.14	1.79	ug/L
Acetone	GUX-1	3/19/2018		3.90	1.79	ug/L
Benzene	GUX-1	3/26/2010		2.770	.500	ug/L
Benzene	GUX-1	6/01/2010		1.700	.500	ug/L
Benzene	GUX-1	7/28/2010		1.970	.500	ug/L
Benzene	GUX-1	9/30/2010		1.970	.500	ug/L
Benzene	GUX-1	12/28/2010		.970	.500	ug/L
Benzene	GUX-1	2/22/2011		1.330	.500	ug/L
Benzene	GUX-1	5/03/2011		2.490	.500	ug/L
Benzene	GUX-1	8/26/2011		1.180	.500	ug/L
Benzene	GUX-1	11/07/2011		2.370	.110	ug/L
Benzene	GUX-1	5/08/2012		3.380	.110	ug/L
Benzene	GUX-1	12/07/2012		3.790	.110	ug/L
Benzene	GUX-1	4/29/2013		4.070	.110	ug/L
Benzene	GUX-1	10/22/2013		2.130	.110	ug/L
Benzene	GUX-1	3/20/2014		2.260	.110	ug/L
Benzene	GUX-1	10/03/2014		1.970	.110	ug/L
Benzene	GUX-1	3/13/2015		1.590	.110	ug/L
Benzene	GUX-1	8/28/2015		1.790	.110	ug/L
Benzene	GUX-1	3/11/2016		1.800	.110	ug/L
Benzene	GUX-1	9/19/2016		1.590	.110	ug/L
Benzene	GUX-1	3/22/2017		.957	.110	ug/L
Benzene	GUX-1	9/22/2017		.493	.110	ug/L
Benzene	GUX-1	3/19/2018		1.580	.110	ug/L
Benzene	GUX-1	9/06/2018		1.880	.220	ug/L
Benzene	GUX-1	9/20/2019		.566	.220	ug/L
Benzene	GUX-1	5/02/2022		.626	.220	ug/L
Bromomethane	GUX-1	3/22/2017		.239	.220	ug/L

Detections are shown for the constituents and sample points selected for the analysis
The Limit column refers to the laboratory reporting limit

Table 9

Historical Volatile Organic Compound Detections

Constituent	Well	Date	Identifier	Result	Limit	Units
Carbon disulfide	GUX-1	12/07/2012		1.020	.150	ug/L
Carbon disulfide	GUX-1	4/29/2013		2.680	.150	ug/L
Carbon disulfide	GUX-1	10/22/2013		.405	.150	ug/L
Carbon disulfide	GUX-1	3/20/2014		1.670	.150	ug/L
Chloroethane	GUX-1	5/08/2012		.830	.150	ug/L
Chloroethane	GUX-1	4/29/2013		.963	.150	ug/L
Cis-1,2-dichloroethylene	GUX-1	6/01/2010		1.760	1.000	ug/L
Cis-1,2-dichloroethylene	GUX-1	7/28/2010		1.060	1.000	ug/L
Cis-1,2-dichloroethylene	GUX-1	9/30/2010		1.060	1.000	ug/L
Cis-1,2-dichloroethylene	GUX-1	11/07/2011		1.150	.130	ug/L
Cis-1,2-dichloroethylene	GUX-1	5/08/2012		.470	.130	ug/L
Cis-1,2-dichloroethylene	GUX-1	12/07/2012		.710	.130	ug/L
Cis-1,2-dichloroethylene	GUX-1	4/29/2013		.631	.130	ug/L
Cis-1,2-dichloroethylene	GUX-1	10/22/2013		.748	.130	ug/L
Cis-1,2-dichloroethylene	GUX-1	3/20/2014		.808	.130	ug/L
Cis-1,2-dichloroethylene	GUX-1	10/03/2014		.698	.130	ug/L
Cis-1,2-dichloroethylene	GUX-1	3/13/2015		.426	.130	ug/L
Cis-1,2-dichloroethylene	GUX-1	8/28/2015		.667	.130	ug/L
Cis-1,2-dichloroethylene	GUX-1	3/11/2016		.928	.130	ug/L
Cis-1,2-dichloroethylene	GUX-1	9/19/2016		.577	.130	ug/L
Cis-1,2-dichloroethylene	GUX-1	3/22/2017		.448	.130	ug/L
Cis-1,2-dichloroethylene	GUX-1	9/22/2017		.310	.130	ug/L
Cis-1,2-dichloroethylene	GUX-1	3/19/2018		.259	.130	ug/L
Cis-1,2-dichloroethylene	GUX-1	9/06/2018		.480	.210	ug/L
Dichloromethane	GUX-1	5/08/2012		.170	.170	ug/L
Dichloromethane	GUX-1	12/07/2012		.440	.170	ug/L
Dichloromethane	GUX-1	3/20/2014		.527	.170	ug/L
Dichloromethane	GUX-1	3/13/2015		.241	.170	ug/L
Dichloromethane	GUX-1	3/22/2017		1.530	.170	ug/L
Dichloromethane	GUX-1	3/19/2018		.367	.170	ug/L
Vinyl chloride	GUX-1	6/01/2010		1.040	1.000	ug/L
Vinyl chloride	GUX-1	11/07/2011		.480	.100	ug/L
Vinyl chloride	GUX-1	5/08/2012		.230	.100	ug/L
Vinyl chloride	GUX-1	12/07/2012		.370	.100	ug/L
Vinyl chloride	GUX-1	4/29/2013		.534	.100	ug/L
Vinyl chloride	GUX-1	3/20/2014		.182	.100	ug/L
Vinyl chloride	GUX-1	8/28/2015		.322	.100	ug/L
Vinyl chloride	GUX-1	9/22/2017		.378	.100	ug/L
1,2-dibromo-3-chloropropane	MW-308B	5/09/2012		.45	.12	ug/L
Acetone	MW-308B	11/04/2011		2.34	1.79	ug/L
Acetone	MW-308B	3/20/2017		3.28	1.79	ug/L
Acetone	MW-308B	9/07/2017		3.43	1.79	ug/L
Acetone	MW-308B	3/15/2018		6.82	1.79	ug/L
Benzene	MW-308B	11/04/2011		.18	.11	ug/L
Bromomethane	MW-308B	9/07/2017		.351	.220	ug/L
Chloromethane	MW-308B	5/09/2012		.89	.31	ug/L
Dichloromethane	MW-308B	3/18/2014		.713	.170	ug/L
Dichloromethane	MW-308B	3/20/2017		.469	.170	ug/L
Dichloromethane	MW-308B	9/07/2017		.323	.170	ug/L
Toluene	MW-308B	3/20/2017		.162	.150	ug/L
Toluene	MW-308B	3/15/2018		.231	.150	ug/L
Tribromomethane	MW-308B	10/14/2013		.317	.140	ug/L
2-butanone	MW-312B	5/10/2012		.59	.47	ug/L
Acetone	MW-312B	3/28/2017		2.10	1.79	ug/L
Acetone	MW-312B	9/11/2017		3.64	1.79	ug/L
Acetone	MW-312B	3/13/2018		2.72	1.79	ug/L
Benzene	MW-312B	3/18/2015		.579	.110	ug/L
Benzene	MW-312B	8/27/2015		.476	.110	ug/L
Benzene	MW-312B	3/08/2016		.127	.110	ug/L
Benzene	MW-312B	3/26/2019		1.340	.220	ug/L
Benzene	MW-312B	6/19/2019		1.390	.220	ug/L
Benzene	MW-312B	9/17/2019		.695	.220	ug/L
Bromomethane	MW-312B	9/13/2016		.264	.220	ug/L
Bromomethane	MW-312B	9/11/2017		.280	.220	ug/L
Bromomethane	MW-312B	3/13/2018		.235	.220	ug/L

Detections are shown for the constituents and sample points selected for the analysis
The Limit column refers to the laboratory reporting limit

Table 9

Historical Volatile Organic Compound Detections

Constituent	Well	Date	Identifier	Result	Limit	Units
Chloroethane	MW-312B	9/13/2016		1.290	.150	ug/L
Chloroethane	MW-312B	9/11/2017		.431	.150	ug/L
Dichloromethane	MW-312B	12/06/2012		.230	.170	ug/L
Dichloromethane	MW-312B	3/19/2014		.466	.170	ug/L
Dichloromethane	MW-312B	3/28/2017		.429	.170	ug/L
Dichloromethane	MW-312B	9/11/2017		.194	.170	ug/L
Toluene	MW-312B	12/06/2012		.15	.15	ug/L
Vinyl chloride	MW-312B	9/13/2016		.130	.100	ug/L
Vinyl chloride	MW-312B	9/11/2017		.102	.100	ug/L
2-butanone	MW-319B	5/10/2012		.73	.47	ug/L
4-methyl-2-pentanone	MW-319B	5/10/2012		.54	.22	ug/L
4-methyl-2-pentanone	MW-319B	12/03/2012		.94	.22	ug/L
Acetone	MW-319B	12/03/2012		5.04	1.79	ug/L
Acetone	MW-319B	9/13/2016		2.13	1.79	ug/L
Acetone	MW-319B	9/12/2017		2.11	1.79	ug/L
Acetone	MW-319B	3/19/2018		2.35	1.79	ug/L
Bromomethane	MW-319B	3/22/2016		.386	.220	ug/L
Bromomethane	MW-319B	9/13/2016		.288	.220	ug/L
Bromomethane	MW-319B	9/12/2017		.308	.220	ug/L
Chloroethane	MW-319B	12/03/2012		.19	.15	ug/L
Dichloromethane	MW-319B	3/21/2014		.725	.170	ug/L
Dichloromethane	MW-319B	9/13/2016		.473	.170	ug/L
Dichloromethane	MW-319B	3/21/2017		.369	.170	ug/L
Dichloromethane	MW-319B	3/19/2018		.435	.170	ug/L
2-butanone	MW-409B	5/10/2012		.63	.47	ug/L
2-butanone	MW-409B	9/11/2018		5.34	2.10	ug/L
Acetone	MW-409B	11/07/2011		2.80	1.79	ug/L
Acetone	MW-409B	8/26/2014		2.32	1.79	ug/L
Acetone	MW-409B	3/21/2017		2.40	1.79	ug/L
Acetone	MW-409B	3/28/2018		4.98	1.79	ug/L
Acetone	MW-409B	9/11/2018		5.01	3.10	ug/L
Benzene	MW-409B	11/07/2011		.320	.110	ug/L
Benzene	MW-409B	2/22/2012		.300	.110	ug/L
Benzene	MW-409B	5/10/2012		.570	.110	ug/L
Benzene	MW-409B	12/03/2012		.580	.110	ug/L
Benzene	MW-409B	4/26/2013		.589	.110	ug/L
Benzene	MW-409B	10/23/2013		.445	.110	ug/L
Benzene	MW-409B	3/20/2014		.394	.110	ug/L
Benzene	MW-409B	8/26/2014		.534	.110	ug/L
Benzene	MW-409B	2/24/2015		.385	.110	ug/L
Benzene	MW-409B	8/20/2015		.395	.110	ug/L
Benzene	MW-409B	3/09/2016		.268	.110	ug/L
Benzene	MW-409B	9/27/2016		.302	.110	ug/L
Benzene	MW-409B	3/21/2017		.378	.110	ug/L
Benzene	MW-409B	9/11/2017		.254	.110	ug/L
Bis(2-ethylhexyl)phthalate	MW-409B	3/20/2014		.505	.406	ug/L
Bis(2-ethylhexyl)phthalate	MW-409B	6/11/2014		.594	.398	ug/L
Bis(2-ethylhexyl)phthalate	MW-409B	2/24/2015		1.940	.419	ug/L
Bis(2-ethylhexyl)phthalate	MW-409B	9/27/2016		.659	.438	ug/L
Bis(2-ethylhexyl)phthalate	MW-409B	9/11/2017		2.690	.481	ug/L
Bromomethane	MW-409B	9/11/2017		.274	.220	ug/L
Carbon disulfide	MW-409B	10/23/2013		.301	.150	ug/L
Chloroethane	MW-409B	2/22/2012		.520	.150	ug/L
Chloroethane	MW-409B	12/03/2012		1.260	.150	ug/L
Chloroethane	MW-409B	10/23/2013		2.430	.150	ug/L
Chloroethane	MW-409B	3/20/2014		.833	.150	ug/L
Cis-1,2-dichloroethylene	MW-409B	2/23/2011		3.690	1.000	ug/L
Cis-1,2-dichloroethylene	MW-409B	11/07/2011		.410	.130	ug/L
Cis-1,2-dichloroethylene	MW-409B	2/22/2012		.360	.130	ug/L
Cis-1,2-dichloroethylene	MW-409B	5/10/2012		.760	.130	ug/L
Cis-1,2-dichloroethylene	MW-409B	12/03/2012		.620	.130	ug/L
Cis-1,2-dichloroethylene	MW-409B	4/26/2013		.692	.130	ug/L
Cis-1,2-dichloroethylene	MW-409B	10/23/2013		.488	.130	ug/L
Cis-1,2-dichloroethylene	MW-409B	3/20/2014		.577	.130	ug/L
Cis-1,2-dichloroethylene	MW-409B	8/26/2014		.251	.130	ug/L

Detections are shown for the constituents and sample points selected for the analysis
The Limit column refers to the laboratory reporting limit

Table 9

Historical Volatile Organic Compound Detections

Constituent	Well	Date	Identifier	Result	Limit	Units
Cis-1,2-dichloroethylene	MW-409B	8/20/2015		.211	.130	ug/L
Cis-1,2-dichloroethylene	MW-409B	9/27/2016		.386	.130	ug/L
Cis-1,2-dichloroethylene	MW-409B	3/21/2017		.296	.130	ug/L
Cis-1,2-dichloroethylene	MW-409B	9/11/2017		.244	.130	ug/L
Dichloromethane	MW-409B	2/22/2012		.550	.170	ug/L
Dichloromethane	MW-409B	3/20/2014		.651	.170	ug/L
Dichloromethane	MW-409B	8/26/2014		.456	.170	ug/L
Dichloromethane	MW-409B	9/27/2016		.415	.170	ug/L
Dieldrin	MW-409B	9/11/2017		.00467	.00250	ug/L
Dimethoate	MW-409B	9/11/2017		1.200	.333	ug/L
Di-n-butyl phthalate	MW-409B	9/11/2017		1.43	.63	ug/L
Endosulfan i	MW-409B	3/20/2014		.01650	.00211	ug/L
Endosulfan i	MW-409B	6/11/2014		.00528	.00220	ug/L
Endrin	MW-409B	3/20/2014		.00219	.00200	ug/L
Endrin	MW-409B	12/16/2014		.00251	.00190	ug/L
Endrin	MW-409B	9/11/2017		.00253	.00238	ug/L
Endrin aldehyde	MW-409B	9/11/2017		.01140	.00913	ug/L
Heptachlor	MW-409B	3/20/2014		.00457	.00274	ug/L
Heptachlor	MW-409B	12/16/2014		.00364	.00260	ug/L
Heptachlor	MW-409B	9/11/2017		.00392	.00325	ug/L
Iodomethane	MW-409B	3/20/2014		3.71	.80	ug/L
Methoxychlor	MW-409B	9/11/2018		.00240	.00236	ug/L
Toluene	MW-409B	11/07/2011		.620	.150	ug/L
Toluene	MW-409B	3/21/2017		.242	.150	ug/L
Vinyl chloride	MW-409B	11/07/2011		.270	.100	ug/L
Vinyl chloride	MW-409B	2/22/2012		.120	.100	ug/L
Vinyl chloride	MW-409B	5/10/2012		.330	.100	ug/L
Vinyl chloride	MW-409B	12/03/2012		.360	.100	ug/L
Vinyl chloride	MW-409B	4/26/2013		.125	.100	ug/L
Acetone	MW-501B	3/24/2017		1.92	1.79	ug/L
Acetone	MW-501B	9/14/2017		4.20	1.79	ug/L
Acetone	MW-501B	3/27/2018		2.43	1.79	ug/L
Bromomethane	MW-501B	9/14/2017		.294	.220	ug/L
Carbon disulfide	MW-501B	10/23/2013		.221	.150	ug/L
Dichloromethane	MW-501B	3/24/2017		.377	.170	ug/L
1,4-dichlorobenzene	MW-601B	9/03/2015		.439	.200	ug/L
Acetone	MW-601B	9/03/2015		4.40	1.79	ug/L
Acetone	MW-601B	12/17/2015		1.95	1.79	ug/L
Acetone	MW-601B	3/18/2016		2.02	1.79	ug/L
Acetone	MW-601B	3/28/2017		2.39	1.79	ug/L
Acetone	MW-601B	9/28/2017		5.51	1.79	ug/L
Acetone	MW-601B	4/09/2018		2.93	1.79	ug/L
Bromomethane	MW-601B	12/17/2015		.295	.220	ug/L
Dichloromethane	MW-601B	3/18/2016		.198	.170	ug/L
Dichloromethane	MW-601B	3/28/2017		.241	.170	ug/L
Acetone	MW-602B	3/18/2016		2.11	1.79	ug/L
Acetone	MW-602B	3/27/2017		1.91	1.79	ug/L
Acetone	MW-602B	9/25/2017		3.87	1.79	ug/L
Acetone	MW-602B	3/28/2018		3.80	1.79	ug/L
Dichloromethane	MW-602B	3/18/2016		.331	.170	ug/L
Dichloromethane	MW-602B	9/30/2016		.349	.170	ug/L
Dichloromethane	MW-602B	3/27/2017		.322	.170	ug/L
Dichloromethane	MW-602B	3/28/2018		.207	.170	ug/L
1,4-dichlorobenzene	MW-603B	9/03/2015		.331	.200	ug/L
2-butanone	MW-603B	9/03/2015		.94	.47	ug/L
Acetone	MW-603B	3/27/2017		1.92	1.79	ug/L
Acetone	MW-603B	9/25/2017		3.30	1.79	ug/L
Bromomethane	MW-603B	3/18/2016		.224	.220	ug/L
Bromomethane	MW-603B	9/28/2016		.359	.220	ug/L
Carbon disulfide	MW-603B	9/28/2016		.927	.150	ug/L
Carbon disulfide	MW-603B	3/27/2017		.293	.150	ug/L
Carbon disulfide	MW-603B	9/25/2017		.487	.150	ug/L
Dichloromethane	MW-603B	3/18/2016		.257	.170	ug/L
Dichloromethane	MW-603B	9/28/2016		.410	.170	ug/L
Dichloromethane	MW-603B	3/27/2017		.258	.170	ug/L

Detections are shown for the constituents and sample points selected for the analysis
The Limit column refers to the laboratory reporting limit

Table 9

Historical Volatile Organic Compound Detections

Constituent	Well	Date	Identifier	Result	Limit	Units
Dichloromethane	MW-603B	3/29/2018		.217	.170	ug/L
2-butanone	MW-604B	9/09/2015		.769	.470	ug/L
Acetone	MW-604B	3/18/2016		2.09	1.79	ug/L
Acetone	MW-604B	3/27/2017		3.72	1.79	ug/L
Acetone	MW-604B	9/25/2017		4.49	1.79	ug/L
Bromomethane	MW-604B	9/28/2016		.511	.220	ug/L
Bromomethane	MW-604B	9/25/2017		.408	.220	ug/L
Carbon disulfide	MW-604B	9/28/2016		.167	.150	ug/L
Dichloromethane	MW-604B	3/18/2016		.278	.170	ug/L
Dichloromethane	MW-604B	9/28/2016		.415	.170	ug/L
Dichloromethane	MW-604B	3/27/2017		.646	.170	ug/L
Dichloromethane	MW-604B	3/29/2018		.309	.170	ug/L
Acetone	MW-605B	6/26/2015		2.34	1.79	ug/L
Acetone	MW-605B	3/20/2017		3.52	1.79	ug/L
Acetone	MW-605B	9/06/2017		4.47	1.79	ug/L
Acetone	MW-605B	3/15/2018		2.73	1.79	ug/L
Bromomethane	MW-605B	9/06/2017		.702	.220	ug/L
Carbon disulfide	MW-605B	3/20/2017		.555	.150	ug/L
Chloromethane	MW-605B	3/18/2016		.544	.310	ug/L
Dichloromethane	MW-605B	3/18/2016		.268	.170	ug/L
Dichloromethane	MW-605B	9/15/2016		.544	.170	ug/L
Dichloromethane	MW-605B	3/20/2017		.646	.170	ug/L
Toluene	MW-605B	3/20/2017		.249	.150	ug/L
1,1-dichloroethane	OW-106B	12/10/2012		.35	.21	ug/L
Acetone	OW-106B	3/28/2017		2.94	1.79	ug/L
Acetone	OW-106B	9/19/2017		5.65	1.79	ug/L
Benzene	OW-106B	3/29/2001		1.10	.50	ug/L
Benzene	OW-106B	12/10/2012		.42	.11	ug/L
Bromomethane	OW-106B	9/19/2017		.614	.220	ug/L
Carbon tetrachloride	OW-106B	5/08/2012		.24	.24	ug/L
Chloroethane	OW-106B	12/10/2012		.42	.15	ug/L
Cis-1,2-dichloroethylene	OW-106B	12/10/2012		.720	.130	ug/L
Cis-1,2-dichloroethylene	OW-106B	5/06/2013		.183	.130	ug/L
Cis-1,2-dichloroethylene	OW-106B	3/20/2014		.510	.130	ug/L
Dichloromethane	OW-106B	12/10/2012		.580	.170	ug/L
Dichloromethane	OW-106B	3/20/2014		.543	.170	ug/L
Dichloromethane	OW-106B	3/28/2017		.411	.170	ug/L
Vinyl chloride	OW-106B	12/10/2012		.210	.100	ug/L
Vinyl chloride	OW-106B	3/20/2014		.237	.100	ug/L
1,2-dichlorobenzene	OW-108B	5/01/2013		.468	.140	ug/L
1,2-dichloroethane	OW-108B	4/03/1992		.4	.3	ug/L
2-butanone	OW-108B	5/09/2012		.30	.16	ug/L
Acetone	OW-108B	5/01/2013		3.34	1.79	ug/L
Acetone	OW-108B	3/24/2017		3.91	1.79	ug/L
Acetone	OW-108B	9/12/2017		5.06	1.79	ug/L
Benzene	OW-108B	4/03/1992		.1	.1	ug/L
Bromomethane	OW-108B	9/12/2017		.381	.220	ug/L
Carbon tetrachloride	OW-108B	10/18/1991		1.5	.5	ug/L
Chloroethane	OW-108B	12/11/2012		.15	.15	ug/L
Dichloromethane	OW-108B	12/11/2012		.220	.170	ug/L
Dichloromethane	OW-108B	3/20/2014		.723	.170	ug/L
Dichloromethane	OW-108B	3/24/2017		.408	.170	ug/L
Trichloroethylene	OW-108B	10/01/1993		2.6	1.0	ug/L
Xylenes	OW-108B	11/14/2011		.17	.13	ug/L
2-butanone	OW-113B	11/10/2011		.76	.47	ug/L
2-butanone	OW-113B	5/10/2012		.54	.47	ug/L
Acetone	OW-113B	3/22/2017		2.13	1.79	ug/L
Acetone	OW-113B	9/12/2017		3.62	1.79	ug/L
Acetone	OW-113B	3/19/2018		1.98	1.79	ug/L
Bromomethane	OW-113B	3/22/2016		.343	.220	ug/L
Bromomethane	OW-113B	9/12/2017		.328	.220	ug/L
Carbon disulfide	OW-113B	5/01/2013		.181	.150	ug/L
Chloroethane	OW-113B	1/14/2008		130	4	ug/L
Dichloromethane	OW-113B	12/07/2012		.230	.170	ug/L
Dichloromethane	OW-113B	3/21/2014		.954	.170	ug/L

Detections are shown for the constituents and sample points selected for the analysis
The Limit column refers to the laboratory reporting limit

Table 9

Historical Volatile Organic Compound Detections

Constituent	Well	Date	Identifier	Result	Limit	Units
Dichloromethane	OW-113B	3/22/2017		.468	.170	ug/L
Dichloromethane	OW-113B	3/19/2018		.333	.170	ug/L
Toluene	OW-113B	5/10/2012		.15	.15	ug/L
Xylenes	OW-113B	11/10/2011		.16	.13	ug/L
1,4-dichlorobenzene	OW-114B	11/08/2011		.320	.200	ug/L
1,4-dichlorobenzene	OW-114B	12/06/2012		.430	.200	ug/L
1,4-dichlorobenzene	OW-114B	3/18/2014		.353	.200	ug/L
2-acetylaminofluorene	OW-114B	3/18/2014		.932	.311	ug/L
2-butanone	OW-114B	11/08/2011		.73	.47	ug/L
2-butanone	OW-114B	5/11/2012		.56	.47	ug/L
3,3'-dimethylbenzidine	OW-114B	9/27/2017		2.050	.219	ug/L
4,4'-dde	OW-114B	8/27/2015		.00646	.00233	ug/L
4,4'-dde	OW-114B	9/27/2017		.01340	.00250	ug/L
4,4'-ddt	OW-114B	9/27/2017		.05810	.00452	ug/L
4,4'-ddt	OW-114B	11/29/2017		.02020	.00396	ug/L
4,4'-ddt	OW-114B	7/13/2018		.00779	.00422	ug/L
4-chloroaniline	OW-114B	9/27/2017		.326	.146	ug/L
Acetone	OW-114B	12/06/2012		2.02	1.79	ug/L
Acetone	OW-114B	3/12/2015		2.36	1.79	ug/L
Acetone	OW-114B	3/28/2016		2.46	1.79	ug/L
Acetone	OW-114B	4/06/2017		2.74	1.79	ug/L
Acetone	OW-114B	9/27/2017		2.54	1.79	ug/L
Acetone	OW-114B	3/12/2018		5.14	1.79	ug/L
Acetone	OW-114B	9/20/2018		12.20	3.10	ug/L
Aldrin	OW-114B	8/27/2015		.00855	.00500	ug/L
Aldrin	OW-114B	9/27/2017		.02140	.00536	ug/L
Alpha-bhc	OW-114B	3/18/2014		.00547	.00195	ug/L
Alpha-bhc	OW-114B	8/25/2014		.00330	.00179	ug/L
Alpha-bhc	OW-114B	3/12/2015		.00539	.00177	ug/L
Alpha-bhc	OW-114B	9/27/2017		.02860	.00202	ug/L
Benzene	OW-114B	1/14/2008		3.930	.500	ug/L
Benzene	OW-114B	9/17/2008		2.550	.500	ug/L
Benzene	OW-114B	2/23/2009		.770	.500	ug/L
Benzene	OW-114B	5/18/2009		.970	.500	ug/L
Benzene	OW-114B	8/12/2009		.530	.500	ug/L
Benzene	OW-114B	12/06/2012		.160	.110	ug/L
Benzene	OW-114B	3/18/2014		.229	.110	ug/L
Benzene	OW-114B	9/20/2018		3.580	.220	ug/L
Beta-bhc	OW-114B	3/18/2014		.00841	.00552	ug/L
Beta-bhc	OW-114B	8/27/2015		.03670	.00533	ug/L
Beta-bhc	OW-114B	4/06/2017		.00645	.00539	ug/L
Beta-bhc	OW-114B	9/27/2017		.05700	.00571	ug/L
Beta-bhc	OW-114B	7/13/2018		.01770	.00533	ug/L
Bis(2-ethylhexyl)phthalate	OW-114B	8/27/2015		11.400	.394	ug/L
Bis(2-ethylhexyl)phthalate	OW-114B	3/28/2016		5.950	.438	ug/L
Bis(2-ethylhexyl)phthalate	OW-114B	10/11/2016		.596	.438	ug/L
Bis(2-ethylhexyl)phthalate	OW-114B	9/27/2017		.914	.406	ug/L
Bis(2-ethylhexyl)phthalate	OW-114B	3/12/2018		2.450	.424	ug/L
Bromodichloromethane	OW-114B	5/11/2022		1.84	.39	ug/L
Bromomethane	OW-114B	10/11/2016		.230	.220	ug/L
Bromomethane	OW-114B	12/12/2016		.286	.220	ug/L
Butyl benzyl phthalate	OW-114B	9/27/2017		.946	.354	ug/L
Carbon tetrachloride	OW-114B	11/08/2011		.24	.24	ug/L
Chlorobenzene	OW-114B	11/08/2011		.540	.190	ug/L
Chlorobenzene	OW-114B	5/11/2012		.210	.190	ug/L
Chlorobenzene	OW-114B	12/06/2012		.730	.190	ug/L
Chlorobenzene	OW-114B	10/15/2013		.396	.190	ug/L
Chlorobenzene	OW-114B	8/25/2014		.458	.190	ug/L
Chlorobenzene	OW-114B	3/12/2015		1.160	.190	ug/L
Chlorobenzene	OW-114B	9/27/2017		.300	.190	ug/L
Chlorobenzene	OW-114B	3/12/2018		.313	.190	ug/L
Chloroethane	OW-114B	1/14/2008		9.710	4.000	ug/L
Chloroethane	OW-114B	3/16/2010		4.860	4.000	ug/L
Chloroethane	OW-114B	11/08/2011		1.620	.150	ug/L
Chloroethane	OW-114B	12/06/2012		1.660	.150	ug/L

Detections are shown for the constituents and sample points selected for the analysis
The Limit column refers to the laboratory reporting limit

Table 9

Historical Volatile Organic Compound Detections

Constituent	Well	Date	Identifier	Result	Limit	Units
Chloroethane	OW-114B	4/26/2013		3.660	.150	ug/L
Chloroethane	OW-114B	10/15/2013		2.660	.150	ug/L
Chloroethane	OW-114B	3/18/2014		2.420	.150	ug/L
Chloroethane	OW-114B	3/12/2015		1.510	.150	ug/L
Chloroethane	OW-114B	3/28/2016		1.170	.150	ug/L
Chloroethane	OW-114B	12/12/2016		1.150	.150	ug/L
Chloroethane	OW-114B	4/06/2017		1.370	.150	ug/L
Chloroethane	OW-114B	9/27/2017		.658	.150	ug/L
Chloroethane	OW-114B	9/20/2018		1.850	.790	ug/L
Cis-1,2-dichloroethylene	OW-114B	12/06/2012		.140	.130	ug/L
Cis-1,2-dichloroethylene	OW-114B	9/27/2017		.153	.130	ug/L
Cis-1,2-dichloroethylene	OW-114B	9/20/2018		.296	.210	ug/L
Dichlorodifluoromethane	OW-114B	9/20/2018		.28	.25	ug/L
Dichloromethane	OW-114B	12/06/2012		.310	.170	ug/L
Dichloromethane	OW-114B	3/18/2014		.600	.170	ug/L
Dichloromethane	OW-114B	10/11/2016		.234	.170	ug/L
Dichloromethane	OW-114B	12/12/2016		.624	.170	ug/L
Dichloromethane	OW-114B	4/06/2017		.445	.170	ug/L
Dichloromethane	OW-114B	3/12/2018		1.360	.170	ug/L
Dieldrin	OW-114B	9/27/2017		.01580	.00238	ug/L
Diethyl phthalate	OW-114B	3/18/2014		.426	.289	ug/L
Diethyl phthalate	OW-114B	3/12/2015		.337	.283	ug/L
Di-n-octyl phthalate	OW-114B	10/11/2016		1.780	.258	ug/L
Endosulfan i	OW-114B	9/27/2017		.00844	.00238	ug/L
Endosulfan sulfate	OW-114B	8/27/2015		.00421	.00278	ug/L
Endosulfan sulfate	OW-114B	1/27/2016		.00361	.00255	ug/L
Endrin	OW-114B	8/27/2015		.00416	.00211	ug/L
Endrin	OW-114B	9/27/2017		.03140	.00226	ug/L
Endrin aldehyde	OW-114B	8/27/2015		.01150	.00811	ug/L
Endrin aldehyde	OW-114B	9/27/2017		.05740	.00869	ug/L
Endrin aldehyde	OW-114B	11/29/2017		.01570	.00760	ug/L
Gamma-bhc (lindane)	OW-114B	3/18/2014		.00768	.00218	ug/L
Gamma-bhc (lindane)	OW-114B	8/25/2014		.00270	.00200	ug/L
Gamma-bhc (lindane)	OW-114B	3/12/2015		.00441	.00198	ug/L
Gamma-bhc (lindane)	OW-114B	9/27/2017		.02050	.00226	ug/L
Heptachlor	OW-114B	8/27/2015		.00726	.00289	ug/L
Heptachlor epoxide	OW-114B	9/27/2017		.01530	.00726	ug/L
Isodrin	OW-114B	9/27/2017		.924	.396	ug/L
Methoxychlor	OW-114B	3/18/2014		.01990	.00241	ug/L
Methoxychlor	OW-114B	6/11/2014		.00479	.00231	ug/L
Methoxychlor	OW-114B	8/25/2014		.01160	.00221	ug/L
Methoxychlor	OW-114B	3/12/2015		.01110	.00219	ug/L
Nitrobenzene	OW-114B	9/27/2017		.254	.229	ug/L
Toluene	OW-114B	11/08/2011		.220	.150	ug/L
Toluene	OW-114B	3/12/2018		.341	.150	ug/L
2-butanone	OW-205B	3/21/2017		18.20	1.04	ug/L
2-butanone	OW-205B	6/15/2017		1.36	1.04	ug/L
Acetone	OW-205B	3/21/2017		298.00	1.79	ug/L
Acetone	OW-205B	6/15/2017		6.02	1.79	ug/L
Acetone	OW-205B	9/07/2017		3.33	1.79	ug/L
Acetone	OW-205B	3/16/2018		7.47	1.79	ug/L
Acetone	OW-205B	4/24/2024		71.20	3.10	ug/L
Benzene	OW-205B	3/29/2016		.225	.110	ug/L
Benzene	OW-205B	12/07/2016		.387	.110	ug/L
Benzene	OW-205B	3/21/2017		.482	.110	ug/L
Benzene	OW-205B	6/15/2017		.207	.110	ug/L
Benzene	OW-205B	9/07/2017		.138	.110	ug/L
Benzene	OW-205B	11/28/2017		.173	.110	ug/L
Benzene	OW-205B	3/16/2018		.264	.110	ug/L
Benzene	OW-205B	9/24/2018		.374	.220	ug/L
Benzene	OW-205B	10/03/2019		.898	.220	ug/L
Bromomethane	OW-205B	9/07/2017		.23	.22	ug/L
Bromomethane	OW-205B	11/28/2017		.48	.22	ug/L
Chlorobenzene	OW-205B	3/29/2016		.409	.190	ug/L
Chlorobenzene	OW-205B	3/21/2017		.647	.190	ug/L

Detections are shown for the constituents and sample points selected for the analysis
The Limit column refers to the laboratory reporting limit

Table 9

Historical Volatile Organic Compound Detections

Constituent	Well	Date	Identifier	Result	Limit	Units
Chlorobenzene	OW-205B	6/15/2017		.323	.190	ug/L
Chlorobenzene	OW-205B	9/07/2017		.232	.190	ug/L
Chlorobenzene	OW-205B	11/28/2017		.239	.190	ug/L
Chlorobenzene	OW-205B	3/16/2018		.464	.190	ug/L
Chlorobenzene	OW-205B	9/24/2018		.707	.400	ug/L
Chlorobenzene	OW-205B	10/03/2019		1.530	.400	ug/L
Chlorobenzene	OW-205B	3/23/2020		1.040	.400	ug/L
Chloroethane	OW-205B	3/29/2016		1.350	.150	ug/L
Chloroethane	OW-205B	12/07/2016		.863	.150	ug/L
Chloroethane	OW-205B	6/15/2017		.604	.150	ug/L
Chloroethane	OW-205B	9/07/2017		.312	.150	ug/L
Chloroethane	OW-205B	11/28/2017		.547	.150	ug/L
Chloromethane	OW-205B	11/28/2017		.341	.310	ug/L
Cis-1,2-dichloroethylene	OW-205B	3/29/2016		.243	.130	ug/L
Cis-1,2-dichloroethylene	OW-205B	12/07/2016		.740	.130	ug/L
Cis-1,2-dichloroethylene	OW-205B	3/21/2017		.371	.130	ug/L
Cis-1,2-dichloroethylene	OW-205B	6/15/2017		.304	.130	ug/L
Cis-1,2-dichloroethylene	OW-205B	9/07/2017		.217	.130	ug/L
Cis-1,2-dichloroethylene	OW-205B	11/28/2017		.259	.130	ug/L
Cis-1,2-dichloroethylene	OW-205B	3/16/2018		.454	.130	ug/L
Cis-1,2-dichloroethylene	OW-205B	9/24/2018		.855	.210	ug/L
Cis-1,2-dichloroethylene	OW-205B	10/03/2019		1.170	.210	ug/L
Cis-1,2-dichloroethylene	OW-205B	3/23/2020		1.020	.210	ug/L
Delta-bhc	OW-205B	9/24/2018		.00303	.00261	ug/L
Dichloromethane	OW-205B	12/07/2016		.275	.170	ug/L
Dichloromethane	OW-205B	3/21/2017		.258	.170	ug/L
Dichloromethane	OW-205B	6/15/2017		.190	.170	ug/L
Dichloromethane	OW-205B	9/07/2017		.236	.170	ug/L
Dichloromethane	OW-205B	3/16/2018		1.280	.170	ug/L
Styrene	OW-205B	6/15/2017		.137	.100	ug/L
Toluene	OW-205B	6/15/2017		.276	.150	ug/L
1,2-dichloroethane	OW-209B	2/12/1990		.2	.2	ug/L
1,2-dichloroethane	OW-209B	4/17/1990		.8	.2	ug/L
2-butanone	OW-209B	11/10/2011		1.04	.47	ug/L
2-butanone	OW-209B	12/07/2012		.74	.47	ug/L
Acetone	OW-209B	3/10/2016		2.03	1.79	ug/L
Acetone	OW-209B	9/19/2017		4.59	1.79	ug/L
Acetone	OW-209B	3/21/2018		2.78	1.79	ug/L
Benzene	OW-209B	8/13/2009		.59	.50	ug/L
Benzene	OW-209B	9/28/2010		.59	.50	ug/L
Benzene	OW-209B	5/09/2011		.60	.50	ug/L
Benzene	OW-209B	11/10/2011		.51	.11	ug/L
Benzene	OW-209B	5/09/2012		.24	.11	ug/L
Bis(2-ethylhexyl)phthalate	OW-209B	5/09/2012		.425	.390	ug/L
Bis(2-ethylhexyl)phthalate	OW-209B	7/30/2012		26.300	.390	ug/L
Bis(2-ethylhexyl)phthalate	OW-209B	12/07/2012		.632	.390	ug/L
Bis(2-ethylhexyl)phthalate	OW-209B	9/26/2016		1.060	.453	ug/L
Bromomethane	OW-209B	3/23/2017		.255	.220	ug/L
Bromomethane	OW-209B	9/19/2017		.603	.220	ug/L
Cis-1,2-dichloroethylene	OW-209B	11/10/2011		.31	.13	ug/L
Delta-bhc	OW-209B	5/09/2012		.00278	.00230	ug/L
Dichloromethane	OW-209B	12/07/2012		.320	.170	ug/L
Dichloromethane	OW-209B	3/20/2014		.931	.170	ug/L
Dichloromethane	OW-209B	3/10/2016		.345	.170	ug/L
Dichloromethane	OW-209B	3/23/2017		.365	.170	ug/L
Dichloromethane	OW-209B	9/19/2017		.173	.170	ug/L
Di-n-octyl phthalate	OW-209B	9/26/2016		1.890	.267	ug/L
Parathion-ethyl	OW-209B	5/09/2012		.182	.180	ug/L
Toluene	OW-209B	5/01/2013		.41	.15	ug/L
1,2-dichlorobenzene	OW-216B	4/29/2013		.171	.140	ug/L
1,4-dichlorobenzene	OW-216B	3/27/2018		.427	.200	ug/L
2-butanone	OW-216B	11/07/2011		2.64	.47	ug/L
Acetone	OW-216B	11/07/2011		3.58	1.79	ug/L
Acetone	OW-216B	3/10/2016		2.63	1.79	ug/L
Acetone	OW-216B	3/23/2017		2.78	1.79	ug/L

Detections are shown for the constituents and sample points selected for the analysis
The Limit column refers to the laboratory reporting limit

Table 9

Historical Volatile Organic Compound Detections

Constituent	Well	Date	Identifier	Result	Limit	Units
Acetone	OW-216B	9/19/2017		3.21	1.79	ug/L
Acetone	OW-216B	3/27/2018		4.28	1.79	ug/L
Benzene	OW-216B	3/27/2018		.747	.110	ug/L
Bromomethane	OW-216B	3/10/2016		.341	.220	ug/L
Bromomethane	OW-216B	9/19/2017		.496	.220	ug/L
Carbon disulfide	OW-216B	12/06/2012		.22	.15	ug/L
Chlorobenzene	OW-216B	3/27/2018		.736	.190	ug/L
Chloromethane	OW-216B	5/09/2012		.550	.310	ug/L
Chloromethane	OW-216B	3/10/2016		.361	.310	ug/L
Dichloromethane	OW-216B	12/06/2012		.210	.170	ug/L
Dichloromethane	OW-216B	3/21/2014		1.190	.170	ug/L
Dichloromethane	OW-216B	3/23/2017		.615	.170	ug/L
Dichloromethane	OW-216B	3/27/2018		.325	.170	ug/L
Xylenes	OW-216B	5/09/2012		.14	.13	ug/L
1,1,1-trichloroethane	OW-401B	10/03/2016		.236	.120	ug/L
1,1-dichloroethane	OW-401B	11/07/2011		.260	.210	ug/L
1,1-dichloroethane	OW-401B	5/11/2012		.220	.210	ug/L
1,1-dichloroethane	OW-401B	12/06/2012		.300	.210	ug/L
1,1-dichloroethane	OW-401B	10/14/2013		.367	.210	ug/L
1,2-dichlorobenzene	OW-401B	4/26/2013		.189	.140	ug/L
1,2-dichloroethane	OW-401B	11/07/2011		.180	.180	ug/L
1,2-dichloroethane	OW-401B	12/06/2012		.180	.180	ug/L
1,2-dichloroethane	OW-401B	10/03/2016		.328	.180	ug/L
1,2-dichloroethane	OW-401B	9/29/2017		.225	.180	ug/L
1,4-dichlorobenzene	OW-401B	11/07/2011		1.380	.200	ug/L
1,4-dichlorobenzene	OW-401B	2/22/2012		1.020	.200	ug/L
1,4-dichlorobenzene	OW-401B	5/11/2012		.710	.200	ug/L
1,4-dichlorobenzene	OW-401B	12/06/2012		1.430	.200	ug/L
1,4-dichlorobenzene	OW-401B	4/26/2013		1.450	.200	ug/L
1,4-dichlorobenzene	OW-401B	10/14/2013		1.660	.200	ug/L
1,4-dichlorobenzene	OW-401B	3/10/2015		.931	.200	ug/L
1,4-dichlorobenzene	OW-401B	10/03/2016		.924	.200	ug/L
1,4-dichlorobenzene	OW-401B	12/12/2016		.802	.200	ug/L
1,4-dichlorobenzene	OW-401B	4/06/2017		.918	.200	ug/L
1,4-dichlorobenzene	OW-401B	9/29/2017		.811	.200	ug/L
1,4-dichlorobenzene	OW-401B	4/09/2018		.988	.200	ug/L
1,4-dichlorobenzene	OW-401B	4/14/2020		1.150	.230	ug/L
1,4-dichlorobenzene	OW-401B	3/28/2023		1.140	.230	ug/L
1,4-dichlorobenzene	OW-401B	5/14/2024		1.220	.230	ug/L
2,4-d	OW-401B	10/06/2020		1.3800	.0232	ug/L
2,4-dimethylphenol	OW-401B	9/20/2018		.389	.239	ug/L
2-butanone	OW-401B	2/22/2012		1.13	.47	ug/L
2-butanone	OW-401B	12/06/2012		.56	.47	ug/L
2-butanone	OW-401B	10/14/2013		2.03	.47	ug/L
2-butanone	OW-401B	4/06/2017		1.73	1.04	ug/L
2-butanone	OW-401B	9/29/2017		3.01	1.04	ug/L
2-hexanone	OW-401B	11/07/2011		.35	.20	ug/L
4,4'-ddd	OW-401B	10/03/2016		.01180	.00207	ug/L
4,4'-ddd	OW-401B	9/29/2017		.02510	.00209	ug/L
4,4'-dde	OW-401B	9/29/2017		.01760	.00244	ug/L
4,4'-dde	OW-401B	9/20/2018		.03040	.00226	ug/L
4,4'-ddt	OW-401B	10/03/2016		.02300	.00437	ug/L
4,4'-ddt	OW-401B	9/29/2017		.02510	.00442	ug/L
4,4'-ddt	OW-401B	9/20/2018		.00524	.00409	ug/L
4-chloro-3-methylphenol	OW-401B	5/11/2012		.710	.190	ug/L
4-chloro-3-methylphenol	OW-401B	12/06/2012		.846	.190	ug/L
4-chloro-3-methylphenol	OW-401B	2/21/2013		.429	.202	ug/L
4-chloro-3-methylphenol	OW-401B	4/26/2013		.324	.192	ug/L
4-chloro-3-methylphenol	OW-401B	6/28/2013		.555	.194	ug/L
4-chloro-3-methylphenol	OW-401B	3/10/2015		1.400	.200	ug/L
4-chloro-3-methylphenol	OW-401B	8/26/2015		.982	.202	ug/L
Acetone	OW-401B	11/07/2011		5.18	1.79	ug/L
Acetone	OW-401B	2/22/2012		1.84	1.79	ug/L
Acetone	OW-401B	12/06/2012		1.80	1.79	ug/L
Acetone	OW-401B	8/29/2014		6.97	1.79	ug/L

Detections are shown for the constituents and sample points selected for the analysis
The Limit column refers to the laboratory reporting limit

Table 9

Historical Volatile Organic Compound Detections

Constituent	Well	Date	Identifier	Result	Limit	Units
Acetone	OW-401B	3/10/2015		4.80	1.79	ug/L
Acetone	OW-401B	3/25/2016		5.79	1.79	ug/L
Acetone	OW-401B	10/03/2016		6.38	1.79	ug/L
Acetone	OW-401B	12/12/2016		2.93	1.79	ug/L
Acetone	OW-401B	4/06/2017		3.39	1.79	ug/L
Acetone	OW-401B	9/29/2017		11.80	1.79	ug/L
Acetone	OW-401B	4/09/2018		15.80	1.79	ug/L
Acetone	OW-401B	10/06/2020		15.20	3.10	ug/L
Acetone	OW-401B	4/02/2021		14.20	3.10	ug/L
Acetonitrile	OW-401B	8/26/2015		181	126	ug/L
Acetophenone	OW-401B	10/03/2016		.418	.253	ug/L
Acetophenone	OW-401B	9/29/2017		.519	.275	ug/L
Acetophenone	OW-401B	9/20/2018		.551	.398	ug/L
Aldrin	OW-401B	9/29/2017		.02930	.00523	ug/L
Aldrin	OW-401B	9/20/2018		.02240	.00484	ug/L
Alpha-bhc	OW-401B	10/03/2016		.00736	.00195	ug/L
Alpha-bhc	OW-401B	9/29/2017		.00960	.00198	ug/L
Benzene	OW-401B	9/27/2010		3.89	.50	ug/L
Benzene	OW-401B	2/23/2011		2.94	.50	ug/L
Benzene	OW-401B	3/25/2011		3.44	.50	ug/L
Benzene	OW-401B	5/03/2011		3.54	.50	ug/L
Benzene	OW-401B	6/23/2011		3.18	.50	ug/L
Benzene	OW-401B	8/26/2011		4.05	.50	ug/L
Benzene	OW-401B	11/07/2011		5.30	.11	ug/L
Benzene	OW-401B	2/22/2012		4.11	.11	ug/L
Benzene	OW-401B	5/11/2012		3.39	.11	ug/L
Benzene	OW-401B	12/06/2012		5.62	.11	ug/L
Benzene	OW-401B	4/26/2013		4.54	.11	ug/L
Benzene	OW-401B	10/14/2013		5.24	.11	ug/L
Benzene	OW-401B	4/02/2014		5.12	.11	ug/L
Benzene	OW-401B	8/29/2014		5.14	.11	ug/L
Benzene	OW-401B	3/10/2015		4.96	.11	ug/L
Benzene	OW-401B	8/26/2015		3.75	.11	ug/L
Benzene	OW-401B	3/25/2016		4.16	.11	ug/L
Benzene	OW-401B	10/03/2016		4.35	.11	ug/L
Benzene	OW-401B	12/12/2016		3.60	.11	ug/L
Benzene	OW-401B	4/06/2017		4.84	.11	ug/L
Benzene	OW-401B	9/29/2017		4.07	.11	ug/L
Benzene	OW-401B	4/09/2018		4.75	.11	ug/L
Benzene	OW-401B	4/16/2019		5.67	.22	ug/L
Benzene	OW-401B	10/03/2019		4.64	.22	ug/L
Benzene	OW-401B	4/14/2020		5.81	.22	ug/L
Benzene	OW-401B	10/06/2020		4.50	.22	ug/L
Benzene	OW-401B	4/02/2021		4.01	.22	ug/L
Benzene	OW-401B	11/09/2021		4.15	.22	ug/L
Benzene	OW-401B	4/14/2022		4.08	.22	ug/L
Benzene	OW-401B	11/09/2022		4.01	.22	ug/L
Benzene	OW-401B	3/28/2023		2.70	.22	ug/L
Benzene	OW-401B	9/28/2023		4.41	.22	ug/L
Benzene	OW-401B	5/14/2024		3.79	.22	ug/L
Benzene	OW-401B	10/15/2024		3.46	.22	ug/L
Beta-bhc	OW-401B	8/26/2015		.00548	.00505	ug/L
Beta-bhc	OW-401B	1/27/2016		.02300	.00490	ug/L
Beta-bhc	OW-401B	10/03/2016		.02030	.00552	ug/L
Beta-bhc	OW-401B	9/29/2017		.03750	.00558	ug/L
Beta-bhc	OW-401B	4/09/2018		.01750	.00527	ug/L
Beta-bhc	OW-401B	7/17/2018		.06550	.00527	ug/L
Beta-bhc	OW-401B	9/20/2018		.09050	.00516	ug/L
Beta-bhc	OW-401B	4/16/2019		.06250	.00539	ug/L
Beta-bhc	OW-401B	10/03/2019		.03800	.00500	ug/L
Beta-bhc	OW-401B	4/14/2020		.07870	.00522	ug/L
Beta-bhc	OW-401B	10/06/2020		.04790	.00552	ug/L
Beta-bhc	OW-401B	11/09/2022		.09700	.04200	ug/L
Beta-bhc	OW-401B	9/28/2023		.06770	.03700	ug/L
Bis(2-ethylhexyl)phthalate	OW-401B	5/11/2012		.545	.390	ug/L

Detections are shown for the constituents and sample points selected for the analysis
The Limit column refers to the laboratory reporting limit

Table 9

Historical Volatile Organic Compound Detections

Constituent	Well	Date	Identifier	Result	Limit	Units
Bis(2-ethylhexyl)phthalate	OW-401B	6/28/2013		2.770	.398	ug/L
Bis(2-ethylhexyl)phthalate	OW-401B	9/29/2017		2.160	.488	ug/L
Bromomethane	OW-401B	12/12/2016		.329	.220	ug/L
Carbon disulfide	OW-401B	11/07/2011		.18	.15	ug/L
Chlorobenzene	OW-401B	11/07/2011		.560	.190	ug/L
Chlorobenzene	OW-401B	2/22/2012		.400	.190	ug/L
Chlorobenzene	OW-401B	5/11/2012		.320	.190	ug/L
Chlorobenzene	OW-401B	12/06/2012		.500	.190	ug/L
Chlorobenzene	OW-401B	4/26/2013		.468	.190	ug/L
Chlorobenzene	OW-401B	10/14/2013		.589	.190	ug/L
Chlorobenzene	OW-401B	8/29/2014		.383	.190	ug/L
Chlorobenzene	OW-401B	3/10/2015		.362	.190	ug/L
Chlorobenzene	OW-401B	10/03/2016		.357	.190	ug/L
Chlorobenzene	OW-401B	12/12/2016		.292	.190	ug/L
Chlorobenzene	OW-401B	4/06/2017		.381	.190	ug/L
Chlorobenzene	OW-401B	9/29/2017		.319	.190	ug/L
Chlorobenzene	OW-401B	4/09/2018		.491	.190	ug/L
Chloroethane	OW-401B	2/22/2012		2.960	.150	ug/L
Chloroethane	OW-401B	5/11/2012		2.150	.150	ug/L
Chloroethane	OW-401B	12/06/2012		3.470	.150	ug/L
Chloroethane	OW-401B	4/26/2013		2.900	.150	ug/L
Chloroethane	OW-401B	10/14/2013		2.730	.150	ug/L
Chloroethane	OW-401B	4/02/2014		2.420	.150	ug/L
Chloroethane	OW-401B	8/29/2014		2.760	.150	ug/L
Chloroethane	OW-401B	3/10/2015		.808	.150	ug/L
Chloroethane	OW-401B	8/26/2015		1.870	.150	ug/L
Chloroethane	OW-401B	3/25/2016		1.800	.150	ug/L
Chloroethane	OW-401B	10/03/2016		2.370	.150	ug/L
Chloroethane	OW-401B	12/12/2016		1.770	.150	ug/L
Chloroethane	OW-401B	4/06/2017		2.030	.150	ug/L
Chloroethane	OW-401B	9/29/2017		1.330	.150	ug/L
Chloroethane	OW-401B	4/09/2018		1.460	.150	ug/L
Cis-1,2-dichloroethylene	OW-401B	6/23/2011		1.300	1.000	ug/L
Cis-1,2-dichloroethylene	OW-401B	11/07/2011		.340	.130	ug/L
Cis-1,2-dichloroethylene	OW-401B	2/22/2012		.320	.130	ug/L
Cis-1,2-dichloroethylene	OW-401B	5/11/2012		.450	.130	ug/L
Cis-1,2-dichloroethylene	OW-401B	12/06/2012		.430	.130	ug/L
Cis-1,2-dichloroethylene	OW-401B	4/26/2013		.231	.130	ug/L
Cis-1,2-dichloroethylene	OW-401B	10/14/2013		.314	.130	ug/L
Cis-1,2-dichloroethylene	OW-401B	8/29/2014		.403	.130	ug/L
Cis-1,2-dichloroethylene	OW-401B	3/10/2015		.475	.130	ug/L
Cis-1,2-dichloroethylene	OW-401B	8/26/2015		.280	.130	ug/L
Cis-1,2-dichloroethylene	OW-401B	3/25/2016		.541	.130	ug/L
Cis-1,2-dichloroethylene	OW-401B	10/03/2016		.452	.130	ug/L
Cis-1,2-dichloroethylene	OW-401B	12/12/2016		.257	.130	ug/L
Cis-1,2-dichloroethylene	OW-401B	4/06/2017		.402	.130	ug/L
Cis-1,2-dichloroethylene	OW-401B	9/29/2017		.313	.130	ug/L
Cis-1,2-dichloroethylene	OW-401B	4/09/2018		.332	.130	ug/L
Delta-bhc	OW-401B	9/20/2018		.03330	.00247	ug/L
Delta-bhc	OW-401B	11/09/2021		.05900	.01800	ug/L
Dichlorodifluoromethane	OW-401B	5/11/2012		.310	.200	ug/L
Dichlorodifluoromethane	OW-401B	12/06/2012		.280	.200	ug/L
Dichlorodifluoromethane	OW-401B	10/03/2016		.486	.200	ug/L
Dichloromethane	OW-401B	2/22/2012		.660	.170	ug/L
Dichloromethane	OW-401B	12/06/2012		.400	.170	ug/L
Dichloromethane	OW-401B	4/26/2013		.322	.170	ug/L
Dichloromethane	OW-401B	4/02/2014		.590	.170	ug/L
Dichloromethane	OW-401B	8/29/2014		.275	.170	ug/L
Dichloromethane	OW-401B	3/25/2016		.255	.170	ug/L
Dichloromethane	OW-401B	10/03/2016		.789	.170	ug/L
Dichloromethane	OW-401B	12/12/2016		.585	.170	ug/L
Dichloromethane	OW-401B	4/06/2017		.444	.170	ug/L
Dichloromethane	OW-401B	9/29/2017		.355	.170	ug/L
Dichloromethane	OW-401B	4/09/2018		.287	.170	ug/L
Dieldrin	OW-401B	9/29/2017		.00501	.00233	ug/L

Detections are shown for the constituents and sample points selected for the analysis
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Table 9

Historical Volatile Organic Compound Detections

Constituent	Well	Date	Identifier	Result	Limit	Units
Dieldrin	OW-401B	9/20/2018		.00782	.00215	ug/L
Diethyl phthalate	OW-401B	5/11/2012		1.560	.260	ug/L
Diethyl phthalate	OW-401B	12/06/2012		.937	.260	ug/L
Diethyl phthalate	OW-401B	2/21/2013		.612	.277	ug/L
Diethyl phthalate	OW-401B	6/28/2013		.730	.265	ug/L
Diethyl phthalate	OW-401B	3/10/2015		1.580	.274	ug/L
Diethyl phthalate	OW-401B	8/26/2015		1.560	.277	ug/L
Diethyl phthalate	OW-401B	10/03/2016		1.550	.299	ug/L
Diethyl phthalate	OW-401B	9/29/2017		1.930	.325	ug/L
Diethyl phthalate	OW-401B	9/20/2018		1.520	.307	ug/L
Di-n-butyl phthalate	OW-401B	5/11/2012		.708	.510	ug/L
Di-n-butyl phthalate	OW-401B	9/29/2017		1.380	.638	ug/L
Di-n-octyl phthalate	OW-401B	8/26/2015		1.800	.245	ug/L
Endosulfan i	OW-401B	9/29/2017		.01490	.00233	ug/L
Endosulfan i	OW-401B	9/20/2018		.00453	.00215	ug/L
Endosulfan sulfate	OW-401B	9/29/2017		.06680	.00291	ug/L
Endosulfan sulfate	OW-401B	11/30/2017		.03420	.00272	ug/L
Endosulfan sulfate	OW-401B	9/20/2018		.00907	.00269	ug/L
Endrin	OW-401B	9/29/2017		.01910	.00221	ug/L
Endrin	OW-401B	9/20/2018		.00377	.00204	ug/L
Endrin aldehyde	OW-401B	8/26/2015		.00999	.00768	ug/L
Endrin aldehyde	OW-401B	9/29/2017		.02660	.00849	ug/L
Endrin aldehyde	OW-401B	11/09/2021		.03900	.01100	ug/L
Gamma-bhc (lindane)	OW-401B	10/03/2016		.00551	.00218	ug/L
Gamma-bhc (lindane)	OW-401B	9/29/2017		.02590	.00221	ug/L
Heptachlor	OW-401B	9/29/2017		.02970	.00302	ug/L
Kepone	OW-401B	5/11/2012		.98	.24	ug/L
M,p-xylene	OW-401B	12/12/2016		.120	.120	ug/L
M,p-xylene	OW-401B	9/29/2017		.237	.120	ug/L
M,p-xylene	OW-401B	4/09/2018		.318	.120	ug/L
Methoxychlor	OW-401B	9/29/2017		.00655	.00244	ug/L
Methoxychlor	OW-401B	9/20/2018		.00420	.00226	ug/L
P-(dimethylamino)azobenzene	OW-401B	8/26/2015		.859	.255	ug/L
Pentachlorophenol	OW-401B	8/26/2015		2.100	.255	ug/L
Silvex (2,4,5-tp)	OW-401B	11/09/2021		1.250	.138	ug/L
Toluene	OW-401B	11/07/2011		.320	.150	ug/L
Toluene	OW-401B	2/22/2012		.220	.150	ug/L
Toluene	OW-401B	5/11/2012		.220	.150	ug/L
Toluene	OW-401B	12/06/2012		.750	.150	ug/L
Toluene	OW-401B	4/06/2017		.161	.150	ug/L
Toluene	OW-401B	9/29/2017		.286	.150	ug/L
Toluene	OW-401B	4/09/2018		.907	.150	ug/L
Vinyl chloride	OW-401B	10/14/2013		.11	.10	ug/L
Xylenes	OW-401B	10/14/2013		.253	.130	ug/L
Xylenes	OW-401B	9/29/2017		.237	.130	ug/L
Xylenes	OW-401B	4/09/2018		.318	.130	ug/L
1,1-dichloroethane	OW-402B	11/08/2011		.650	.210	ug/L
1,1-dichloroethane	OW-402B	2/22/2012		.670	.210	ug/L
1,1-dichloroethane	OW-402B	5/11/2012		.830	.210	ug/L
1,1-dichloroethane	OW-402B	12/07/2012		1.100	.210	ug/L
1,1-dichloroethane	OW-402B	4/26/2013		.644	.210	ug/L
1,1-dichloroethane	OW-402B	10/15/2013		.736	.210	ug/L
1,1-dichloroethane	OW-402B	8/29/2014		.666	.210	ug/L
1,1-dichloroethane	OW-402B	2/24/2015		.942	.210	ug/L
1,1-dichloroethane	OW-402B	8/26/2015		.533	.210	ug/L
1,1-dichloroethane	OW-402B	3/25/2016		.318	.210	ug/L
1,1-dichloroethane	OW-402B	9/30/2016		.501	.210	ug/L
1,1-dichloroethane	OW-402B	12/09/2016		.619	.210	ug/L
1,1-dichloroethane	OW-402B	4/06/2017		.423	.210	ug/L
1,1-dichloroethane	OW-402B	9/18/2017		.741	.210	ug/L
1,1-dichloroethane	OW-402B	3/29/2018		.706	.210	ug/L
1,1-dichloroethane	OW-402B	9/14/2018		.595	.220	ug/L
1,2-dichloropropane	OW-402B	2/23/2011		1.180	1.000	ug/L
1,2-dichloropropane	OW-402B	3/25/2011		1.560	1.000	ug/L
1,2-dichloropropane	OW-402B	5/02/2011		1.430	1.000	ug/L

Detections are shown for the constituents and sample points selected for the analysis
The Limit column refers to the laboratory reporting limit

Table 9

Historical Volatile Organic Compound Detections

Constituent	Well	Date	Identifier	Result	Limit	Units
1,2-dichloropropane	OW-402B	6/23/2011		1.450	1.000	ug/L
1,2-dichloropropane	OW-402B	2/22/2012		1.010	.870	ug/L
1,2-dichloropropane	OW-402B	5/11/2012		.650	.110	ug/L
1,2-dichloropropane	OW-402B	12/07/2012		1.420	.870	ug/L
1,2-dichloropropane	OW-402B	3/18/2014		.908	.870	ug/L
1,2-dichloropropane	OW-402B	3/29/2018		.920	.870	ug/L
1,2-dichloropropane	OW-402B	9/14/2018		.431	.270	ug/L
1,4-dichlorobenzene	OW-402B	9/18/2017		.237	.200	ug/L
1,4-dichlorobenzene	OW-402B	3/29/2018		.366	.200	ug/L
2,4,5-t	OW-402B	10/06/2020		.2040	.0372	ug/L
2,4-d	OW-402B	10/06/2020		1.1700	.0222	ug/L
2-butanone	OW-402B	11/08/2011		1.14	.47	ug/L
2-butanone	OW-402B	2/22/2012		.86	.47	ug/L
2-butanone	OW-402B	12/07/2012		.78	.47	ug/L
3/4-methylphenol	OW-402B	9/18/2017		.263	.194	ug/L
4,4'-ddd	OW-402B	8/26/2015		.00191	.00191	ug/L
4,4'-ddd	OW-402B	1/27/2016		.00297	.00180	ug/L
4,4'-ddd	OW-402B	9/14/2018		.00394	.00205	ug/L
4,4'-dde	OW-402B	8/26/2015		.00433	.00223	ug/L
4,4'-dde	OW-402B	1/27/2016		.00933	.00210	ug/L
4,4'-dde	OW-402B	9/14/2018		.00922	.00239	ug/L
4,4'-ddt	OW-402B	9/18/2017		.01020	.00422	ug/L
Acetone	OW-402B	12/07/2012		1.99	1.79	ug/L
Acetone	OW-402B	2/24/2015		6.79	1.79	ug/L
Acetone	OW-402B	3/25/2016		2.28	1.79	ug/L
Acetone	OW-402B	4/06/2017		2.28	1.79	ug/L
Acetone	OW-402B	9/18/2017		2.79	1.79	ug/L
Acetone	OW-402B	3/29/2018		3.85	1.79	ug/L
Acetone	OW-402B	9/14/2018		5.71	3.10	ug/L
Acetonitrile	OW-402B	9/30/2016		169	126	ug/L
Aldrin	OW-402B	9/18/2017		.01100	.00500	ug/L
Aldrin	OW-402B	9/14/2018		.00603	.00511	ug/L
Alpha-bhc	OW-402B	9/30/2016		.00241	.00191	ug/L
Alpha-bhc	OW-402B	9/18/2017		.01670	.00189	ug/L
Benzene	OW-402B	2/23/2011		1.150	.500	ug/L
Benzene	OW-402B	3/25/2011		1.420	.500	ug/L
Benzene	OW-402B	5/02/2011		1.290	.500	ug/L
Benzene	OW-402B	6/23/2011		1.630	.500	ug/L
Benzene	OW-402B	8/26/2011		1.490	.500	ug/L
Benzene	OW-402B	11/08/2011		1.320	.110	ug/L
Benzene	OW-402B	2/22/2012		1.250	.110	ug/L
Benzene	OW-402B	5/11/2012		.980	.110	ug/L
Benzene	OW-402B	12/07/2012		2.190	.110	ug/L
Benzene	OW-402B	4/26/2013		.908	.110	ug/L
Benzene	OW-402B	10/15/2013		1.400	.110	ug/L
Benzene	OW-402B	3/18/2014		1.970	.110	ug/L
Benzene	OW-402B	8/29/2014		1.480	.110	ug/L
Benzene	OW-402B	2/24/2015		1.880	.110	ug/L
Benzene	OW-402B	8/26/2015		.866	.110	ug/L
Benzene	OW-402B	9/30/2016		.622	.110	ug/L
Benzene	OW-402B	12/09/2016		1.290	.110	ug/L
Benzene	OW-402B	4/06/2017		.609	.110	ug/L
Benzene	OW-402B	9/18/2017		1.590	.110	ug/L
Benzene	OW-402B	3/29/2018		1.600	.110	ug/L
Benzene	OW-402B	9/14/2018		1.400	.220	ug/L
Benzene	OW-402B	4/16/2019		.679	.220	ug/L
Benzene	OW-402B	10/07/2019		1.220	.220	ug/L
Benzene	OW-402B	3/25/2020		.824	.220	ug/L
Benzene	OW-402B	10/06/2020		1.560	.220	ug/L
Benzene	OW-402B	4/02/2021		.800	.220	ug/L
Benzene	OW-402B	11/22/2021		1.320	.220	ug/L
Benzene	OW-402B	4/14/2022		.564	.220	ug/L
Benzene	OW-402B	11/09/2022		1.140	.220	ug/L
Benzene	OW-402B	3/28/2023		.646	.220	ug/L
Benzene	OW-402B	9/28/2023		.955	.220	ug/L

Detections are shown for the constituents and sample points selected for the analysis
The Limit column refers to the laboratory reporting limit

Table 9

Historical Volatile Organic Compound Detections

Constituent	Well	Date	Identifier	Result	Limit	Units
Benzene	OW-402B	10/16/2024		.947	.220	ug/L
Beta-bhc	OW-402B	8/26/2015		.01130	.00511	ug/L
Beta-bhc	OW-402B	9/30/2016		.00745	.00539	ug/L
Beta-bhc	OW-402B	9/18/2017		.05200	.00533	ug/L
Beta-bhc	OW-402B	11/29/2017		.04380	.00522	ug/L
Beta-bhc	OW-402B	3/29/2018		.03030	.00527	ug/L
Beta-bhc	OW-402B	7/17/2018		.10600	.00527	ug/L
Beta-bhc	OW-402B	9/14/2018		.01620	.00545	ug/L
Beta-bhc	OW-402B	10/06/2020		.05110	.00533	ug/L
Bis(2-ethylhexyl)phthalate	OW-402B	5/11/2012		1.270	.390	ug/L
Bis(2-ethylhexyl)phthalate	OW-402B	6/27/2013		1.310	.398	ug/L
Bis(2-ethylhexyl)phthalate	OW-402B	8/26/2015		10.500	.390	ug/L
Bis(2-ethylhexyl)phthalate	OW-402B	9/30/2016		.750	.494	ug/L
Bis(2-ethylhexyl)phthalate	OW-402B	9/18/2017		1.020	.419	ug/L
Bis(2-ethylhexyl)phthalate	OW-402B	3/29/2018		.746	.419	ug/L
Bromomethane	OW-402B	9/18/2017		.56	.22	ug/L
Chlorobenzene	OW-402B	12/07/2012		.200	.190	ug/L
Chlorobenzene	OW-402B	2/24/2015		.317	.190	ug/L
Chlorobenzene	OW-402B	9/18/2017		.317	.190	ug/L
Chlorobenzene	OW-402B	3/29/2018		.647	.190	ug/L
Chloroethane	OW-402B	2/23/2011		5.31	4.00	ug/L
Chloroethane	OW-402B	3/25/2011		7.82	4.00	ug/L
Chloroethane	OW-402B	5/02/2011		8.14	4.00	ug/L
Chloroethane	OW-402B	6/23/2011		8.17	4.00	ug/L
Chloroethane	OW-402B	8/26/2011		4.57	4.00	ug/L
Chloroethane	OW-402B	11/08/2011		4.86	.15	ug/L
Chloroethane	OW-402B	2/22/2012		4.52	.15	ug/L
Chloroethane	OW-402B	5/11/2012		3.87	.15	ug/L
Chloroethane	OW-402B	12/07/2012		5.35	.15	ug/L
Chloroethane	OW-402B	4/26/2013		3.52	.15	ug/L
Chloroethane	OW-402B	10/15/2013		3.50	.15	ug/L
Chloroethane	OW-402B	3/18/2014		4.72	.15	ug/L
Chloroethane	OW-402B	8/29/2014		3.62	.15	ug/L
Chloroethane	OW-402B	2/24/2015		4.28	.15	ug/L
Chloroethane	OW-402B	8/26/2015		2.48	.15	ug/L
Chloroethane	OW-402B	9/30/2016		1.99	.15	ug/L
Chloroethane	OW-402B	12/09/2016		2.64	.15	ug/L
Chloroethane	OW-402B	4/06/2017		1.71	.15	ug/L
Chloroethane	OW-402B	9/18/2017		2.67	.15	ug/L
Chloroethane	OW-402B	3/29/2018		2.90	.15	ug/L
Chloroethane	OW-402B	9/14/2018		3.17	.79	ug/L
Chloromethane	OW-402B	8/29/2014		.779	.310	ug/L
Cis-1,2-dichloroethylene	OW-402B	2/23/2011		48.60	1.00	ug/L
Cis-1,2-dichloroethylene	OW-402B	3/25/2011		76.60	1.00	ug/L
Cis-1,2-dichloroethylene	OW-402B	5/02/2011		70.00	1.00	ug/L
Cis-1,2-dichloroethylene	OW-402B	6/23/2011		78.00	1.00	ug/L
Cis-1,2-dichloroethylene	OW-402B	8/26/2011		34.60	1.00	ug/L
Cis-1,2-dichloroethylene	OW-402B	11/08/2011		36.20	.13	ug/L
Cis-1,2-dichloroethylene	OW-402B	2/22/2012		38.00	.13	ug/L
Cis-1,2-dichloroethylene	OW-402B	5/11/2012		26.90	.13	ug/L
Cis-1,2-dichloroethylene	OW-402B	12/07/2012		56.10	.13	ug/L
Cis-1,2-dichloroethylene	OW-402B	4/26/2013		29.90	.13	ug/L
Cis-1,2-dichloroethylene	OW-402B	10/15/2013		17.00	.13	ug/L
Cis-1,2-dichloroethylene	OW-402B	3/18/2014		47.00	.13	ug/L
Cis-1,2-dichloroethylene	OW-402B	8/29/2014		22.10	.13	ug/L
Cis-1,2-dichloroethylene	OW-402B	2/24/2015		44.00	.13	ug/L
Cis-1,2-dichloroethylene	OW-402B	8/26/2015		16.20	.13	ug/L
Cis-1,2-dichloroethylene	OW-402B	3/25/2016		3.63	.13	ug/L
Cis-1,2-dichloroethylene	OW-402B	9/30/2016		5.75	.13	ug/L
Cis-1,2-dichloroethylene	OW-402B	12/09/2016		20.40	.13	ug/L
Cis-1,2-dichloroethylene	OW-402B	4/06/2017		10.30	.13	ug/L
Cis-1,2-dichloroethylene	OW-402B	9/18/2017		24.40	.13	ug/L
Cis-1,2-dichloroethylene	OW-402B	3/29/2018		38.00	.13	ug/L
Cis-1,2-dichloroethylene	OW-402B	9/14/2018		17.70	.21	ug/L
Cis-1,2-dichloroethylene	OW-402B	4/16/2019		10.90	.21	ug/L

Detections are shown for the constituents and sample points selected for the analysis
The Limit column refers to the laboratory reporting limit

Table 9

Historical Volatile Organic Compound Detections

Constituent	Well	Date	Identifier	Result	Limit	Units
Cis-1,2-dichloroethylene	OW-402B	10/07/2019		20.70	.21	ug/L
Cis-1,2-dichloroethylene	OW-402B	3/25/2020		14.80	.21	ug/L
Cis-1,2-dichloroethylene	OW-402B	10/06/2020		23.50	.21	ug/L
Cis-1,2-dichloroethylene	OW-402B	4/02/2021		12.20	.21	ug/L
Cis-1,2-dichloroethylene	OW-402B	11/22/2021		16.60	.21	ug/L
Cis-1,2-dichloroethylene	OW-402B	4/14/2022		14.30	.21	ug/L
Cis-1,2-dichloroethylene	OW-402B	11/09/2022		15.40	.21	ug/L
Cis-1,2-dichloroethylene	OW-402B	3/28/2023		14.80	.21	ug/L
Cis-1,2-dichloroethylene	OW-402B	9/28/2023		13.10	.21	ug/L
Cis-1,2-dichloroethylene	OW-402B	10/16/2024		10.40	.21	ug/L
Delta-bhc	OW-402B	8/26/2015		.00817	.00245	ug/L
Delta-bhc	OW-402B	9/18/2017		.00640	.00256	ug/L
Delta-bhc	OW-402B	9/14/2018		.00421	.00261	ug/L
Dichlorodifluoromethane	OW-402B	5/11/2012		.230	.200	ug/L
Dichlorodifluoromethane	OW-402B	12/07/2012		.430	.200	ug/L
Dichlorodifluoromethane	OW-402B	9/18/2017		.338	.200	ug/L
Dichloromethane	OW-402B	11/08/2011		.230	.170	ug/L
Dichloromethane	OW-402B	2/22/2012		.440	.170	ug/L
Dichloromethane	OW-402B	12/07/2012		.450	.170	ug/L
Dichloromethane	OW-402B	9/30/2016		.460	.170	ug/L
Dichloromethane	OW-402B	12/09/2016		.194	.170	ug/L
Dichloromethane	OW-402B	4/06/2017		.396	.170	ug/L
Dichloromethane	OW-402B	3/29/2018		.389	.170	ug/L
Dieldrin	OW-402B	8/26/2015		.00550	.00213	ug/L
Dieldrin	OW-402B	1/27/2016		.00388	.00200	ug/L
Dieldrin	OW-402B	9/14/2018		.00774	.00227	ug/L
Diethyl phthalate	OW-402B	5/11/2012		.561	.260	ug/L
Diethyl phthalate	OW-402B	2/21/2013		1.050	.265	ug/L
Diethyl phthalate	OW-402B	6/27/2013		.531	.265	ug/L
Diethyl phthalate	OW-402B	10/15/2013		.446	.286	ug/L
Diethyl phthalate	OW-402B	2/24/2015		1.680	.274	ug/L
Diethyl phthalate	OW-402B	8/26/2015		.522	.260	ug/L
Diethyl phthalate	OW-402B	9/18/2017		1.290	.280	ug/L
Diethyl phthalate	OW-402B	9/14/2018		.945	.290	ug/L
Di-n-butyl phthalate	OW-402B	5/11/2012		.63	.51	ug/L
Di-n-octyl phthalate	OW-402B	8/26/2015		1.73	.23	ug/L
Endosulfan i	OW-402B	9/18/2017		.00296	.00222	ug/L
Endosulfan sulfate	OW-402B	8/26/2015		.00346	.00266	ug/L
Endosulfan sulfate	OW-402B	9/18/2017		.01270	.00278	ug/L
Endosulfan sulfate	OW-402B	7/17/2018		.04380	.00275	ug/L
Endrin	OW-402B	5/11/2012		.01050	.00190	ug/L
Endrin	OW-402B	2/24/2015		.00275	.00196	ug/L
Endrin	OW-402B	9/18/2017		.01160	.00211	ug/L
Endrin aldehyde	OW-402B	8/26/2015		.00799	.00777	ug/L
Gamma-bhc (lindane)	OW-402B	8/26/2015		.00378	.00202	ug/L
Gamma-bhc (lindane)	OW-402B	1/27/2016		.01350	.00190	ug/L
Gamma-bhc (lindane)	OW-402B	9/18/2017		.00529	.00211	ug/L
Gamma-bhc (lindane)	OW-402B	9/14/2018		.00656	.00216	ug/L
Pentachlorophenol	OW-402B	9/18/2017		3.080	.258	ug/L
Silvex (2,4,5-tp)	OW-402B	6/23/2011		.670	.550	ug/L
Silvex (2,4,5-tp)	OW-402B	9/20/2011		.420	.270	ug/L
Silvex (2,4,5-tp)	OW-402B	11/08/2011		.390	.270	ug/L
Silvex (2,4,5-tp)	OW-402B	2/22/2012		.610	.290	ug/L
Silvex (2,4,5-tp)	OW-402B	9/14/2018		1.220	.349	ug/L
Silvex (2,4,5-tp)	OW-402B	3/23/2020		2.080	.316	ug/L
Silvex (2,4,5-tp)	OW-402B	10/16/2024		.889	.246	ug/L
Tetrachloroethylene	OW-402B	2/22/2012		.18	.18	ug/L
Tetrachloroethylene	OW-402B	12/07/2012		.21	.18	ug/L
Trans-1,2-dichloroethylene	OW-402B	2/23/2011		1.570	1.000	ug/L
Trans-1,2-dichloroethylene	OW-402B	3/25/2011		2.240	1.000	ug/L
Trans-1,2-dichloroethylene	OW-402B	5/02/2011		2.090	1.000	ug/L
Trans-1,2-dichloroethylene	OW-402B	6/23/2011		2.390	1.000	ug/L
Trans-1,2-dichloroethylene	OW-402B	8/26/2011		1.200	1.000	ug/L
Trans-1,2-dichloroethylene	OW-402B	11/08/2011		1.500	.210	ug/L
Trans-1,2-dichloroethylene	OW-402B	2/22/2012		1.570	.210	ug/L

Detections are shown for the constituents and sample points selected for the analysis
The Limit column refers to the laboratory reporting limit

Table 9

Historical Volatile Organic Compound Detections

Constituent	Well	Date	Identifier	Result	Limit	Units
Trans-1,2-dichloroethylene	OW-402B	5/11/2012		1.470	.210	ug/L
Trans-1,2-dichloroethylene	OW-402B	12/07/2012		2.710	.210	ug/L
Trans-1,2-dichloroethylene	OW-402B	4/26/2013		1.510	.210	ug/L
Trans-1,2-dichloroethylene	OW-402B	10/15/2013		.779	.210	ug/L
Trans-1,2-dichloroethylene	OW-402B	3/18/2014		2.020	.210	ug/L
Trans-1,2-dichloroethylene	OW-402B	8/29/2014		1.260	.210	ug/L
Trans-1,2-dichloroethylene	OW-402B	2/24/2015		2.150	.210	ug/L
Trans-1,2-dichloroethylene	OW-402B	8/26/2015		.669	.210	ug/L
Trans-1,2-dichloroethylene	OW-402B	9/30/2016		.353	.210	ug/L
Trans-1,2-dichloroethylene	OW-402B	12/09/2016		1.040	.210	ug/L
Trans-1,2-dichloroethylene	OW-402B	4/06/2017		.589	.210	ug/L
Trans-1,2-dichloroethylene	OW-402B	9/18/2017		1.250	.210	ug/L
Trans-1,2-dichloroethylene	OW-402B	3/29/2018		2.260	.210	ug/L
Trans-1,2-dichloroethylene	OW-402B	9/14/2018		.988	.270	ug/L
Trans-1,2-dichloroethylene	OW-402B	10/07/2019		1.090	.270	ug/L
Trans-1,2-dichloroethylene	OW-402B	10/06/2020		1.450	.270	ug/L
Trichloroethylene	OW-402B	12/07/2012		.220	.190	ug/L
Trichloroethylene	OW-402B	3/29/2018		.225	.190	ug/L
Vinyl chloride	OW-402B	2/23/2011		20.70	1.00	ug/L
Vinyl chloride	OW-402B	3/25/2011		27.90	1.00	ug/L
Vinyl chloride	OW-402B	5/02/2011		24.80	1.00	ug/L
Vinyl chloride	OW-402B	6/23/2011		33.70	1.00	ug/L
Vinyl chloride	OW-402B	8/26/2011		11.20	1.00	ug/L
Vinyl chloride	OW-402B	11/08/2011		12.70	.10	ug/L
Vinyl chloride	OW-402B	2/22/2012		11.40	.10	ug/L
Vinyl chloride	OW-402B	5/11/2012		6.48	.10	ug/L
Vinyl chloride	OW-402B	12/07/2012		18.00	.10	ug/L
Vinyl chloride	OW-402B	4/26/2013		7.67	.10	ug/L
Vinyl chloride	OW-402B	10/15/2013		4.01	.10	ug/L
Vinyl chloride	OW-402B	3/18/2014		14.90	.10	ug/L
Vinyl chloride	OW-402B	8/29/2014		5.42	.10	ug/L
Vinyl chloride	OW-402B	2/24/2015		11.70	.10	ug/L
Vinyl chloride	OW-402B	8/26/2015		4.22	.10	ug/L
Vinyl chloride	OW-402B	9/30/2016		1.27	.10	ug/L
Vinyl chloride	OW-402B	12/09/2016		4.35	.10	ug/L
Vinyl chloride	OW-402B	4/06/2017		1.90	.10	ug/L
Vinyl chloride	OW-402B	9/18/2017		5.08	.10	ug/L
Vinyl chloride	OW-402B	3/29/2018		7.06	.10	ug/L
Vinyl chloride	OW-402B	9/14/2018		3.49	.60	ug/L
Vinyl chloride	OW-402B	4/16/2019		1.76	.60	ug/L
Vinyl chloride	OW-402B	10/07/2019		3.65	.18	ug/L
Vinyl chloride	OW-402B	3/25/2020		2.02	.18	ug/L
Vinyl chloride	OW-402B	10/06/2020		3.56	.18	ug/L
Vinyl chloride	OW-402B	4/02/2021		2.06	.18	ug/L
Vinyl chloride	OW-402B	11/22/2021		2.45	.18	ug/L
Vinyl chloride	OW-402B	4/14/2022		1.99	.18	ug/L
Vinyl chloride	OW-402B	11/09/2022		1.96	.18	ug/L
Vinyl chloride	OW-402B	3/28/2023		2.07	.18	ug/L
Vinyl chloride	OW-402B	9/28/2023		1.90	.18	ug/L
Vinyl chloride	OW-402B	10/16/2024		1.55	.18	ug/L
2-butanone	OW-403B	11/04/2011		.51	.47	ug/L
2-butanone	OW-403B	5/10/2012		.71	.47	ug/L
Acetone	OW-403B	3/20/2017		1.87	1.79	ug/L
Acetone	OW-403B	9/07/2017		3.19	1.79	ug/L
Acetone	OW-403B	3/13/2018		3.28	1.79	ug/L
Bromomethane	OW-403B	9/07/2017		.383	.220	ug/L
Carbon disulfide	OW-403B	3/20/2017		.263	.150	ug/L
Dichloromethane	OW-403B	2/22/2012		.750	.170	ug/L
Dichloromethane	OW-403B	12/03/2012		.290	.170	ug/L
Dichloromethane	OW-403B	3/18/2014		.713	.170	ug/L
Dichloromethane	OW-403B	3/10/2016		.230	.170	ug/L
Dichloromethane	OW-403B	3/20/2017		.385	.170	ug/L
Dichloromethane	OW-403B	9/07/2017		.277	.170	ug/L
Dichloromethane	OW-403B	3/13/2018		.278	.170	ug/L
M,p-xylene	OW-403B	3/13/2018		.144	.120	ug/L

Detections are shown for the constituents and sample points selected for the analysis
The Limit column refers to the laboratory reporting limit

Table 9

Historical Volatile Organic Compound Detections

Constituent	Well	Date	Identifier	Result	Limit	Units
Toluene	OW-403B	3/20/2017		.190	.150	ug/L
Toluene	OW-403B	3/13/2018		.158	.150	ug/L
Xylenes	OW-403B	3/13/2018		.144	.130	ug/L
1,2-dibromo-3-chloropropane	OW-405B	11/04/2011		.18	.12	ug/L
2-butanone	OW-405B	5/10/2012		.69	.47	ug/L
Acetone	OW-405B	3/22/2017		2.14	1.79	ug/L
Acetone	OW-405B	9/06/2017		3.35	1.79	ug/L
Acetone	OW-405B	3/13/2018		4.18	1.79	ug/L
Bromomethane	OW-405B	9/06/2017		.462	.220	ug/L
Carbon disulfide	OW-405B	9/19/2016		.167	.150	ug/L
Dichloromethane	OW-405B	2/22/2012		.420	.170	ug/L
Dichloromethane	OW-405B	12/03/2012		.450	.170	ug/L
Dichloromethane	OW-405B	3/18/2014		.444	.170	ug/L
Dichloromethane	OW-405B	9/19/2016		.190	.170	ug/L
Dichloromethane	OW-405B	3/22/2017		.536	.170	ug/L
Tribromomethane	OW-405B	10/14/2013		.346	.140	ug/L
2-butanone	OW-406B	8/19/2013		6.50	.47	ug/L
Acetone	OW-406B	8/19/2013		3.48	1.79	ug/L
Acetone	OW-406B	3/20/2017		2.72	1.79	ug/L
Acetone	OW-406B	9/06/2017		3.81	1.79	ug/L
Bromomethane	OW-406B	9/19/2016		.391	.220	ug/L
Bromomethane	OW-406B	9/06/2017		.360	.220	ug/L
Carbon disulfide	OW-406B	9/19/2016		.157	.150	ug/L
Dichloromethane	OW-406B	12/03/2012		.240	.170	ug/L
Dichloromethane	OW-406B	6/27/2013		.377	.170	ug/L
Dichloromethane	OW-406B	8/19/2013		.600	.170	ug/L
Dichloromethane	OW-406B	3/18/2014		.281	.170	ug/L
Dichloromethane	OW-406B	9/19/2016		.208	.170	ug/L
Dichloromethane	OW-406B	3/20/2017		.197	.170	ug/L
Dichloromethane	OW-406B	9/06/2017		.271	.170	ug/L
Toluene	OW-406B	3/20/2017		.197	.150	ug/L
Toluene	OW-406B	3/15/2018		.242	.150	ug/L
1,4-dichlorobenzene	OW-410B	4/08/2017		.809	.200	ug/L
1,4-dichlorobenzene	OW-410B	9/14/2017		.444	.200	ug/L
1,4-dichlorobenzene	OW-410B	11/30/2017		.393	.200	ug/L
2-butanone	OW-410B	12/15/2016		2.74	1.04	ug/L
2-butanone	OW-410B	9/14/2017		2.30	1.04	ug/L
2-butanone	OW-410B	11/30/2017		2.45	1.04	ug/L
2-butanone	OW-410B	9/17/2018		3.28	2.10	ug/L
4-methyl-2-pentanone	OW-410B	12/15/2016		1.13	.22	ug/L
Acetone	OW-410B	12/15/2016		10.50	1.79	ug/L
Acetone	OW-410B	4/08/2017		3.17	1.79	ug/L
Acetone	OW-410B	6/21/2017		5.50	1.79	ug/L
Acetone	OW-410B	9/14/2017		6.38	1.79	ug/L
Acetone	OW-410B	11/30/2017		3.76	1.79	ug/L
Acetone	OW-410B	3/27/2018		2.13	1.79	ug/L
Acetone	OW-410B	9/17/2018		16.30	3.10	ug/L
Acetone	OW-410B	5/16/2024		17.10	3.10	ug/L
Benzene	OW-410B	12/15/2016		3.850	.110	ug/L
Benzene	OW-410B	4/08/2017		.973	.110	ug/L
Benzene	OW-410B	6/21/2017		.650	.110	ug/L
Benzene	OW-410B	9/14/2017		1.180	.110	ug/L
Benzene	OW-410B	11/30/2017		1.150	.110	ug/L
Benzene	OW-410B	9/17/2018		.810	.220	ug/L
Benzene	OW-410B	9/25/2019		.953	.220	ug/L
Benzene	OW-410B	4/08/2020		2.960	.220	ug/L
Benzene	OW-410B	9/22/2020		1.450	.220	ug/L
Benzene	OW-410B	3/30/2021		3.600	.220	ug/L
Benzene	OW-410B	5/05/2022		1.880	.220	ug/L
Benzene	OW-410B	3/24/2023		1.770	.220	ug/L
Benzene	OW-410B	5/16/2024		2.020	.220	ug/L
Bromomethane	OW-410B	12/15/2016		.515	.220	ug/L
Bromomethane	OW-410B	9/14/2017		.422	.220	ug/L
Bromomethane	OW-410B	11/30/2017		.283	.220	ug/L
Chlorobenzene	OW-410B	4/08/2017		.826	.190	ug/L

Detections are shown for the constituents and sample points selected for the analysis
The Limit column refers to the laboratory reporting limit

Table 9

Historical Volatile Organic Compound Detections

Constituent	Well	Date	Identifier	Result	Limit	Units
Chlorobenzene	OW-410B	6/21/2017		1.340	.190	ug/L
Chlorobenzene	OW-410B	9/14/2017		1.310	.190	ug/L
Chlorobenzene	OW-410B	11/30/2017		1.580	.190	ug/L
Chlorobenzene	OW-410B	9/17/2018		2.530	.400	ug/L
Chlorobenzene	OW-410B	9/25/2019		4.190	.400	ug/L
Chlorobenzene	OW-410B	4/08/2020		5.540	.400	ug/L
Chlorobenzene	OW-410B	9/22/2020		5.150	.400	ug/L
Chlorobenzene	OW-410B	3/30/2021		4.720	.400	ug/L
Chlorobenzene	OW-410B	5/05/2022		3.990	.400	ug/L
Chlorobenzene	OW-410B	3/24/2023		4.340	.400	ug/L
Chlorobenzene	OW-410B	5/16/2024		4.540	.400	ug/L
Cis-1,2-dichloroethylene	OW-410B	12/15/2016		.202	.130	ug/L
Cis-1,2-dichloroethylene	OW-410B	6/21/2017		.140	.130	ug/L
Dichloromethane	OW-410B	12/15/2016		.638	.170	ug/L
Dichloromethane	OW-410B	4/08/2017		.348	.170	ug/L
Dichloromethane	OW-410B	6/21/2017		.324	.170	ug/L
Dichloromethane	OW-410B	11/30/2017		.343	.170	ug/L
M,p-xylene	OW-410B	12/15/2016		.261	.120	ug/L
M,p-xylene	OW-410B	4/08/2017		.216	.120	ug/L
Toluene	OW-410B	12/15/2016		.380	.150	ug/L
Toluene	OW-410B	4/08/2017		.151	.150	ug/L
Toluene	OW-410B	6/21/2017		.502	.150	ug/L
Toluene	OW-410B	9/14/2017		.191	.150	ug/L
Toluene	OW-410B	11/30/2017		.497	.150	ug/L
Xylenes	OW-410B	12/15/2016		.261	.130	ug/L
Xylenes	OW-410B	4/08/2017		.216	.130	ug/L
1,2-dichloroethane	OW-411B	4/07/2017		.214	.180	ug/L
2-butanone	OW-411B	6/14/2017		2.05	1.04	ug/L
2-butanone	OW-411B	9/14/2017		1.50	1.04	ug/L
2-butanone	OW-411B	11/28/2017		1.30	1.04	ug/L
Acetone	OW-411B	12/15/2016		5.98	1.79	ug/L
Acetone	OW-411B	4/07/2017		3.92	1.79	ug/L
Acetone	OW-411B	6/14/2017		4.60	1.79	ug/L
Acetone	OW-411B	9/14/2017		4.28	1.79	ug/L
Acetone	OW-411B	11/28/2017		1.95	1.79	ug/L
Acetone	OW-411B	3/26/2018		6.26	1.79	ug/L
Benzene	OW-411B	12/15/2016		.859	.110	ug/L
Benzene	OW-411B	4/07/2017		1.800	.110	ug/L
Benzene	OW-411B	6/14/2017		1.530	.110	ug/L
Benzene	OW-411B	9/14/2017		2.220	.110	ug/L
Benzene	OW-411B	11/28/2017		2.270	.110	ug/L
Benzene	OW-411B	3/26/2018		1.140	.110	ug/L
Benzene	OW-411B	9/07/2018		1.740	.220	ug/L
Benzene	OW-411B	4/05/2019		1.350	.220	ug/L
Benzene	OW-411B	9/23/2019		2.500	.220	ug/L
Benzene	OW-411B	4/02/2020		1.420	.220	ug/L
Benzene	OW-411B	9/29/2020		1.780	.220	ug/L
Bromomethane	OW-411B	12/15/2016		.478	.220	ug/L
Bromomethane	OW-411B	6/14/2017		.904	.220	ug/L
Bromomethane	OW-411B	9/14/2017		.434	.220	ug/L
Bromomethane	OW-411B	3/26/2018		.250	.220	ug/L
Chloroethane	OW-411B	12/15/2016		1.120	.150	ug/L
Chloroethane	OW-411B	4/07/2017		1.250	.150	ug/L
Chloroethane	OW-411B	6/14/2017		.851	.150	ug/L
Chloroethane	OW-411B	9/14/2017		.944	.150	ug/L
Chloroethane	OW-411B	11/28/2017		.956	.150	ug/L
Chloroethane	OW-411B	9/07/2018		.929	.790	ug/L
Chloromethane	OW-411B	11/28/2017		.386	.310	ug/L
Cis-1,2-dichloroethylene	OW-411B	12/15/2016		.342	.130	ug/L
Cis-1,2-dichloroethylene	OW-411B	4/07/2017		.654	.130	ug/L
Cis-1,2-dichloroethylene	OW-411B	6/14/2017		.389	.130	ug/L
Cis-1,2-dichloroethylene	OW-411B	9/14/2017		.622	.130	ug/L
Cis-1,2-dichloroethylene	OW-411B	11/28/2017		.426	.130	ug/L
Cis-1,2-dichloroethylene	OW-411B	3/26/2018		.412	.130	ug/L
Cis-1,2-dichloroethylene	OW-411B	9/07/2018		.495	.210	ug/L

Detections are shown for the constituents and sample points selected for the analysis
The Limit column refers to the laboratory reporting limit

Table 9

Historical Volatile Organic Compound Detections

Constituent	Well	Date	Identifier	Result	Limit	Units
Dichloromethane	OW-411B	12/15/2016		.815	.170	ug/L
Dichloromethane	OW-411B	4/07/2017		.331	.170	ug/L
Dichloromethane	OW-411B	6/14/2017		.697	.170	ug/L
Dichloromethane	OW-411B	11/28/2017		1.210	.170	ug/L
M,p-xylene	OW-411B	12/15/2016		.121	.120	ug/L
M,p-xylene	OW-411B	11/28/2017		.358	.120	ug/L
Toluene	OW-411B	12/15/2016		.278	.150	ug/L
Toluene	OW-411B	6/14/2017		.340	.150	ug/L
Toluene	OW-411B	11/28/2017		3.580	.150	ug/L
Toluene	OW-411B	3/26/2018		.169	.150	ug/L
Vinyl chloride	OW-411B	12/15/2016		.405	.100	ug/L
Vinyl chloride	OW-411B	4/07/2017		.717	.100	ug/L
Vinyl chloride	OW-411B	6/14/2017		.321	.100	ug/L
Vinyl chloride	OW-411B	9/14/2017		.444	.100	ug/L
Vinyl chloride	OW-411B	11/28/2017		.255	.100	ug/L
Xylenes	OW-411B	11/28/2017		.358	.130	ug/L
1,1-dichloroethane	OW-412B	12/06/2016		.429	.210	ug/L
1,1-dichloroethane	OW-412B	4/07/2017		.316	.210	ug/L
1,1-dichloroethane	OW-412B	6/13/2017		.370	.210	ug/L
1,1-dichloroethane	OW-412B	9/13/2017		.322	.210	ug/L
1,1-dichloroethane	OW-412B	11/28/2017		.914	.210	ug/L
1,1-dichloroethane	OW-412B	3/22/2018		.333	.210	ug/L
1,1-dichloroethane	OW-412B	9/07/2018		.422	.220	ug/L
1,2-dichloropropane	OW-412B	9/07/2018		.514	.270	ug/L
2-butanone	OW-412B	6/13/2017		1.46	1.04	ug/L
2-butanone	OW-412B	9/13/2017		1.78	1.04	ug/L
Acetone	OW-412B	12/06/2016		2.05	1.79	ug/L
Acetone	OW-412B	4/07/2017		3.25	1.79	ug/L
Acetone	OW-412B	6/13/2017		4.02	1.79	ug/L
Acetone	OW-412B	9/13/2017		5.80	1.79	ug/L
Acetone	OW-412B	11/28/2017		5.48	1.79	ug/L
Acetone	OW-412B	3/22/2018		2.37	1.79	ug/L
Benzene	OW-412B	12/06/2016		.235	.110	ug/L
Benzene	OW-412B	4/07/2017		.605	.110	ug/L
Benzene	OW-412B	6/13/2017		.668	.110	ug/L
Benzene	OW-412B	9/13/2017		.653	.110	ug/L
Benzene	OW-412B	11/28/2017		.706	.110	ug/L
Benzene	OW-412B	3/22/2018		.616	.110	ug/L
Benzene	OW-412B	9/07/2018		.852	.220	ug/L
Benzene	OW-412B	4/05/2019		.719	.220	ug/L
Benzene	OW-412B	9/23/2019		.921	.220	ug/L
Benzene	OW-412B	9/28/2020		.724	.220	ug/L
Benzene	OW-412B	3/11/2021		.692	.220	ug/L
Benzene	OW-412B	4/21/2022		.542	.220	ug/L
Benzene	OW-412B	4/07/2023		.525	.220	ug/L
Bromomethane	OW-412B	12/06/2016		.433	.220	ug/L
Bromomethane	OW-412B	6/13/2017		1.020	.220	ug/L
Bromomethane	OW-412B	9/13/2017		.304	.220	ug/L
Bromomethane	OW-412B	11/28/2017		.323	.220	ug/L
Carbon disulfide	OW-412B	12/06/2016		.203	.150	ug/L
Chloroethane	OW-412B	12/06/2016		1.09	.15	ug/L
Chloroethane	OW-412B	4/07/2017		2.10	.15	ug/L
Chloroethane	OW-412B	6/13/2017		1.73	.15	ug/L
Chloroethane	OW-412B	9/13/2017		1.98	.15	ug/L
Chloroethane	OW-412B	11/28/2017		1.90	.15	ug/L
Chloroethane	OW-412B	9/07/2018		1.71	.79	ug/L
Cis-1,2-dichloroethylene	OW-412B	12/06/2016		5.90	.13	ug/L
Cis-1,2-dichloroethylene	OW-412B	4/07/2017		8.10	.13	ug/L
Cis-1,2-dichloroethylene	OW-412B	6/13/2017		9.47	.13	ug/L
Cis-1,2-dichloroethylene	OW-412B	9/13/2017		11.30	.13	ug/L
Cis-1,2-dichloroethylene	OW-412B	11/28/2017		12.70	.13	ug/L
Cis-1,2-dichloroethylene	OW-412B	3/22/2018		14.80	.13	ug/L
Cis-1,2-dichloroethylene	OW-412B	9/07/2018		16.70	.21	ug/L
Cis-1,2-dichloroethylene	OW-412B	4/05/2019		15.80	.21	ug/L
Cis-1,2-dichloroethylene	OW-412B	9/23/2019		18.40	.21	ug/L

Detections are shown for the constituents and sample points selected for the analysis
The Limit column refers to the laboratory reporting limit

Table 9

Historical Volatile Organic Compound Detections

Constituent	Well	Date	Identifier	Result	Limit	Units
Cis-1,2-dichloroethylene	OW-412B	4/10/2020		10.20	.21	ug/L
Cis-1,2-dichloroethylene	OW-412B	9/28/2020		16.30	.21	ug/L
Cis-1,2-dichloroethylene	OW-412B	3/11/2021		16.40	.21	ug/L
Cis-1,2-dichloroethylene	OW-412B	4/21/2022		17.50	.21	ug/L
Cis-1,2-dichloroethylene	OW-412B	4/07/2023		17.80	.21	ug/L
Cis-1,2-dichloroethylene	OW-412B	5/15/2024		11.80	.21	ug/L
Dichloromethane	OW-412B	12/06/2016		.464	.170	ug/L
Dichloromethane	OW-412B	4/07/2017		.374	.170	ug/L
Dichloromethane	OW-412B	6/13/2017		.807	.170	ug/L
M,p-xylene	OW-412B	11/28/2017		.123	.120	ug/L
Toluene	OW-412B	6/13/2017		.254	.150	ug/L
Toluene	OW-412B	11/28/2017		.386	.150	ug/L
Trans-1,2-dichloroethylene	OW-412B	12/06/2016		.232	.210	ug/L
Trans-1,2-dichloroethylene	OW-412B	4/07/2017		.371	.210	ug/L
Trans-1,2-dichloroethylene	OW-412B	6/13/2017		.300	.210	ug/L
Trans-1,2-dichloroethylene	OW-412B	9/13/2017		.369	.210	ug/L
Trans-1,2-dichloroethylene	OW-412B	11/28/2017		.420	.210	ug/L
Trans-1,2-dichloroethylene	OW-412B	3/22/2018		.459	.210	ug/L
Trans-1,2-dichloroethylene	OW-412B	9/07/2018		.641	.270	ug/L
Vinyl chloride	OW-412B	12/06/2016		.695	.100	ug/L
Vinyl chloride	OW-412B	4/07/2017		2.560	.100	ug/L
Vinyl chloride	OW-412B	6/13/2017		3.110	.100	ug/L
Vinyl chloride	OW-412B	9/13/2017		2.540	.100	ug/L
Vinyl chloride	OW-412B	11/28/2017		4.330	.100	ug/L
Vinyl chloride	OW-412B	3/22/2018		2.160	.100	ug/L
Vinyl chloride	OW-412B	9/07/2018		3.390	.600	ug/L
Vinyl chloride	OW-412B	9/23/2019		5.060	.180	ug/L
Vinyl chloride	OW-412B	9/28/2020		4.140	.180	ug/L
Vinyl chloride	OW-412B	3/11/2021		4.860	.180	ug/L
Vinyl chloride	OW-412B	4/21/2022		3.630	.180	ug/L
Vinyl chloride	OW-412B	4/07/2023		3.370	.180	ug/L
1,1-dichloroethane	OW-413B	12/06/2016		.311	.210	ug/L
1,1-dichloroethane	OW-413B	4/07/2017		.340	.210	ug/L
1,1-dichloroethane	OW-413B	6/15/2017		.256	.210	ug/L
1,1-dichloroethane	OW-413B	11/28/2017		.856	.210	ug/L
1,1-dichloroethane	OW-413B	3/28/2018		.324	.210	ug/L
2-butanone	OW-413B	12/06/2016		1.37	1.04	ug/L
Acetone	OW-413B	12/06/2016		3.16	1.79	ug/L
Acetone	OW-413B	4/07/2017		3.34	1.79	ug/L
Acetone	OW-413B	6/15/2017		5.29	1.79	ug/L
Acetone	OW-413B	9/29/2017		4.32	1.79	ug/L
Acetone	OW-413B	11/28/2017		2.06	1.79	ug/L
Acetone	OW-413B	3/28/2018		3.87	1.79	ug/L
Acetone	OW-413B	9/12/2018		3.69	3.10	ug/L
Acetone	OW-413B	9/12/2018		3.69	3.10	ug/L
Benzene	OW-413B	12/06/2016		2.57	.11	ug/L
Benzene	OW-413B	4/07/2017		1.87	.11	ug/L
Benzene	OW-413B	6/15/2017		1.29	.11	ug/L
Benzene	OW-413B	9/29/2017		1.72	.11	ug/L
Benzene	OW-413B	11/28/2017		2.24	.11	ug/L
Benzene	OW-413B	3/28/2018		1.98	.11	ug/L
Benzene	OW-413B	9/12/2018		2.00	.22	ug/L
Benzene	OW-413B	9/12/2018		2.00	.22	ug/L
Benzene	OW-413B	4/15/2019		1.43	.22	ug/L
Benzene	OW-413B	9/25/2019		1.39	.22	ug/L
Benzene	OW-413B	4/10/2020		1.26	.22	ug/L
Benzene	OW-413B	9/28/2020		1.05	.22	ug/L
Benzene	OW-413B	3/11/2021		1.16	.22	ug/L
Benzene	OW-413B	11/22/2021		1.64	.22	ug/L
Benzene	OW-413B	4/27/2022		1.36	.22	ug/L
Benzene	OW-413B	11/09/2022		1.57	.22	ug/L
Benzene	OW-413B	4/07/2023		1.32	.22	ug/L
Benzene	OW-413B	10/03/2023		1.57	.22	ug/L
Benzene	OW-413B	5/15/2024		1.17	.22	ug/L
Benzene	OW-413B	10/16/2024		1.90	.22	ug/L

Detections are shown for the constituents and sample points selected for the analysis
The Limit column refers to the laboratory reporting limit

Table 9

Historical Volatile Organic Compound Detections

Constituent	Well	Date	Identifier	Result	Limit	Units
Bromomethane	OW-413B	12/06/2016		.318	.220	ug/L
Carbon disulfide	OW-413B	12/06/2016		.348	.150	ug/L
Chloroethane	OW-413B	12/06/2016		1.950	.150	ug/L
Chloroethane	OW-413B	4/07/2017		1.950	.150	ug/L
Chloroethane	OW-413B	6/15/2017		.928	.150	ug/L
Chloroethane	OW-413B	9/29/2017		1.560	.150	ug/L
Chloroethane	OW-413B	11/28/2017		1.630	.150	ug/L
Chloroethane	OW-413B	3/28/2018		1.340	.150	ug/L
Chloroethane	OW-413B	9/12/2018		1.230	.790	ug/L
Chloroethane	OW-413B	9/12/2018		1.230	.790	ug/L
Chloromethane	OW-413B	11/28/2017		.355	.310	ug/L
Cis-1,2-dichloroethylene	OW-413B	12/06/2016		1.490	.130	ug/L
Cis-1,2-dichloroethylene	OW-413B	4/07/2017		1.150	.130	ug/L
Cis-1,2-dichloroethylene	OW-413B	6/15/2017		.588	.130	ug/L
Cis-1,2-dichloroethylene	OW-413B	9/29/2017		.748	.130	ug/L
Cis-1,2-dichloroethylene	OW-413B	11/28/2017		.825	.130	ug/L
Cis-1,2-dichloroethylene	OW-413B	3/28/2018		1.010	.130	ug/L
Cis-1,2-dichloroethylene	OW-413B	9/12/2018		.788	.210	ug/L
Cis-1,2-dichloroethylene	OW-413B	9/12/2018		.788	.210	ug/L
Cis-1,2-dichloroethylene	OW-413B	11/22/2021		1.020	.210	ug/L
Cis-1,2-dichloroethylene	OW-413B	4/27/2022		1.130	.210	ug/L
Dichloromethane	OW-413B	12/06/2016		.475	.170	ug/L
Dichloromethane	OW-413B	4/07/2017		.288	.170	ug/L
Dichloromethane	OW-413B	11/28/2017		.469	.170	ug/L
M,p-xylene	OW-413B	12/06/2016		.196	.120	ug/L
M,p-xylene	OW-413B	11/28/2017		.154	.120	ug/L
Toluene	OW-413B	6/15/2017		.434	.150	ug/L
Toluene	OW-413B	11/28/2017		.426	.150	ug/L
Toluene	OW-413B	3/28/2018		.161	.150	ug/L
Vinyl chloride	OW-413B	12/06/2016		.287	.100	ug/L
Vinyl chloride	OW-413B	4/07/2017		.266	.100	ug/L
Vinyl chloride	OW-413B	6/15/2017		.129	.100	ug/L
Vinyl chloride	OW-413B	11/28/2017		.395	.100	ug/L
Vinyl chloride	OW-413B	3/28/2018		.251	.100	ug/L
Xylenes	OW-413B	12/06/2016		.196	.130	ug/L
Xylenes	OW-413B	11/28/2017		.154	.130	ug/L
1,1-dichloroethane	OW-414B	12/07/2016		.444	.210	ug/L
1,1-dichloroethane	OW-414B	4/07/2017		.419	.210	ug/L
1,1-dichloroethane	OW-414B	6/14/2017		.461	.210	ug/L
1,1-dichloroethane	OW-414B	9/13/2017		.305	.210	ug/L
1,1-dichloroethane	OW-414B	11/29/2017		.896	.210	ug/L
1,1-dichloroethane	OW-414B	3/21/2018		.859	.210	ug/L
1,1-dichloroethane	OW-414B	9/12/2018		.891	.220	ug/L
1,1-dichloroethane	OW-414B	9/12/2018		.891	.220	ug/L
1,2-dichloroethane	OW-414B	6/14/2017		.188	.180	ug/L
1,2-dichloropropane	OW-414B	12/07/2016		2.33	.87	ug/L
1,2-dichloropropane	OW-414B	4/07/2017		1.22	.87	ug/L
1,2-dichloropropane	OW-414B	6/14/2017		1.79	.87	ug/L
1,2-dichloropropane	OW-414B	9/13/2017		1.65	.87	ug/L
1,2-dichloropropane	OW-414B	11/29/2017		1.44	.87	ug/L
1,2-dichloropropane	OW-414B	3/21/2018		1.60	.87	ug/L
1,2-dichloropropane	OW-414B	9/12/2018		1.71	.27	ug/L
1,2-dichloropropane	OW-414B	9/12/2018		1.71	.27	ug/L
1,2-dichloropropane	OW-414B	4/16/2019		1.12	.27	ug/L
1,4-dichlorobenzene	OW-414B	4/07/2017		3.40	.20	ug/L
1,4-dichlorobenzene	OW-414B	11/29/2017		1.53	.20	ug/L
1,4-dichlorobenzene	OW-414B	3/21/2018		3.43	.20	ug/L
1,4-dichlorobenzene	OW-414B	4/16/2019		2.08	.23	ug/L
1,4-dichlorobenzene	OW-414B	4/10/2020		1.64	.23	ug/L
1,4-dichlorobenzene	OW-414B	4/27/2022		1.56	.23	ug/L
1,4-dichlorobenzene	OW-414B	4/07/2023		2.71	.23	ug/L
1,4-dichlorobenzene	OW-414B	5/08/2024		1.84	.23	ug/L
2-butanone	OW-414B	6/14/2017		1.83	1.04	ug/L
2-butanone	OW-414B	9/13/2017		2.36	1.04	ug/L
2-butanone	OW-414B	3/21/2018		2.93	1.04	ug/L

Detections are shown for the constituents and sample points selected for the analysis
The Limit column refers to the laboratory reporting limit

Table 9

Historical Volatile Organic Compound Detections

Constituent	Well	Date	Identifier	Result	Limit	Units
4-methyl-2-pentanone	OW-414B	12/07/2016		.541	.220	ug/L
Acetone	OW-414B	12/07/2016		5.63	1.79	ug/L
Acetone	OW-414B	4/07/2017		2.60	1.79	ug/L
Acetone	OW-414B	6/14/2017		3.52	1.79	ug/L
Acetone	OW-414B	9/13/2017		5.70	1.79	ug/L
Acetone	OW-414B	11/29/2017		3.02	1.79	ug/L
Acetone	OW-414B	9/12/2018		4.32	3.10	ug/L
Acetone	OW-414B	9/12/2018		4.32	3.10	ug/L
Benzene	OW-414B	12/07/2016		1.92	.11	ug/L
Benzene	OW-414B	4/07/2017		3.02	.11	ug/L
Benzene	OW-414B	6/14/2017		2.66	.11	ug/L
Benzene	OW-414B	9/13/2017		1.43	.11	ug/L
Benzene	OW-414B	11/29/2017		1.66	.11	ug/L
Benzene	OW-414B	3/21/2018		3.00	.11	ug/L
Benzene	OW-414B	9/12/2018		2.32	.22	ug/L
Benzene	OW-414B	9/12/2018		2.32	.22	ug/L
Benzene	OW-414B	4/16/2019		2.15	.22	ug/L
Benzene	OW-414B	9/30/2019		1.51	.22	ug/L
Benzene	OW-414B	4/10/2020		1.39	.22	ug/L
Benzene	OW-414B	9/28/2020		1.97	.22	ug/L
Benzene	OW-414B	3/11/2021		1.42	.22	ug/L
Benzene	OW-414B	4/27/2022		2.15	.22	ug/L
Benzene	OW-414B	4/07/2023		2.54	.22	ug/L
Benzene	OW-414B	5/08/2024		1.98	.22	ug/L
Bromomethane	OW-414B	6/14/2017		.766	.220	ug/L
Bromomethane	OW-414B	9/13/2017		.477	.220	ug/L
Bromomethane	OW-414B	11/29/2017		.432	.220	ug/L
Carbon disulfide	OW-414B	6/14/2017		.161	.150	ug/L
Chlorobenzene	OW-414B	4/07/2017		.590	.190	ug/L
Chlorobenzene	OW-414B	6/14/2017		.568	.190	ug/L
Chlorobenzene	OW-414B	9/13/2017		.482	.190	ug/L
Chlorobenzene	OW-414B	11/29/2017		.558	.190	ug/L
Chlorobenzene	OW-414B	3/21/2018		.783	.190	ug/L
Chlorobenzene	OW-414B	9/12/2018		.608	.400	ug/L
Chlorobenzene	OW-414B	9/12/2018		.608	.400	ug/L
Chlorobenzene	OW-414B	9/28/2020		1.280	.400	ug/L
Chloroethane	OW-414B	12/07/2016		3.50	.15	ug/L
Chloroethane	OW-414B	4/07/2017		2.74	.15	ug/L
Chloroethane	OW-414B	6/14/2017		3.02	.15	ug/L
Chloroethane	OW-414B	9/13/2017		2.40	.15	ug/L
Chloroethane	OW-414B	11/29/2017		2.12	.15	ug/L
Chloroethane	OW-414B	3/21/2018		1.72	.15	ug/L
Chloroethane	OW-414B	9/12/2018		7.01	.79	ug/L
Chloroethane	OW-414B	9/12/2018		7.01	.79	ug/L
Chloromethane	OW-414B	11/29/2017		.338	.310	ug/L
Cis-1,2-dichloroethylene	OW-414B	12/07/2016		31.30	.13	ug/L
Cis-1,2-dichloroethylene	OW-414B	4/07/2017		17.60	.13	ug/L
Cis-1,2-dichloroethylene	OW-414B	6/14/2017		22.50	.13	ug/L
Cis-1,2-dichloroethylene	OW-414B	9/13/2017		27.30	.13	ug/L
Cis-1,2-dichloroethylene	OW-414B	11/29/2017		21.50	.13	ug/L
Cis-1,2-dichloroethylene	OW-414B	3/21/2018		22.30	.13	ug/L
Cis-1,2-dichloroethylene	OW-414B	9/12/2018		24.00	.21	ug/L
Cis-1,2-dichloroethylene	OW-414B	9/12/2018		24.00	.21	ug/L
Cis-1,2-dichloroethylene	OW-414B	4/16/2019		17.30	.21	ug/L
Cis-1,2-dichloroethylene	OW-414B	9/30/2019		18.90	.21	ug/L
Cis-1,2-dichloroethylene	OW-414B	4/10/2020		16.50	.21	ug/L
Cis-1,2-dichloroethylene	OW-414B	9/28/2020		10.70	.21	ug/L
Cis-1,2-dichloroethylene	OW-414B	3/11/2021		9.21	.21	ug/L
Cis-1,2-dichloroethylene	OW-414B	4/27/2022		10.40	.21	ug/L
Cis-1,2-dichloroethylene	OW-414B	4/07/2023		8.99	.21	ug/L
Cis-1,2-dichloroethylene	OW-414B	5/08/2024		6.98	.21	ug/L
Dichloromethane	OW-414B	12/07/2016		.238	.170	ug/L
Dichloromethane	OW-414B	4/07/2017		.388	.170	ug/L
Dichloromethane	OW-414B	6/14/2017		.629	.170	ug/L
Dichloromethane	OW-414B	11/29/2017		.210	.170	ug/L

Detections are shown for the constituents and sample points selected for the analysis
The Limit column refers to the laboratory reporting limit

Table 9

Historical Volatile Organic Compound Detections

Constituent	Well	Date	Identifier	Result	Limit	Units
M,p-xylene	OW-414B	6/14/2017		.121	.120	ug/L
Toluene	OW-414B	12/07/2016		.257	.150	ug/L
Toluene	OW-414B	6/14/2017		.244	.150	ug/L
Toluene	OW-414B	11/29/2017		.354	.150	ug/L
Toluene	OW-414B	3/21/2018		.152	.150	ug/L
Trans-1,2-dichloroethylene	OW-414B	12/07/2016		1.39	.21	ug/L
Trans-1,2-dichloroethylene	OW-414B	4/07/2017		1.13	.21	ug/L
Trans-1,2-dichloroethylene	OW-414B	6/14/2017		1.23	.21	ug/L
Trans-1,2-dichloroethylene	OW-414B	9/13/2017		1.18	.21	ug/L
Trans-1,2-dichloroethylene	OW-414B	11/29/2017		1.15	.21	ug/L
Trans-1,2-dichloroethylene	OW-414B	3/21/2018		1.23	.21	ug/L
Trans-1,2-dichloroethylene	OW-414B	9/12/2018		1.25	.27	ug/L
Trans-1,2-dichloroethylene	OW-414B	9/12/2018		1.25	.27	ug/L
Trans-1,2-dichloroethylene	OW-414B	4/16/2019		1.15	.27	ug/L
Trans-1,2-dichloroethylene	OW-414B	9/30/2019		1.02	.27	ug/L
Trichloroethylene	OW-414B	4/07/2017		.209	.190	ug/L
Trichloroethylene	OW-414B	6/14/2017		.197	.190	ug/L
Trichloroethylene	OW-414B	9/13/2017		.206	.190	ug/L
Trichloroethylene	OW-414B	3/21/2018		.209	.190	ug/L
Vinyl chloride	OW-414B	12/07/2016		7.25	.10	ug/L
Vinyl chloride	OW-414B	4/07/2017		1.23	.10	ug/L
Vinyl chloride	OW-414B	6/14/2017		3.02	.10	ug/L
Vinyl chloride	OW-414B	9/13/2017		5.08	.10	ug/L
Vinyl chloride	OW-414B	11/29/2017		4.66	.10	ug/L
Vinyl chloride	OW-414B	3/21/2018		3.14	.10	ug/L
Vinyl chloride	OW-414B	9/12/2018		5.65	.60	ug/L
Vinyl chloride	OW-414B	9/12/2018		5.65	.60	ug/L
Vinyl chloride	OW-414B	4/16/2019		1.12	.60	ug/L
Vinyl chloride	OW-414B	9/30/2019		3.77	.18	ug/L
Vinyl chloride	OW-414B	4/10/2020		2.82	.18	ug/L
Vinyl chloride	OW-414B	9/28/2020		2.92	.18	ug/L
Vinyl chloride	OW-414B	3/11/2021		2.04	.18	ug/L
Vinyl chloride	OW-414B	4/27/2022		1.24	.18	ug/L
Xylenes	OW-414B	11/29/2017		.132	.130	ug/L

Detections are shown for the constituents and sample points selected for the analysis
The Limit column refers to the laboratory reporting limit

APPENDIX A-2
BEDROCK

False Positive and False Negative Rates for Current Upgradient vs. Downgradient Monitoring Program

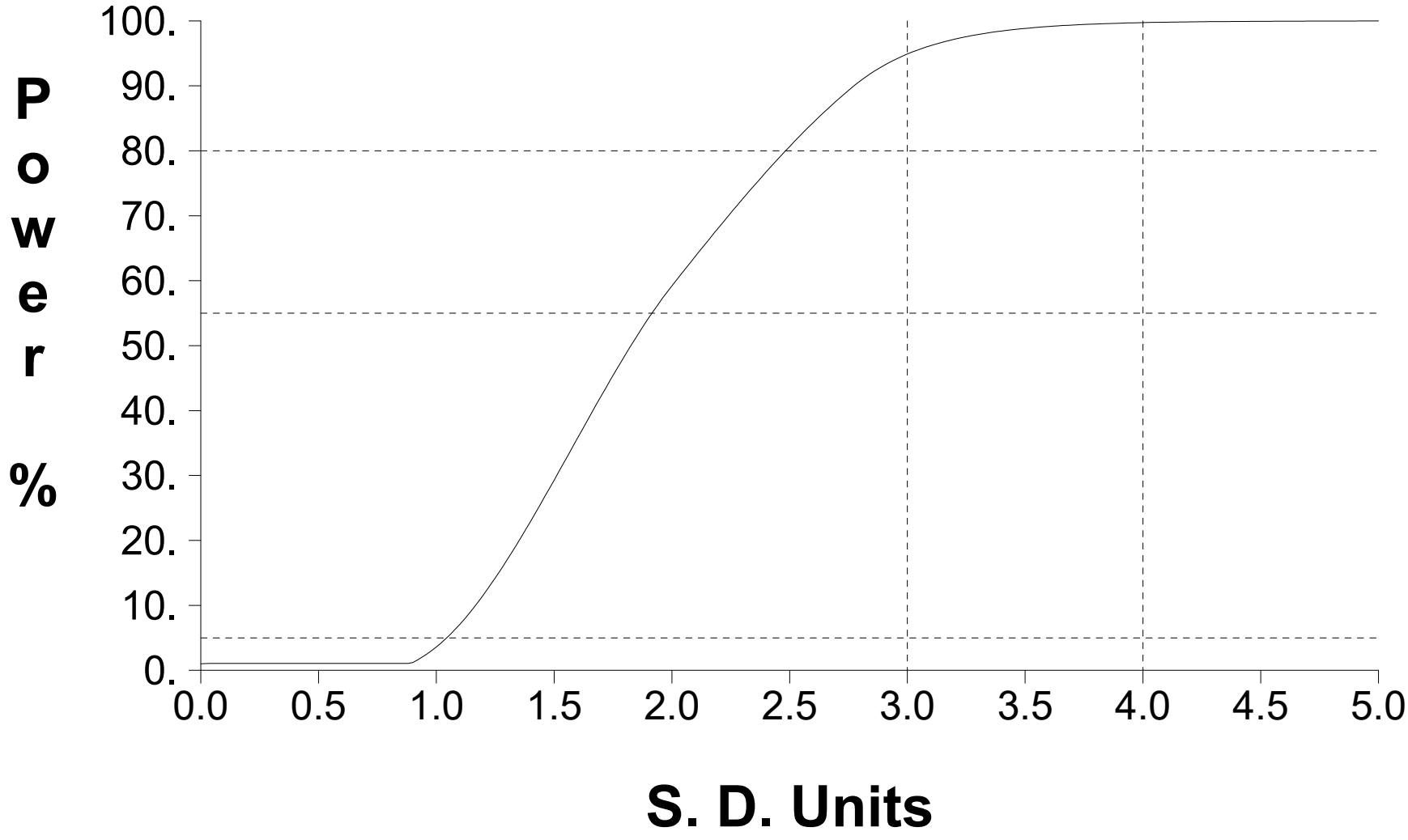

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Antimony	ug/L	MW-318CR	01/21/2014	ND	0.4000	0.5300	**
Antimony	ug/L	MW-318CR	04/02/2014		1.8100		
Antimony	ug/L	MW-318CR	09/08/2014		1.0100		
Antimony	ug/L	MW-318CR	03/20/2015		0.2060		
Antimony	ug/L	MW-318CR	09/08/2015		0.3370		
Antimony	ug/L	MW-318CR	03/28/2016	ND	0.2370	0.5300	**
Antimony	ug/L	MW-318CR	10/11/2016	ND	0.2370	0.5300	**
Antimony	ug/L	MW-318CR	04/04/2017		0.2830		
Antimony	ug/L	MW-318CR	09/28/2017	ND	0.1850	0.5300	**
Antimony	ug/L	MW-318CR	04/11/2018	ND	0.4200	0.5300	**
Antimony	ug/L	MW-318CR	09/25/2018	ND	0.4200	0.5300	**
Antimony	ug/L	MW-318CR	04/19/2019	ND	0.5300		
Antimony	ug/L	MW-318CR	10/09/2019	ND	0.5300		
Antimony	ug/L	MW-318CR	04/20/2020	ND	0.5800	0.5300	**
Antimony	ug/L	MW-318CR	10/08/2020	ND	0.5100	0.5300	**
Antimony	ug/L	MW-318CR	04/06/2021	ND	1.1000	0.5300	**
Arsenic	ug/L	MW-318CR	01/21/2014		1.1300		
Arsenic	ug/L	MW-318CR	04/02/2014		0.4010		
Arsenic	ug/L	MW-318CR	09/08/2014	ND	0.9450	0.7500	**
Arsenic	ug/L	MW-318CR	03/20/2015	ND	0.9450	0.7500	**
Arsenic	ug/L	MW-318CR	09/08/2015	ND	0.9450	0.7500	**
Arsenic	ug/L	MW-318CR	03/28/2016	ND	0.6720	0.7500	**
Arsenic	ug/L	MW-318CR	10/11/2016	ND	0.6720	0.7500	**
Arsenic	ug/L	MW-318CR	04/04/2017	ND	0.5050	0.7500	**
Arsenic	ug/L	MW-318CR	09/28/2017	ND	0.5050	0.7500	**
Arsenic	ug/L	MW-318CR	04/11/2018	ND	0.5700	0.7500	**
Arsenic	ug/L	MW-318CR	09/25/2018	ND	0.5700	0.7500	**
Arsenic	ug/L	MW-318CR	04/19/2019	ND	0.7500		
Arsenic	ug/L	MW-318CR	10/09/2019	ND	0.7500		
Arsenic	ug/L	MW-318CR	04/20/2020	ND	0.8800	0.7500	**
Arsenic	ug/L	MW-318CR	10/08/2020	ND	0.8800	0.7500	**
Arsenic	ug/L	MW-318CR	04/06/2021	ND	0.7500		
Barium	ug/L	MW-318CR	01/21/2014		72.6000		
Barium	ug/L	MW-318CR	04/02/2014		56.6000		
Barium	ug/L	MW-318CR	09/08/2014		45.0000		
Barium	ug/L	MW-318CR	03/20/2015		46.6000		
Barium	ug/L	MW-318CR	09/08/2015		46.6000		
Barium	ug/L	MW-318CR	03/28/2016		47.4000		
Barium	ug/L	MW-318CR	10/11/2016		46.6000		
Barium	ug/L	MW-318CR	04/04/2017		48.7000		
Barium	ug/L	MW-318CR	09/28/2017		49.6000		
Barium	ug/L	MW-318CR	04/11/2018		50.1000		
Barium	ug/L	MW-318CR	09/25/2018		47.7000		

* - Outlier for that well and constituent.
** - ND value replaced with median RL.
*** - ND value replaced with manual RL.
ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Barium	ug/L	MW-318CR	04/19/2019		53.2000		
Barium	ug/L	MW-318CR	10/09/2019		47.0000		
Barium	ug/L	MW-318CR	04/20/2020		44.1000		
Barium	ug/L	MW-318CR	10/08/2020		52.2000		
Barium	ug/L	MW-318CR	04/06/2021		54.7000		
Beryllium	ug/L	MW-318CR	01/21/2014	ND	0.0800	0.2210	**
Beryllium	ug/L	MW-318CR	04/02/2014	ND	0.0800	0.2210	**
Beryllium	ug/L	MW-318CR	09/08/2014	ND	0.0390	0.2210	**
Beryllium	ug/L	MW-318CR	03/20/2015	ND	0.0390	0.2210	**
Beryllium	ug/L	MW-318CR	09/08/2015	ND	0.0390	0.2210	**
Beryllium	ug/L	MW-318CR	03/28/2016	ND	0.2210		
Beryllium	ug/L	MW-318CR	10/11/2016	ND	0.2210		
Beryllium	ug/L	MW-318CR	04/04/2017	ND	0.1250	0.2210	**
Beryllium	ug/L	MW-318CR	09/28/2017	ND	0.1250	0.2210	**
Beryllium	ug/L	MW-318CR	04/11/2018	ND	0.1900	0.2210	**
Beryllium	ug/L	MW-318CR	09/25/2018	ND	0.1900	0.2210	**
Beryllium	ug/L	MW-318CR	04/19/2019	ND	0.2700	0.2210	**
Beryllium	ug/L	MW-318CR	10/09/2019	ND	0.2700	0.2210	**
Beryllium	ug/L	MW-318CR	04/20/2020	ND	0.2700	0.2210	**
Beryllium	ug/L	MW-318CR	10/08/2020	ND	0.2700	0.2210	**
Beryllium	ug/L	MW-318CR	04/06/2021	ND	0.2700	0.2210	**
Cadmium	ug/L	MW-318CR	01/21/2014	ND	0.1000	0.0600	**
Cadmium	ug/L	MW-318CR	04/02/2014	ND	0.1000	0.0600	**
Cadmium	ug/L	MW-318CR	09/08/2014	ND	0.1120	0.0600	**
Cadmium	ug/L	MW-318CR	03/20/2015	ND	0.1120	0.0600	**
Cadmium	ug/L	MW-318CR	09/08/2015	ND	0.1120	0.0600	**
Cadmium	ug/L	MW-318CR	03/28/2016		0.0990		
Cadmium	ug/L	MW-318CR	10/11/2016	ND	0.0351	0.0600	**
Cadmium	ug/L	MW-318CR	04/04/2017	ND	0.0441	0.0600	**
Cadmium	ug/L	MW-318CR	09/28/2017	ND	0.0441	0.0600	**
Cadmium	ug/L	MW-318CR	04/11/2018	ND	0.0600		
Cadmium	ug/L	MW-318CR	09/25/2018	ND	0.0600		
Cadmium	ug/L	MW-318CR	04/19/2019	ND	0.0770	0.0600	**
Cadmium	ug/L	MW-318CR	10/09/2019	ND	0.0390	0.0600	**
Cadmium	ug/L	MW-318CR	04/20/2020	ND	0.0390	0.0600	**
Cadmium	ug/L	MW-318CR	10/08/2020	ND	0.0490	0.0600	**
Cadmium	ug/L	MW-318CR	04/06/2021	ND	0.0510	0.0600	**
Chromium	ug/L	MW-318CR	01/21/2014		4.3600		
Chromium	ug/L	MW-318CR	04/02/2014		22.2000		
Chromium	ug/L	MW-318CR	09/08/2014	ND	1.2400	1.1000	**
Chromium	ug/L	MW-318CR	03/20/2015	ND	1.2400	1.1000	**
Chromium	ug/L	MW-318CR	09/08/2015	ND	1.2400	1.1000	**
Chromium	ug/L	MW-318CR	03/28/2016		6.9000		

* - Outlier for that well and constituent.
** - ND value replaced with median RL.
*** - ND value replaced with manual RL.
ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Chromium	ug/L	MW-318CR	10/11/2016	ND	0.3550	1.1000	**
Chromium	ug/L	MW-318CR	04/04/2017		2.2100		
Chromium	ug/L	MW-318CR	09/28/2017	ND	0.7290	1.1000	**
Chromium	ug/L	MW-318CR	04/11/2018		1.0900		
Chromium	ug/L	MW-318CR	09/25/2018		1.7600		
Chromium	ug/L	MW-318CR	04/19/2019	ND	0.9800	1.1000	**
Chromium	ug/L	MW-318CR	10/09/2019	ND	0.9800	1.1000	**
Chromium	ug/L	MW-318CR	04/20/2020	ND	1.1000		
Chromium	ug/L	MW-318CR	10/08/2020	ND	1.1000		
Chromium	ug/L	MW-318CR	04/06/2021	ND	1.1000		
Cobalt	ug/L	MW-318CR	01/21/2014		0.3610		
Cobalt	ug/L	MW-318CR	04/02/2014		0.4060		*
Cobalt	ug/L	MW-318CR	09/08/2014		0.0950		
Cobalt	ug/L	MW-318CR	03/20/2015	ND	0.0528	0.0910	**
Cobalt	ug/L	MW-318CR	09/08/2015		0.0700		
Cobalt	ug/L	MW-318CR	03/28/2016		0.4490		*
Cobalt	ug/L	MW-318CR	10/11/2016	ND	0.0274	0.0910	**
Cobalt	ug/L	MW-318CR	04/04/2017		0.0820		
Cobalt	ug/L	MW-318CR	09/28/2017		0.0460		
Cobalt	ug/L	MW-318CR	04/11/2018	ND	0.0610	0.0910	**
Cobalt	ug/L	MW-318CR	09/25/2018	ND	0.0610	0.0910	**
Cobalt	ug/L	MW-318CR	04/19/2019	ND	0.0910		
Cobalt	ug/L	MW-318CR	10/09/2019	ND	0.0910		
Cobalt	ug/L	MW-318CR	04/20/2020	ND	0.0910		
Cobalt	ug/L	MW-318CR	10/08/2020	ND	0.0910		
Cobalt	ug/L	MW-318CR	04/06/2021	ND	0.0910		
Copper	ug/L	MW-318CR	01/21/2014		4.1100		
Copper	ug/L	MW-318CR	04/02/2014		1.3300		
Copper	ug/L	MW-318CR	09/08/2014	ND	0.4850	1.8000	**
Copper	ug/L	MW-318CR	03/20/2015	ND	0.4850	1.8000	**
Copper	ug/L	MW-318CR	09/08/2015	ND	0.4850	1.8000	**
Copper	ug/L	MW-318CR	03/28/2016	ND	1.2200	1.8000	**
Copper	ug/L	MW-318CR	10/11/2016	ND	1.2200	1.8000	**
Copper	ug/L	MW-318CR	04/04/2017	ND	2.1900	1.8000	**
Copper	ug/L	MW-318CR	09/28/2017	ND	2.1900	1.8000	**
Copper	ug/L	MW-318CR	04/11/2018	ND	1.6000	1.8000	**
Copper	ug/L	MW-318CR	09/25/2018	ND	1.6000	1.8000	**
Copper	ug/L	MW-318CR	04/19/2019	ND	2.0000	1.8000	**
Copper	ug/L	MW-318CR	10/09/2019	ND	2.0000	1.8000	**
Copper	ug/L	MW-318CR	04/20/2020	ND	3.2000	1.8000	**
Copper	ug/L	MW-318CR	10/08/2020	ND	1.5000	1.8000	**
Copper	ug/L	MW-318CR	04/06/2021	ND	1.4000	1.8000	**
Lead	ug/L	MW-318CR	01/21/2014	ND	0.1800	0.2400	**

* - Outlier for that well and constituent.
** - ND value replaced with median RL.
*** - ND value replaced with manual RL.
ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Lead	ug/L	MW-318CR	04/02/2014	ND	0.1800	0.2400	**
Lead	ug/L	MW-318CR	09/08/2014		0.4560		
Lead	ug/L	MW-318CR	03/20/2015	ND	0.0967	0.2400	**
Lead	ug/L	MW-318CR	09/08/2015		0.4740		
Lead	ug/L	MW-318CR	03/28/2016		2.0600		*
Lead	ug/L	MW-318CR	10/11/2016	ND	0.2110	0.2400	**
Lead	ug/L	MW-318CR	04/04/2017	ND	0.3240	0.2400	**
Lead	ug/L	MW-318CR	09/28/2017	ND	0.3240	0.2400	**
Lead	ug/L	MW-318CR	04/11/2018		0.2970		
Lead	ug/L	MW-318CR	09/25/2018	ND	0.2500	0.2400	**
Lead	ug/L	MW-318CR	04/19/2019	ND	0.2700	0.2400	**
Lead	ug/L	MW-318CR	10/09/2019	ND	0.2700	0.2400	**
Lead	ug/L	MW-318CR	04/20/2020	ND	0.2700	0.2400	**
Lead	ug/L	MW-318CR	10/08/2020	ND	0.1100	0.2400	**
Lead	ug/L	MW-318CR	04/06/2021	ND	0.2100	0.2400	**
Nickel	ug/L	MW-318CR	01/21/2014		4.3300		
Nickel	ug/L	MW-318CR	04/02/2014		14.4000		
Nickel	ug/L	MW-318CR	09/08/2014		4.0700		
Nickel	ug/L	MW-318CR	03/20/2015		0.6750		
Nickel	ug/L	MW-318CR	09/08/2015		1.5000		
Nickel	ug/L	MW-318CR	03/28/2016		12.0000		
Nickel	ug/L	MW-318CR	10/11/2016	ND	1.5300	1.9000	**
Nickel	ug/L	MW-318CR	04/04/2017		3.8900		
Nickel	ug/L	MW-318CR	09/28/2017		1.0800		
Nickel	ug/L	MW-318CR	04/11/2018		1.5600		
Nickel	ug/L	MW-318CR	09/25/2018	ND	3.0000	1.9000	**
Nickel	ug/L	MW-318CR	04/19/2019	ND	1.7000	1.9000	**
Nickel	ug/L	MW-318CR	10/09/2019	ND	1.7000	1.9000	**
Nickel	ug/L	MW-318CR	04/20/2020	ND	1.9000		
Nickel	ug/L	MW-318CR	10/08/2020	ND	1.9000		
Nickel	ug/L	MW-318CR	04/06/2021	ND	1.9000		
Selenium	ug/L	MW-318CR	01/21/2014	ND	0.7000	0.9600	**
Selenium	ug/L	MW-318CR	04/02/2014	ND	0.7000	0.9600	**
Selenium	ug/L	MW-318CR	09/08/2014	ND	3.3400		*
Selenium	ug/L	MW-318CR	03/20/2015	ND	3.3400		*
Selenium	ug/L	MW-318CR	09/08/2015	ND	3.3400		*
Selenium	ug/L	MW-318CR	03/28/2016	ND	0.6300	0.9600	**
Selenium	ug/L	MW-318CR	10/11/2016	ND	0.6300	0.9600	**
Selenium	ug/L	MW-318CR	04/04/2017	ND	0.9280	0.9600	**
Selenium	ug/L	MW-318CR	09/28/2017	ND	0.9280	0.9600	**
Selenium	ug/L	MW-318CR	04/11/2018	ND	0.9000	0.9600	**
Selenium	ug/L	MW-318CR	09/25/2018	ND	0.9000	0.9600	**
Selenium	ug/L	MW-318CR	04/19/2019	ND	1.0000	0.9600	**

* - Outlier for that well and constituent.
** - ND value replaced with median RL.
*** - ND value replaced with manual RL.
ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Selenium	ug/L	MW-318CR	10/09/2019	ND	1.0000	0.9600	**
Selenium	ug/L	MW-318CR	04/20/2020	ND	1.0000	0.9600	**
Selenium	ug/L	MW-318CR	10/08/2020	ND	1.0000	0.9600	**
Selenium	ug/L	MW-318CR	04/06/2021	ND	0.9600		
Silver	ug/L	MW-318CR	01/21/2014	ND	0.0330	0.3700	**
Silver	ug/L	MW-318CR	04/02/2014	ND	0.0330	0.3700	**
Silver	ug/L	MW-318CR	09/08/2014	ND	0.0420	0.3700	**
Silver	ug/L	MW-318CR	03/20/2015	ND	0.0420	0.3700	**
Silver	ug/L	MW-318CR	09/08/2015		0.1460		
Silver	ug/L	MW-318CR	03/28/2016	ND	0.1530	0.3700	**
Silver	ug/L	MW-318CR	10/11/2016	ND	0.1530	0.3700	**
Silver	ug/L	MW-318CR	04/04/2017		0.1430		
Silver	ug/L	MW-318CR	09/28/2017	ND	0.1400	0.3700	**
Silver	ug/L	MW-318CR	04/11/2018	ND	0.3000	0.3700	**
Silver	ug/L	MW-318CR	09/25/2018	ND	0.3000	0.3700	**
Silver	ug/L	MW-318CR	04/19/2019	ND	0.3700		
Silver	ug/L	MW-318CR	10/09/2019	ND	0.3700		
Silver	ug/L	MW-318CR	04/20/2020	ND	0.3700		
Silver	ug/L	MW-318CR	10/08/2020	ND	0.3700		
Silver	ug/L	MW-318CR	04/06/2021	ND	0.4200	0.3700	**
Thallium	ug/L	MW-318CR	01/21/2014	ND	0.0500	0.1700	**
Thallium	ug/L	MW-318CR	04/02/2014	ND	0.0500	0.1700	**
Thallium	ug/L	MW-318CR	09/08/2014	ND	0.0325	0.1700	**
Thallium	ug/L	MW-318CR	03/20/2015	ND	0.0325	0.1700	**
Thallium	ug/L	MW-318CR	09/08/2015	ND	0.0325	0.1700	**
Thallium	ug/L	MW-318CR	03/28/2016	ND	0.0255	0.1700	**
Thallium	ug/L	MW-318CR	10/11/2016	ND	0.0255	0.1700	**
Thallium	ug/L	MW-318CR	04/04/2017	ND	0.0644	0.1700	**
Thallium	ug/L	MW-318CR	09/28/2017	ND	0.0644	0.1700	**
Thallium	ug/L	MW-318CR	04/11/2018	ND	0.1700		
Thallium	ug/L	MW-318CR	09/25/2018	ND	0.1700		
Thallium	ug/L	MW-318CR	04/19/2019	ND	0.2700	0.1700	**
Thallium	ug/L	MW-318CR	10/09/2019	ND	0.2700	0.1700	**
Thallium	ug/L	MW-318CR	04/20/2020	ND	0.2600	0.1700	**
Thallium	ug/L	MW-318CR	10/08/2020	ND	0.2600	0.1700	**
Thallium	ug/L	MW-318CR	04/06/2021		1.5600		
Vanadium	ug/L	MW-318CR	01/21/2014		0.5420		
Vanadium	ug/L	MW-318CR	04/02/2014	ND	0.5000	0.8400	**
Vanadium	ug/L	MW-318CR	09/08/2014	ND	0.4490	0.8400	**
Vanadium	ug/L	MW-318CR	03/20/2015		0.4890		
Vanadium	ug/L	MW-318CR	09/08/2015	ND	0.4490	0.8400	**
Vanadium	ug/L	MW-318CR	03/28/2016		1.1700		
Vanadium	ug/L	MW-318CR	10/11/2016		0.3450		

* - Outlier for that well and constituent.
** - ND value replaced with median RL.
*** - ND value replaced with manual RL.
ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Vanadium	ug/L	MW-318CR	04/04/2017	ND	0.8400		
Vanadium	ug/L	MW-318CR	09/28/2017	ND	0.8400		
Vanadium	ug/L	MW-318CR	04/11/2018	ND	0.5200	0.8400	**
Vanadium	ug/L	MW-318CR	09/25/2018	ND	0.5200	0.8400	**
Vanadium	ug/L	MW-318CR	04/19/2019	ND	0.8200	0.8400	**
Vanadium	ug/L	MW-318CR	10/09/2019	ND	0.8200	0.8400	**
Vanadium	ug/L	MW-318CR	04/20/2020	ND	0.8200	0.8400	**
Vanadium	ug/L	MW-318CR	10/08/2020	ND	0.8500	0.8400	**
Vanadium	ug/L	MW-318CR	04/06/2021	ND	1.1000	0.8400	**
Zinc	ug/L	MW-318CR	01/21/2014		2.6500		*
Zinc	ug/L	MW-318CR	04/02/2014	ND	2.0000		*
Zinc	ug/L	MW-318CR	09/08/2014		8.8600		
Zinc	ug/L	MW-318CR	03/20/2015	ND	6.9500	10.0000	**
Zinc	ug/L	MW-318CR	09/08/2015	ND	6.9500	10.0000	**
Zinc	ug/L	MW-318CR	03/28/2016		49.7000		*
Zinc	ug/L	MW-318CR	10/11/2016	ND	5.2100	10.0000	**
Zinc	ug/L	MW-318CR	04/04/2017	ND	11.5000	10.0000	**
Zinc	ug/L	MW-318CR	09/28/2017	ND	11.5000	10.0000	**
Zinc	ug/L	MW-318CR	04/11/2018	ND	10.0000		
Zinc	ug/L	MW-318CR	09/25/2018	ND	10.0000		
Zinc	ug/L	MW-318CR	04/19/2019	ND	10.0000		
Zinc	ug/L	MW-318CR	10/09/2019	ND	10.0000		
Zinc	ug/L	MW-318CR	04/20/2020	ND	10.0000		
Zinc	ug/L	MW-318CR	10/08/2020	ND	10.0000		
Zinc	ug/L	MW-318CR	04/06/2021	ND	10.0000		
Antimony	ug/L	P-604C	12/18/2014		0.7400		
Antimony	ug/L	P-604C	03/11/2015		0.7630		
Antimony	ug/L	P-604C	06/25/2015		0.4750		
Antimony	ug/L	P-604C	09/08/2015		0.4080		
Antimony	ug/L	P-604C	12/11/2015		0.8060		
Antimony	ug/L	P-604C	03/28/2016		0.2550		
Antimony	ug/L	P-604C	09/27/2016	ND	0.2370	0.5300	**
Antimony	ug/L	P-604C	04/04/2017	ND	0.1850	0.5300	**
Antimony	ug/L	P-604C	09/28/2017		0.2320		
Antimony	ug/L	P-604C	04/11/2018	ND	0.4200	0.5300	**
Antimony	ug/L	P-604C	09/25/2018	ND	0.4200	0.5300	**
Antimony	ug/L	P-604C	04/25/2019	ND	0.5300		
Antimony	ug/L	P-604C	10/07/2019	ND	0.5300		
Antimony	ug/L	P-604C	04/20/2020	ND	0.5800	0.5300	**
Antimony	ug/L	P-604C	09/23/2020	ND	0.5100	0.5300	**
Antimony	ug/L	P-604C	04/06/2021	ND	1.1000	0.5300	**
Antimony	ug/L	P-604C	11/23/2021	ND	1.1000	0.5300	**
Antimony	ug/L	P-604C	05/11/2022	ND	2.7600	0.5300	**

* - Outlier for that well and constituent.
** - ND value replaced with median RL.
*** - ND value replaced with manual RL.
ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Antimony	ug/L	P-604C	11/09/2022	ND	0.6900	0.5300	**
Antimony	ug/L	P-604C	04/19/2023	ND	1.0000	0.5300	**
Antimony	ug/L	P-604C	10/05/2023	ND	1.0000	0.5300	**
Arsenic	ug/L	P-604C	12/18/2014		1.1700		
Arsenic	ug/L	P-604C	03/11/2015		1.2800		
Arsenic	ug/L	P-604C	06/25/2015		1.1100		
Arsenic	ug/L	P-604C	09/08/2015	ND	0.9450	0.7500	**
Arsenic	ug/L	P-604C	12/11/2015	ND	0.9450	0.7500	**
Arsenic	ug/L	P-604C	03/28/2016		0.6840		
Arsenic	ug/L	P-604C	09/27/2016	ND	0.6720	0.7500	**
Arsenic	ug/L	P-604C	04/04/2017		0.5270		
Arsenic	ug/L	P-604C	09/28/2017		0.5400		
Arsenic	ug/L	P-604C	04/11/2018		0.7820		
Arsenic	ug/L	P-604C	09/25/2018	ND	0.5700	0.7500	**
Arsenic	ug/L	P-604C	04/25/2019	ND	0.7500		
Arsenic	ug/L	P-604C	10/07/2019	ND	0.7500		
Arsenic	ug/L	P-604C	04/20/2020	ND	0.8800	0.7500	**
Arsenic	ug/L	P-604C	09/23/2020	ND	0.8800	0.7500	**
Arsenic	ug/L	P-604C	04/06/2021	ND	0.7500		
Arsenic	ug/L	P-604C	11/23/2021	ND	0.7500		
Arsenic	ug/L	P-604C	05/11/2022	ND	3.0000		*
Arsenic	ug/L	P-604C	11/09/2022	ND	0.7500		
Arsenic	ug/L	P-604C	04/19/2023	ND	0.5300	0.7500	**
Arsenic	ug/L	P-604C	10/05/2023	ND	0.5300	0.7500	**
Barium	ug/L	P-604C	12/18/2014		82.2000		
Barium	ug/L	P-604C	03/11/2015		91.5000		
Barium	ug/L	P-604C	06/25/2015		88.7000		
Barium	ug/L	P-604C	09/08/2015		86.2000		
Barium	ug/L	P-604C	12/11/2015		90.0000		
Barium	ug/L	P-604C	03/28/2016		81.8000		
Barium	ug/L	P-604C	09/27/2016		84.9000		
Barium	ug/L	P-604C	04/04/2017		89.9000		
Barium	ug/L	P-604C	09/28/2017		85.8000		
Barium	ug/L	P-604C	04/11/2018		87.5000		
Barium	ug/L	P-604C	09/25/2018		76.5000		
Barium	ug/L	P-604C	04/25/2019		81.7000		
Barium	ug/L	P-604C	10/07/2019		85.0000		
Barium	ug/L	P-604C	04/20/2020		55.5000		
Barium	ug/L	P-604C	09/23/2020		56.9000		
Barium	ug/L	P-604C	04/06/2021		29.4000		
Barium	ug/L	P-604C	11/23/2021		20.3000		
Barium	ug/L	P-604C	05/11/2022		17.3000		
Barium	ug/L	P-604C	11/09/2022		26.8000		

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*** - ND value replaced with manual RL.
ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Barium	ug/L	P-604C	04/19/2023		21.4000		
Barium	ug/L	P-604C	10/05/2023		24.4000		
Beryllium	ug/L	P-604C	12/18/2014	ND	0.0390	0.2210	**
Beryllium	ug/L	P-604C	03/11/2015	ND	0.0390	0.2210	**
Beryllium	ug/L	P-604C	06/25/2015	ND	0.0390	0.2210	**
Beryllium	ug/L	P-604C	09/08/2015	ND	0.0390	0.2210	**
Beryllium	ug/L	P-604C	12/11/2015		0.0870		
Beryllium	ug/L	P-604C	03/28/2016	ND	0.2210		
Beryllium	ug/L	P-604C	09/27/2016	ND	0.2210		
Beryllium	ug/L	P-604C	04/04/2017	ND	0.1250	0.2210	**
Beryllium	ug/L	P-604C	09/28/2017	ND	0.1250	0.2210	**
Beryllium	ug/L	P-604C	04/11/2018	ND	0.1900	0.2210	**
Beryllium	ug/L	P-604C	09/25/2018	ND	0.1900	0.2210	**
Beryllium	ug/L	P-604C	04/25/2019	ND	0.2700	0.2210	**
Beryllium	ug/L	P-604C	10/07/2019	ND	0.2700	0.2210	**
Beryllium	ug/L	P-604C	04/20/2020	ND	0.2700	0.2210	**
Beryllium	ug/L	P-604C	09/23/2020	ND	0.2700	0.2210	**
Beryllium	ug/L	P-604C	04/06/2021	ND	0.2700	0.2210	**
Beryllium	ug/L	P-604C	11/23/2021	ND	0.2700	0.2210	**
Beryllium	ug/L	P-604C	05/11/2022	ND	1.0800	0.2210	**
Beryllium	ug/L	P-604C	11/09/2022	ND	0.2700	0.2210	**
Beryllium	ug/L	P-604C	04/19/2023	ND	0.3300	0.2210	**
Beryllium	ug/L	P-604C	10/05/2023	ND	0.3300	0.2210	**
Cadmium	ug/L	P-604C	12/18/2014	ND	0.1120	0.0600	**
Cadmium	ug/L	P-604C	03/11/2015	ND	0.1120	0.0600	**
Cadmium	ug/L	P-604C	06/25/2015	ND	0.1120	0.0600	**
Cadmium	ug/L	P-604C	09/08/2015	ND	0.1120	0.0600	**
Cadmium	ug/L	P-604C	12/11/2015	ND	0.1120	0.0600	**
Cadmium	ug/L	P-604C	03/28/2016	ND	0.0351	0.0600	**
Cadmium	ug/L	P-604C	09/27/2016	ND	0.0351	0.0600	**
Cadmium	ug/L	P-604C	04/04/2017	ND	0.0441	0.0600	**
Cadmium	ug/L	P-604C	09/28/2017	ND	0.0441	0.0600	**
Cadmium	ug/L	P-604C	04/11/2018	ND	0.0600		
Cadmium	ug/L	P-604C	09/25/2018	ND	0.0600		
Cadmium	ug/L	P-604C	04/25/2019	ND	0.0770	0.0600	**
Cadmium	ug/L	P-604C	10/07/2019	ND	0.0390	0.0600	**
Cadmium	ug/L	P-604C	04/20/2020	ND	0.0390	0.0600	**
Cadmium	ug/L	P-604C	09/23/2020	ND	0.0490	0.0600	**
Cadmium	ug/L	P-604C	04/06/2021	ND	0.0510	0.0600	**
Cadmium	ug/L	P-604C	11/23/2021	ND	0.0510	0.0600	**
Cadmium	ug/L	P-604C	05/11/2022	ND	0.2200	0.0600	**
Cadmium	ug/L	P-604C	11/09/2022	ND	0.0550	0.0600	**
Cadmium	ug/L	P-604C	04/19/2023	ND	0.1000	0.0600	**

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*** - ND value replaced with manual RL.
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Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Cadmium	ug/L	P-604C	10/05/2023	ND	0.1000	0.0600	**
Chromium	ug/L	P-604C	12/18/2014		1.3800		
Chromium	ug/L	P-604C	03/11/2015		1.2500		
Chromium	ug/L	P-604C	06/25/2015		1.3100		
Chromium	ug/L	P-604C	09/08/2015		1.5000		
Chromium	ug/L	P-604C	12/11/2015		1.6100		
Chromium	ug/L	P-604C	03/28/2016		1.9800		
Chromium	ug/L	P-604C	09/27/2016		5.7700		
Chromium	ug/L	P-604C	04/04/2017		8.3700		
Chromium	ug/L	P-604C	09/28/2017		7.2300		
Chromium	ug/L	P-604C	04/11/2018		3.9900		
Chromium	ug/L	P-604C	09/25/2018		4.2900		
Chromium	ug/L	P-604C	04/25/2019		5.2100		
Chromium	ug/L	P-604C	10/07/2019	ND	0.9800	1.1000	**
Chromium	ug/L	P-604C	04/20/2020		18.2000		
Chromium	ug/L	P-604C	09/23/2020		11.7000		
Chromium	ug/L	P-604C	04/06/2021		26.2000		
Chromium	ug/L	P-604C	11/23/2021		15.3000		
Chromium	ug/L	P-604C	05/11/2022	ND	4.4000	1.1000	**
Chromium	ug/L	P-604C	11/09/2022		8.8600		
Chromium	ug/L	P-604C	04/19/2023		9.9500		
Chromium	ug/L	P-604C	10/05/2023		13.2000		
Cobalt	ug/L	P-604C	12/18/2014		1.2400		
Cobalt	ug/L	P-604C	03/11/2015		0.9630		
Cobalt	ug/L	P-604C	06/25/2015		0.5950		
Cobalt	ug/L	P-604C	09/08/2015		0.4810		
Cobalt	ug/L	P-604C	12/11/2015		0.5210		
Cobalt	ug/L	P-604C	03/28/2016		0.2650		
Cobalt	ug/L	P-604C	09/27/2016		0.1450		
Cobalt	ug/L	P-604C	04/04/2017		0.0680		
Cobalt	ug/L	P-604C	09/28/2017		0.0740		
Cobalt	ug/L	P-604C	04/11/2018		0.1330		
Cobalt	ug/L	P-604C	09/25/2018		0.0650		
Cobalt	ug/L	P-604C	04/25/2019	ND	0.0910		
Cobalt	ug/L	P-604C	10/07/2019	ND	0.0910		
Cobalt	ug/L	P-604C	04/20/2020	ND	0.0910		
Cobalt	ug/L	P-604C	09/23/2020	ND	0.0910		
Cobalt	ug/L	P-604C	04/06/2021	ND	0.0910		
Cobalt	ug/L	P-604C	11/23/2021	ND	0.1900	0.0910	**
Cobalt	ug/L	P-604C	05/11/2022	ND	0.7600	0.0910	**
Cobalt	ug/L	P-604C	11/09/2022	ND	0.1900	0.0910	**
Cobalt	ug/L	P-604C	04/19/2023	ND	0.1700	0.0910	**
Cobalt	ug/L	P-604C	10/05/2023	ND	0.1700	0.0910	**

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*** - ND value replaced with manual RL.
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Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Copper	ug/L	P-604C	12/18/2014		3.0700		
Copper	ug/L	P-604C	03/11/2015		1.2900		
Copper	ug/L	P-604C	06/25/2015		1.2000		
Copper	ug/L	P-604C	09/08/2015		1.8000		
Copper	ug/L	P-604C	12/11/2015		3.9400		
Copper	ug/L	P-604C	03/28/2016		1.4200		
Copper	ug/L	P-604C	09/27/2016	ND	1.2200	1.8000	**
Copper	ug/L	P-604C	04/04/2017	ND	2.1900	1.8000	**
Copper	ug/L	P-604C	09/28/2017	ND	2.1900	1.8000	**
Copper	ug/L	P-604C	04/11/2018	ND	1.6000	1.8000	**
Copper	ug/L	P-604C	09/25/2018	ND	1.6000	1.8000	**
Copper	ug/L	P-604C	04/25/2019	ND	2.0000	1.8000	**
Copper	ug/L	P-604C	10/07/2019	ND	2.0000	1.8000	**
Copper	ug/L	P-604C	04/20/2020	ND	3.2000	1.8000	**
Copper	ug/L	P-604C	09/23/2020	ND	1.5000	1.8000	**
Copper	ug/L	P-604C	04/06/2021	ND	1.4000	1.8000	**
Copper	ug/L	P-604C	11/23/2021	ND	1.4000	1.8000	**
Copper	ug/L	P-604C	05/11/2022	ND	7.2000	1.8000	**
Copper	ug/L	P-604C	11/09/2022	ND	1.8000		
Copper	ug/L	P-604C	04/19/2023	ND	1.8000		
Copper	ug/L	P-604C	10/05/2023	ND	1.8000		
Lead	ug/L	P-604C	12/18/2014		0.2970		
Lead	ug/L	P-604C	03/11/2015		0.1660		
Lead	ug/L	P-604C	06/25/2015	ND	0.0967	0.2400	**
Lead	ug/L	P-604C	09/08/2015		0.2420		
Lead	ug/L	P-604C	12/11/2015		0.2000		
Lead	ug/L	P-604C	03/28/2016	ND	0.2110	0.2400	**
Lead	ug/L	P-604C	09/27/2016	ND	0.2110	0.2400	**
Lead	ug/L	P-604C	04/04/2017	ND	0.3240	0.2400	**
Lead	ug/L	P-604C	09/28/2017	ND	0.3240	0.2400	**
Lead	ug/L	P-604C	04/11/2018	ND	0.2500	0.2400	**
Lead	ug/L	P-604C	09/25/2018	ND	0.2500	0.2400	**
Lead	ug/L	P-604C	04/25/2019	ND	0.2700	0.2400	**
Lead	ug/L	P-604C	10/07/2019	ND	0.2700	0.2400	**
Lead	ug/L	P-604C	04/20/2020	ND	0.2700	0.2400	**
Lead	ug/L	P-604C	09/23/2020	ND	0.1100	0.2400	**
Lead	ug/L	P-604C	04/06/2021	ND	0.2100	0.2400	**
Lead	ug/L	P-604C	11/23/2021	ND	0.2100	0.2400	**
Lead	ug/L	P-604C	05/11/2022	ND	0.9600		*
Lead	ug/L	P-604C	11/09/2022	ND	0.2400		
Lead	ug/L	P-604C	04/19/2023	ND	0.2400		
Lead	ug/L	P-604C	10/05/2023	ND	0.2400		
Nickel	ug/L	P-604C	12/18/2014		37.0000		

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*** - ND value replaced with manual RL.
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Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Nickel	ug/L	P-604C	03/11/2015		19.0000		
Nickel	ug/L	P-604C	06/25/2015		8.9000		
Nickel	ug/L	P-604C	09/08/2015		9.0300		
Nickel	ug/L	P-604C	12/11/2015		7.5300		
Nickel	ug/L	P-604C	03/28/2016		5.7500		
Nickel	ug/L	P-604C	09/27/2016		2.9100		
Nickel	ug/L	P-604C	04/04/2017		3.8300		
Nickel	ug/L	P-604C	09/28/2017		1.9800		
Nickel	ug/L	P-604C	04/11/2018		3.0900		
Nickel	ug/L	P-604C	09/25/2018	ND	3.0000	1.9000	**
Nickel	ug/L	P-604C	04/25/2019	ND	1.7000	1.9000	**
Nickel	ug/L	P-604C	10/07/2019	ND	1.7000	1.9000	**
Nickel	ug/L	P-604C	04/20/2020		8.6100		
Nickel	ug/L	P-604C	09/23/2020		95.2000		
Nickel	ug/L	P-604C	04/06/2021		14.6000		
Nickel	ug/L	P-604C	11/23/2021		6.2900		
Nickel	ug/L	P-604C	05/11/2022	ND	7.6000	1.9000	**
Nickel	ug/L	P-604C	11/09/2022	ND	1.9000		
Nickel	ug/L	P-604C	04/19/2023	ND	1.9000		
Nickel	ug/L	P-604C	10/05/2023	ND	1.9000		
Selenium	ug/L	P-604C	12/18/2014	ND	3.3400	0.9600	**
Selenium	ug/L	P-604C	03/11/2015	ND	3.3400	0.9600	**
Selenium	ug/L	P-604C	06/25/2015	ND	3.3400	0.9600	**
Selenium	ug/L	P-604C	09/08/2015	ND	3.3400	0.9600	**
Selenium	ug/L	P-604C	12/11/2015	ND	3.3400	0.9600	**
Selenium	ug/L	P-604C	03/28/2016	ND	0.6300	0.9600	**
Selenium	ug/L	P-604C	09/27/2016	ND	0.6300	0.9600	**
Selenium	ug/L	P-604C	04/04/2017	ND	0.9280	0.9600	**
Selenium	ug/L	P-604C	09/28/2017	ND	0.9280	0.9600	**
Selenium	ug/L	P-604C	04/11/2018	ND	0.9000	0.9600	**
Selenium	ug/L	P-604C	09/25/2018	ND	0.9000	0.9600	**
Selenium	ug/L	P-604C	04/25/2019	ND	1.0000	0.9600	**
Selenium	ug/L	P-604C	10/07/2019	ND	1.0000	0.9600	**
Selenium	ug/L	P-604C	04/20/2020	ND	1.0000	0.9600	**
Selenium	ug/L	P-604C	09/23/2020	ND	1.0000	0.9600	**
Selenium	ug/L	P-604C	04/06/2021	ND	0.9600		
Selenium	ug/L	P-604C	11/23/2021	ND	0.9600		
Selenium	ug/L	P-604C	05/11/2022	ND	3.8400	0.9600	**
Selenium	ug/L	P-604C	11/09/2022	ND	0.9600		
Selenium	ug/L	P-604C	04/19/2023	ND	1.4000	0.9600	**
Selenium	ug/L	P-604C	10/05/2023	ND	1.4000	0.9600	**
Silver	ug/L	P-604C	12/18/2014	ND	0.0420	0.3700	**
Silver	ug/L	P-604C	03/11/2015	ND	0.0420	0.3700	**

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Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Silver	ug/L	P-604C	06/25/2015	ND	0.0420	0.3700	**
Silver	ug/L	P-604C	09/08/2015		0.1440		
Silver	ug/L	P-604C	12/11/2015	ND	0.0420	0.3700	**
Silver	ug/L	P-604C	03/28/2016	ND	0.1530	0.3700	**
Silver	ug/L	P-604C	09/27/2016	ND	0.1530	0.3700	**
Silver	ug/L	P-604C	04/04/2017		0.1420		
Silver	ug/L	P-604C	09/28/2017	ND	0.1400	0.3700	**
Silver	ug/L	P-604C	04/11/2018	ND	0.3000	0.3700	**
Silver	ug/L	P-604C	09/25/2018	ND	0.3000	0.3700	**
Silver	ug/L	P-604C	04/25/2019	ND	0.3700		
Silver	ug/L	P-604C	10/07/2019	ND	0.3700		
Silver	ug/L	P-604C	04/20/2020	ND	0.3700		
Silver	ug/L	P-604C	09/23/2020	ND	0.3700		
Silver	ug/L	P-604C	04/06/2021	ND	0.4200	0.3700	**
Silver	ug/L	P-604C	11/23/2021	ND	0.4200	0.3700	**
Silver	ug/L	P-604C	05/11/2022	ND	1.9600	0.3700	**
Silver	ug/L	P-604C	11/09/2022		1.3300		
Silver	ug/L	P-604C	04/19/2023	ND	0.5000	0.3700	**
Silver	ug/L	P-604C	10/05/2023	ND	0.5000	0.3700	**
Thallium	ug/L	P-604C	12/18/2014	ND	0.0325	0.1700	**
Thallium	ug/L	P-604C	03/11/2015	ND	0.0325	0.1700	**
Thallium	ug/L	P-604C	06/25/2015	ND	0.0325	0.1700	**
Thallium	ug/L	P-604C	09/08/2015	ND	0.0325	0.1700	**
Thallium	ug/L	P-604C	12/11/2015	ND	0.0325	0.1700	**
Thallium	ug/L	P-604C	03/28/2016	ND	0.0255	0.1700	**
Thallium	ug/L	P-604C	09/27/2016	ND	0.0255	0.1700	**
Thallium	ug/L	P-604C	04/04/2017	ND	0.0644	0.1700	**
Thallium	ug/L	P-604C	09/28/2017	ND	0.0644	0.1700	**
Thallium	ug/L	P-604C	04/11/2018	ND	0.1700		
Thallium	ug/L	P-604C	09/25/2018	ND	0.1700		
Thallium	ug/L	P-604C	04/25/2019	ND	0.2700	0.1700	**
Thallium	ug/L	P-604C	10/07/2019	ND	0.2700	0.1700	**
Thallium	ug/L	P-604C	04/20/2020	ND	0.2600	0.1700	**
Thallium	ug/L	P-604C	09/23/2020	ND	0.2600	0.1700	**
Thallium	ug/L	P-604C	04/06/2021	ND	0.2600	0.1700	**
Thallium	ug/L	P-604C	11/23/2021	ND	0.2600	0.1700	**
Thallium	ug/L	P-604C	05/11/2022	ND	1.0400	0.1700	**
Thallium	ug/L	P-604C	11/09/2022	ND	0.2600	0.1700	**
Thallium	ug/L	P-604C	04/19/2023	ND	0.2600	0.1700	**
Thallium	ug/L	P-604C	10/05/2023		1.1100		
Vanadium	ug/L	P-604C	12/18/2014	ND	0.4490	0.8400	**
Vanadium	ug/L	P-604C	03/11/2015		0.8190		
Vanadium	ug/L	P-604C	06/25/2015		0.6390		

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Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Vanadium	ug/L	P-604C	09/08/2015		0.7300		
Vanadium	ug/L	P-604C	12/11/2015		0.7670		
Vanadium	ug/L	P-604C	03/28/2016		0.4780		
Vanadium	ug/L	P-604C	09/27/2016		0.4290		
Vanadium	ug/L	P-604C	04/04/2017	ND	0.8400		
Vanadium	ug/L	P-604C	09/28/2017	ND	0.8400		
Vanadium	ug/L	P-604C	04/11/2018		0.6710		
Vanadium	ug/L	P-604C	09/25/2018		0.5880		
Vanadium	ug/L	P-604C	04/25/2019	ND	0.8200	0.8400	**
Vanadium	ug/L	P-604C	10/07/2019	ND	0.8200	0.8400	**
Vanadium	ug/L	P-604C	04/20/2020	ND	0.8200	0.8400	**
Vanadium	ug/L	P-604C	09/23/2020	ND	0.8500	0.8400	**
Vanadium	ug/L	P-604C	04/06/2021	ND	1.1000	0.8400	**
Vanadium	ug/L	P-604C	11/23/2021	ND	1.1000	0.8400	**
Vanadium	ug/L	P-604C	05/11/2022	ND	4.4000		*
Vanadium	ug/L	P-604C	11/09/2022	ND	1.1000	0.8400	**
Vanadium	ug/L	P-604C	04/19/2023	ND	1.1000	0.8400	**
Vanadium	ug/L	P-604C	10/05/2023	ND	1.1000	0.8400	**
Zinc	ug/L	P-604C	12/18/2014	ND	6.9500	10.0000	**
Zinc	ug/L	P-604C	03/11/2015	ND	6.9500	10.0000	**
Zinc	ug/L	P-604C	06/25/2015	ND	6.9500	10.0000	**
Zinc	ug/L	P-604C	09/08/2015	ND	6.9500	10.0000	**
Zinc	ug/L	P-604C	12/11/2015	ND	6.9500	10.0000	**
Zinc	ug/L	P-604C	03/28/2016	ND	5.2100	10.0000	**
Zinc	ug/L	P-604C	09/27/2016	ND	5.2100	10.0000	**
Zinc	ug/L	P-604C	04/04/2017	ND	11.5000	10.0000	**
Zinc	ug/L	P-604C	09/28/2017	ND	11.5000	10.0000	**
Zinc	ug/L	P-604C	04/11/2018	ND	10.0000		
Zinc	ug/L	P-604C	09/25/2018	ND	10.0000		
Zinc	ug/L	P-604C	04/25/2019	ND	10.0000		
Zinc	ug/L	P-604C	10/07/2019	ND	10.0000		
Zinc	ug/L	P-604C	04/20/2020	ND	10.0000		
Zinc	ug/L	P-604C	09/23/2020	ND	10.0000		
Zinc	ug/L	P-604C	04/06/2021	ND	10.0000		
Zinc	ug/L	P-604C	11/23/2021	ND	10.0000		
Zinc	ug/L	P-604C	05/11/2022	ND	40.0000		*
Zinc	ug/L	P-604C	11/09/2022	ND	10.0000		
Zinc	ug/L	P-604C	04/19/2023	ND	6.4000	10.0000	**
Zinc	ug/L	P-604C	10/05/2023	ND	6.4000	10.0000	**
Antimony	ug/L	P-703C	11/23/2021	ND	1.1000	0.5300	**
Antimony	ug/L	P-703C	05/11/2022	ND	0.6900	0.5300	**
Antimony	ug/L	P-703C	08/18/2022	ND	3.4500		*
Antimony	ug/L	P-703C	10/20/2022	ND	0.6900	0.5300	**

* - Outlier for that well and constituent.
** - ND value replaced with median RL.
*** - ND value replaced with manual RL.
ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Antimony	ug/L	P-703C	04/19/2023	ND	1.0000	0.5300	**
Antimony	ug/L	P-703C	10/03/2023	ND	1.0000	0.5300	**
Arsenic	ug/L	P-703C	11/23/2021	ND	0.7500		
Arsenic	ug/L	P-703C	05/11/2022	ND	0.7500		
Arsenic	ug/L	P-703C	08/18/2022	ND	3.7500		*
Arsenic	ug/L	P-703C	10/20/2022	ND	0.7500		
Arsenic	ug/L	P-703C	04/19/2023	ND	0.5300	0.7500	**
Arsenic	ug/L	P-703C	10/03/2023	ND	0.5300	0.7500	**
Barium	ug/L	P-703C	11/23/2021		211.0000		
Barium	ug/L	P-703C	05/11/2022		165.0000		
Barium	ug/L	P-703C	08/18/2022		722.0000		
Barium	ug/L	P-703C	10/20/2022		124.0000		
Barium	ug/L	P-703C	04/19/2023		127.0000		
Barium	ug/L	P-703C	10/03/2023		111.0000		
Beryllium	ug/L	P-703C	11/23/2021	ND	0.2700	0.2210	**
Beryllium	ug/L	P-703C	05/11/2022	ND	0.2700	0.2210	**
Beryllium	ug/L	P-703C	08/18/2022	ND	1.3500		*
Beryllium	ug/L	P-703C	10/20/2022	ND	0.2700	0.2210	**
Beryllium	ug/L	P-703C	04/19/2023	ND	0.3300	0.2210	**
Beryllium	ug/L	P-703C	10/03/2023	ND	0.3300	0.2210	**
Cadmium	ug/L	P-703C	11/23/2021	ND	0.0510	0.0600	**
Cadmium	ug/L	P-703C	05/11/2022	ND	0.0550	0.0600	**
Cadmium	ug/L	P-703C	08/18/2022	ND	0.2750	0.0600	**
Cadmium	ug/L	P-703C	10/20/2022	ND	0.0550	0.0600	**
Cadmium	ug/L	P-703C	04/19/2023	ND	0.1000	0.0600	**
Cadmium	ug/L	P-703C	10/03/2023	ND	0.1000	0.0600	**
Chromium	ug/L	P-703C	11/23/2021	ND	1.1000		
Chromium	ug/L	P-703C	05/11/2022	ND	1.1000		
Chromium	ug/L	P-703C	08/18/2022	ND	5.5000		*
Chromium	ug/L	P-703C	10/20/2022	ND	1.1000		
Chromium	ug/L	P-703C	04/19/2023	ND	1.1000		
Chromium	ug/L	P-703C	10/03/2023	ND	1.1000		
Cobalt	ug/L	P-703C	11/23/2021		0.5360		
Cobalt	ug/L	P-703C	05/11/2022	ND	0.1900	0.0910	**
Cobalt	ug/L	P-703C	08/18/2022		2.5000		
Cobalt	ug/L	P-703C	10/20/2022	ND	0.1900	0.0910	**
Cobalt	ug/L	P-703C	04/19/2023	ND	0.1700	0.0910	**
Cobalt	ug/L	P-703C	10/03/2023		0.6480		
Copper	ug/L	P-703C	11/23/2021	ND	1.4000	1.8000	**
Copper	ug/L	P-703C	05/11/2022	ND	1.8000		
Copper	ug/L	P-703C	08/18/2022	ND	9.0000		*
Copper	ug/L	P-703C	10/20/2022	ND	1.8000		
Copper	ug/L	P-703C	04/19/2023	ND	1.8000		

* - Outlier for that well and constituent.
** - ND value replaced with median RL.
*** - ND value replaced with manual RL.
ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Copper	ug/L	P-703C	10/03/2023	ND	1.8000		
Lead	ug/L	P-703C	11/23/2021	ND	0.2100	0.2400	**
Lead	ug/L	P-703C	05/11/2022	ND	0.2400		
Lead	ug/L	P-703C	08/18/2022	ND	1.2000		*
Lead	ug/L	P-703C	10/20/2022	ND	0.2400		
Lead	ug/L	P-703C	04/19/2023	ND	0.2400		
Lead	ug/L	P-703C	10/03/2023	ND	0.2400		
Nickel	ug/L	P-703C	11/23/2021	ND	1.9000		
Nickel	ug/L	P-703C	05/11/2022	ND	1.9000		
Nickel	ug/L	P-703C	08/18/2022	ND	9.5000		*
Nickel	ug/L	P-703C	10/20/2022	ND	1.9000		
Nickel	ug/L	P-703C	04/19/2023	ND	1.9000		
Nickel	ug/L	P-703C	10/03/2023	ND	1.9000		
Selenium	ug/L	P-703C	11/23/2021	ND	0.9600		
Selenium	ug/L	P-703C	05/11/2022	ND	0.9600		
Selenium	ug/L	P-703C	08/18/2022	ND	4.8000		*
Selenium	ug/L	P-703C	10/20/2022	ND	0.9600		
Selenium	ug/L	P-703C	04/19/2023	ND	1.4000	0.9600	**
Selenium	ug/L	P-703C	10/03/2023	ND	1.4000	0.9600	**
Silver	ug/L	P-703C	11/23/2021	ND	0.4200	0.3700	**
Silver	ug/L	P-703C	05/11/2022	ND	0.4900	0.3700	**
Silver	ug/L	P-703C	08/18/2022	ND	2.4500		*
Silver	ug/L	P-703C	10/20/2022	ND	0.4900	0.3700	**
Silver	ug/L	P-703C	04/19/2023	ND	0.5000	0.3700	**
Silver	ug/L	P-703C	10/03/2023	ND	0.5000	0.3700	**
Thallium	ug/L	P-703C	11/23/2021	ND	0.2600	0.1700	**
Thallium	ug/L	P-703C	05/11/2022	ND	0.2600	0.1700	**
Thallium	ug/L	P-703C	08/18/2022	ND	1.3000		*
Thallium	ug/L	P-703C	10/20/2022	ND	0.2600	0.1700	**
Thallium	ug/L	P-703C	04/19/2023	ND	0.2600	0.1700	**
Thallium	ug/L	P-703C	10/03/2023	ND	0.2600	0.1700	**
Vanadium	ug/L	P-703C	11/23/2021	ND	1.1000	0.8400	**
Vanadium	ug/L	P-703C	05/11/2022	ND	1.1000	0.8400	**
Vanadium	ug/L	P-703C	08/18/2022	ND	5.5000		*
Vanadium	ug/L	P-703C	10/20/2022	ND	1.1000	0.8400	**
Vanadium	ug/L	P-703C	04/19/2023	ND	1.1000	0.8400	**
Vanadium	ug/L	P-703C	10/03/2023	ND	1.1000	0.8400	**
Zinc	ug/L	P-703C	11/23/2021	ND	10.0000		
Zinc	ug/L	P-703C	05/11/2022	ND	10.0000		
Zinc	ug/L	P-703C	08/18/2022	ND	50.0000		*
Zinc	ug/L	P-703C	10/20/2022	ND	10.0000		
Zinc	ug/L	P-703C	04/19/2023	ND	6.4000	10.0000	**
Zinc	ug/L	P-703C	10/03/2023	ND	6.4000	10.0000	**

* - Outlier for that well and constituent.
** - ND value replaced with median RL.
*** - ND value replaced with manual RL.
ND = Not detected, Result = detection limit.

Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
Antimony	ug/L	P-213C	10/30/2024	ND	1.0000		1.8100
Arsenic	ug/L	P-213C	10/30/2024		2.6800	*	1.2800
Barium	ug/L	P-213C	10/30/2024		9.3200		722.0000
Beryllium	ug/L	P-213C	10/30/2024	ND	0.3300		0.2210
Cadmium	ug/L	P-213C	10/30/2024	ND	0.1000		0.0990
Chromium	ug/L	P-213C	10/30/2024		36.4000	*	11.2566
Cobalt	ug/L	P-213C	10/30/2024		1.2200	**	2.5000
Copper	ug/L	P-213C	10/30/2024	ND	1.8000		4.1100
Lead	ug/L	P-213C	10/30/2024	ND	0.2600		0.4740
Mercury	ug/L	P-213C	05/23/2024	ND	0.1100		*****
Nickel	ug/L	P-213C	10/30/2024	ND	2.1000		13.7152
Selenium	ug/L	P-213C	10/30/2024	ND	1.4000		0.9600
Silver	ug/L	P-213C	10/30/2024	ND	0.5000		1.3300
Thallium	ug/L	P-213C	10/30/2024	ND	0.5700		1.5600
Vanadium	ug/L	P-213C	10/30/2024	ND	1.1000		1.1700
Zinc	ug/L	P-213C	10/30/2024	ND	9.7000		10.0000
Antimony	ug/L	P-214C	09/26/2024	ND	5.0000		1.8100
Arsenic	ug/L	P-214C	09/26/2024	ND	2.6500		1.2800
Barium	ug/L	P-214C	09/26/2024		106.0000		722.0000
Beryllium	ug/L	P-214C	09/26/2024	ND	1.6500		0.2210
Cadmium	ug/L	P-214C	09/26/2024	ND	0.5000		0.0990
Chromium	ug/L	P-214C	09/26/2024	ND	6.0000		11.2566
Cobalt	ug/L	P-214C	09/26/2024	ND	0.8500		2.5000
Copper	ug/L	P-214C	09/26/2024	ND	9.0000		4.1100
Lead	ug/L	P-214C	09/26/2024	ND	0.2600		0.4740
Mercury	ug/L	P-214C	10/10/2016	ND	0.1420		*****
Nickel	ug/L	P-214C	09/26/2024	ND	10.5000		13.7152
Selenium	ug/L	P-214C	09/26/2024	ND	7.0000		0.9600
Silver	ug/L	P-214C	09/26/2024	ND	2.5000		1.3300
Thallium	ug/L	P-214C	09/26/2024	ND	0.5700		1.5600
Vanadium	ug/L	P-214C	09/26/2024	ND	5.5000		1.1700
Zinc	ug/L	P-214C	09/26/2024	ND	48.5000		10.0000
Antimony	ug/L	P-215C	09/26/2024	ND	5.0000		1.8100
Arsenic	ug/L	P-215C	09/26/2024	ND	2.6500		1.2800
Barium	ug/L	P-215C	09/26/2024		18.8000		722.0000
Beryllium	ug/L	P-215C	09/26/2024	ND	1.6500		0.2210
Cadmium	ug/L	P-215C	09/26/2024	ND	0.5000		0.0990
Chromium	ug/L	P-215C	09/26/2024	ND	6.0000		11.2566
Cobalt	ug/L	P-215C	09/26/2024	ND	0.8500		2.5000
Copper	ug/L	P-215C	09/26/2024	ND	9.0000		4.1100
Lead	ug/L	P-215C	09/26/2024	ND	0.2600		0.4740

* - Current value failed - awaiting verification.
** - Current value passed - previous exceedance not verified.
*** - Current value failed - exceedance verified.
**** - Current value passed - awaiting one more verification.
***** - Insufficient background data to compute prediction limit.
ND = Not Detected, Result = detection limit.

Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
Mercury	ug/L	P-215C	10/10/2016	ND	0.1420		*****
Nickel	ug/L	P-215C	09/26/2024	ND	10.5000		13.7152
Selenium	ug/L	P-215C	09/26/2024	ND	7.0000		0.9600
Silver	ug/L	P-215C	09/26/2024	ND	2.5000		1.3300
Thallium	ug/L	P-215C	09/26/2024	ND	0.5700		1.5600
Vanadium	ug/L	P-215C	09/26/2024	ND	5.5000		1.1700
Zinc	ug/L	P-215C	09/26/2024	ND	48.5000		10.0000
Antimony	ug/L	P-216C	09/25/2024	ND	1.0000		1.8100
Arsenic	ug/L	P-216C	09/25/2024	ND	0.5300		1.2800
Barium	ug/L	P-216C	09/25/2024		52.1000		722.0000
Beryllium	ug/L	P-216C	09/25/2024	ND	0.3300		0.2210
Cadmium	ug/L	P-216C	09/25/2024	ND	0.1000		0.0990
Chromium	ug/L	P-216C	09/25/2024	ND	1.2000		11.2566
Cobalt	ug/L	P-216C	09/25/2024		1.1100		2.5000
Copper	ug/L	P-216C	09/25/2024	ND	1.8000		4.1100
Lead	ug/L	P-216C	09/25/2024	ND	0.2600		0.4740
Mercury	ug/L	P-216C	10/04/2016	ND	0.1420		*****
Nickel	ug/L	P-216C	09/25/2024	ND	2.1000		13.7152
Selenium	ug/L	P-216C	09/25/2024	ND	1.4000		0.9600
Silver	ug/L	P-216C	09/25/2024	ND	0.5000		1.3300
Thallium	ug/L	P-216C	09/25/2024	ND	0.5700		1.5600
Vanadium	ug/L	P-216C	09/25/2024	ND	1.1000		1.1700
Zinc	ug/L	P-216C	09/25/2024	ND	9.7000		10.0000

* - Current value failed - awaiting verification.
** - Current value passed - previous exceedance not verified.
*** - Current value failed - exceedance verified.
**** - Current value passed - awaiting one more verification.
***** - Insufficient background data to compute prediction limit.
ND = Not Detected, Result = detection limit.

Table 3

Detection Frequencies in Upgradient and Downgradient Wells

Constituent	Detect	Upgradient N	Proportion	Detect	Downgradient N	Proportion
Antimony	12	42	0.286	14	153	0.092
Arsenic	9	41	0.220	9	154	0.058
Barium	43	43	1.000	147	153	0.961
Beryllium	1	42	0.024	2	153	0.013
Cadmium	1	43	0.023	6	154	0.039
Chromium	25	42	0.595	38	156	0.244
Cobalt	19	41	0.463	61	156	0.391
Copper	8	42	0.190	26	154	0.169
Lead	7	40	0.175	17	153	0.111
Mercury	0	0		1	18	0.056
Nickel	23	42	0.548	48	154	0.312
Selenium	0	39	0.000	2	153	0.013
Silver	5	42	0.119	7	153	0.046
Thallium	2	42	0.048	19	154	0.123
Vanadium	12	41	0.293	10	153	0.065
Zinc	1	38	0.026	49	153	0.320

N = Total number of measurements in all wells.
Detect = Total number of detections in all wells.
Proportion = Detect/N.

Table 4

Shapiro-Wilk Multiple Group Test of Normality

Constituent	Detect	N	Detect Freq	G raw	G log	G cbrt	G sqrt	G sqr	G cub	Crit Value	Dist Form	Model Type
Antimony	12	42	0.286	1.433	0.772					2.326	normal	nonpar
Arsenic	9	41	0.220	0.685	0.631					2.326	normal	nonpar
Barium	43	43	1.000	6.346	5.046					2.326	non-norm	nonpar
Beryllium	1	42	0.024									nonpar
Cadmium	1	43	0.023									nonpar
Chromium	25	42	0.595	3.199	0.207					2.326	lognor	lognor
Cobalt	19	41	0.463	3.110	1.256					2.326	lognor	nonpar
Copper	8	42	0.190	1.276	0.719					2.326	normal	nonpar
Lead	7	40	0.175	0.257	0.539					2.326	normal	nonpar
Mercury	0	0										too few
Nickel	23	42	0.548	5.011	0.032					2.326	lognor	lognor
Selenium	0	39	0.000									nonpar
Silver	5	42	0.119	2.776	2.310					2.326	lognor	nonpar
Thallium	2	42	0.048									nonpar
Vanadium	12	41	0.293	0.179	0.098					2.326	normal	nonpar
Zinc	1	38	0.026									nonpar

* - Distribution override for that constituent.
Fit to distribution is confirmed if G <= critical value.
Model type may not match distributional form when detection frequency < 50%.

Table 5

Summary Statistics and Prediction Limits

Constituent	Units	Detect	N	Mean	SD	alpha	Factor	Pred Limit	Type		Conf
Antimony	ug/L	12	42					1.8100	nonpar		0.99
Arsenic	ug/L	9	41					1.2800	nonpar		0.99
Barium	ug/L	43	43					722.0000	nonpar		0.99
Beryllium	ug/L	1	42					0.2210	nonpar	***	0.99
Cadmium	ug/L	1	43					0.0990	nonpar		0.99
Chromium	ug/L	25	42	0.9307	1.0944	0.0929	1.3618	11.2566	lognor		
Cobalt	ug/L	19	41					2.5000	nonpar		0.99
Copper	ug/L	8	42					4.1100	nonpar		0.99
Lead	ug/L	7	40					0.4740	nonpar		0.99
Mercury	ug/L	0	0							*	
Nickel	ug/L	23	42	0.9542	1.2222	0.0929	1.3618	13.7152	lognor		
Selenium	ug/L	0	39					0.9600	nonpar	***	0.99
Silver	ug/L	5	42					1.3300	nonpar		0.99
Thallium	ug/L	2	42					1.5600	nonpar		0.99
Vanadium	ug/L	12	41					1.1700	nonpar		0.99
Zinc	ug/L	1	38					10.0000	nonpar	***	0.99

Conf = confidence level for passing initial test or one of two verification resamples at all downgradient wells for a single constituent (nonparametric test only).
* - Insufficient Data.
** - Calculated limit raised to Manual Reporting Limit.
*** - Nonparametric limit based on ND value.
For transformed data, mean and SD in transformed units and prediction limit in original units.
All sample sizes and statistics are based on outlier free data.
For nonparametric limits, median reporting limits are substituted for extreme reporting limit values.

Table 6

Dixon's Test Outliers
1% Significance Level

Constituent	Units	Well	Date	Result	ND Qualifier	Date Range	N	Critical Value
Cobalt	ug/L	MW-318CR	04/02/2014	0.4060		01/21/2014-04/06/2021	16	0.6177
Cobalt	ug/L	MW-318CR	03/28/2016	0.4490		01/21/2014-04/06/2021	16	0.6177
Lead	ug/L	MW-318CR	03/28/2016	2.0600		01/21/2014-04/06/2021	16	0.5973
Selenium	ug/L	MW-318CR	09/08/2014	3.3400	< 3.3400	01/21/2014-04/06/2021	16	0.6177
Selenium	ug/L	MW-318CR	03/20/2015	3.3400	< 3.3400	01/21/2014-04/06/2021	16	0.6177
Selenium	ug/L	MW-318CR	09/08/2015	3.3400	< 3.3400	01/21/2014-04/06/2021	16	0.6177
Zinc	ug/L	MW-318CR	01/21/2014	2.6500		01/21/2014-04/06/2021	16	0.6177
Zinc	ug/L	MW-318CR	04/02/2014	2.0000	< 2.0000	01/21/2014-04/06/2021	16	0.6177
Zinc	ug/L	MW-318CR	03/28/2016	49.7000		01/21/2014-04/06/2021	16	0.5973
Arsenic	ug/L	P-604C	05/11/2022	3.0000	< 3.0000	12/18/2014-10/05/2023	21	0.5263
Lead	ug/L	P-604C	05/11/2022	0.9600	< 0.9600	12/18/2014-10/05/2023	21	0.5263
Vanadium	ug/L	P-604C	05/11/2022	4.4000	< 4.4000	12/18/2014-10/05/2023	21	0.5263
Zinc	ug/L	P-604C	05/11/2022	40.0000	< 40.0000	12/18/2014-10/05/2023	21	0.5263
Antimony	ug/L	P-703C	08/18/2022	3.4500	< 3.4500	11/23/2021-10/03/2023	6	0.6987
Arsenic	ug/L	P-703C	08/18/2022	3.7500	< 3.7500	11/23/2021-10/03/2023	6	0.6987
Beryllium	ug/L	P-703C	08/18/2022	1.3500	< 1.3500	11/23/2021-10/03/2023	6	0.6987
Chromium	ug/L	P-703C	08/18/2022	5.5000	< 5.5000	11/23/2021-10/03/2023	6	0.6987
Copper	ug/L	P-703C	08/18/2022	9.0000	< 9.0000	11/23/2021-10/03/2023	6	0.6987
Lead	ug/L	P-703C	08/18/2022	1.2000	< 1.2000	11/23/2021-10/03/2023	6	0.6987
Nickel	ug/L	P-703C	08/18/2022	9.5000	< 9.5000	11/23/2021-10/03/2023	6	0.6987
Selenium	ug/L	P-703C	08/18/2022	4.8000	< 4.8000	11/23/2021-10/03/2023	6	0.6987
Silver	ug/L	P-703C	08/18/2022	2.4500	< 2.4500	11/23/2021-10/03/2023	6	0.6987
Thallium	ug/L	P-703C	08/18/2022	1.3000	< 1.3000	11/23/2021-10/03/2023	6	0.6987
Vanadium	ug/L	P-703C	08/18/2022	5.5000	< 5.5000	11/23/2021-10/03/2023	6	0.6987
Zinc	ug/L	P-703C	08/18/2022	50.0000	< 50.0000	11/23/2021-10/03/2023	6	0.6987

N = Total number of independent measurements in background at each well.
Date Range = Dates of the first and last measurements included in background at each well.
Critical Value depends on the significance level and on N-1 when the two most extreme values are tested or N for the most extreme value.

Table 8

Historical Downgradient Data for Constituent-Well Combinations that Failed the Current Statistical Evaluation or are in Verification Resampling Mode

Constituent	Units	Well	Date		Result		Pred. Limit
Arsenic	ug/L	P-213C	10/23/2007	ND	1.0000		1.2800
Arsenic	ug/L	P-213C	01/14/2008		1.0100		1.2800
Arsenic	ug/L	P-213C	04/28/2008	ND	2.0000		1.2800
Arsenic	ug/L	P-213C	06/21/2008	ND	1.0000		1.2800
Arsenic	ug/L	P-213C	09/15/2008	ND	1.0000		1.2800
Arsenic	ug/L	P-213C	02/23/2009	ND	1.0000		1.2800
Arsenic	ug/L	P-213C	08/12/2009	ND	1.0000		1.2800
Arsenic	ug/L	P-213C	03/17/2010	ND	1.0000		1.2800
Arsenic	ug/L	P-213C	09/27/2010	ND	8.0000		1.2800
Arsenic	ug/L	P-213C	05/09/2011	ND	2.0000		1.2800
Arsenic	ug/L	P-213C	11/09/2011	ND	0.6000		1.2800
Arsenic	ug/L	P-213C	05/09/2012	ND	0.1850		1.2800
Arsenic	ug/L	P-213C	12/10/2012		2.1300	*	1.2800
Arsenic	ug/L	P-213C	04/29/2013	ND	2.7200		1.2800
Arsenic	ug/L	P-213C	10/24/2013	ND	0.3300		1.2800
Arsenic	ug/L	P-213C	04/03/2014		0.7680		1.2800
Arsenic	ug/L	P-213C	09/02/2014	ND	0.9450		1.2800
Arsenic	ug/L	P-213C	03/12/2015	ND	0.9450		1.2800
Arsenic	ug/L	P-213C	09/02/2015	ND	0.9450		1.2800
Arsenic	ug/L	P-213C	03/21/2016	ND	0.6720		1.2800
Arsenic	ug/L	P-213C	10/03/2016	ND	0.6720		1.2800
Arsenic	ug/L	P-213C	03/30/2017	ND	0.5050		1.2800
Arsenic	ug/L	P-213C	09/13/2017	ND	0.5050		1.2800
Arsenic	ug/L	P-213C	09/26/2018	ND	0.5700		1.2800
Arsenic	ug/L	P-213C	04/22/2019	ND	0.7500		1.2800
Arsenic	ug/L	P-213C	10/08/2019	ND	0.7500		1.2800
Arsenic	ug/L	P-213C	04/16/2020	ND	0.8800		1.2800
Arsenic	ug/L	P-213C	09/17/2020	ND	0.8800		1.2800
Arsenic	ug/L	P-213C	03/26/2021	ND	0.7500		1.2800
Arsenic	ug/L	P-213C	11/23/2021		2.3900	*	1.2800
Arsenic	ug/L	P-213C	02/09/2022		6.7300	*	1.2800
Arsenic	ug/L	P-213C	05/10/2022	ND	0.7500		1.2800
Arsenic	ug/L	P-213C	11/10/2022		9.8300	*	1.2800
Arsenic	ug/L	P-213C	04/19/2023	ND	0.5300		1.2800
Arsenic	ug/L	P-213C	10/03/2023	ND	0.5300		1.2800
Arsenic	ug/L	P-213C	05/23/2024	ND	0.5300		1.2800
Arsenic	ug/L	P-213C	10/30/2024		2.6800	*	1.2800
Chromium	ug/L	P-213C	10/23/2007	ND	20.0000		11.2566
Chromium	ug/L	P-213C	01/14/2008	ND	20.0000		11.2566
Chromium	ug/L	P-213C	04/28/2008		2.6800		11.2566

* - Significantly increased over background.
** - Detect at limit for 100% NDs in background (NPPL only).
*** - Manual exclusion.
ND = Not Detected, Result = detection limit.

Table 8

Historical Downgradient Data for Constituent-Well Combinations that Failed the Current Statistical Evaluation or are in Verification Resampling Mode

Constituent	Units	Well	Date		Result		Pred. Limit
Chromium	ug/L	P-213C	06/21/2008	ND	20.0000		11.2566
Chromium	ug/L	P-213C	09/15/2008	ND	20.0000		11.2566
Chromium	ug/L	P-213C	02/23/2009	ND	20.0000		11.2566
Chromium	ug/L	P-213C	08/12/2009	ND	20.0000		11.2566
Chromium	ug/L	P-213C	03/17/2010	ND	20.0000		11.2566
Chromium	ug/L	P-213C	09/27/2010	ND	20.0000		11.2566
Chromium	ug/L	P-213C	05/09/2011	ND	20.0000		11.2566
Chromium	ug/L	P-213C	11/09/2011	ND	1.8100		11.2566
Chromium	ug/L	P-213C	05/09/2012		114.0000	*	11.2566
Chromium	ug/L	P-213C	12/10/2012		39.4000	*	11.2566
Chromium	ug/L	P-213C	04/29/2013		80.6000	*	11.2566
Chromium	ug/L	P-213C	10/24/2013		2.1100		11.2566
Chromium	ug/L	P-213C	04/03/2014		7.8300		11.2566
Chromium	ug/L	P-213C	09/02/2014	ND	1.2400		11.2566
Chromium	ug/L	P-213C	03/12/2015	ND	1.2400		11.2566
Chromium	ug/L	P-213C	09/02/2015	ND	1.2400		11.2566
Chromium	ug/L	P-213C	03/21/2016	ND	0.3550		11.2566
Chromium	ug/L	P-213C	10/03/2016		1.3900		11.2566
Chromium	ug/L	P-213C	03/30/2017	ND	0.7290		11.2566
Chromium	ug/L	P-213C	09/13/2017	ND	0.7290		11.2566
Chromium	ug/L	P-213C	09/26/2018	ND	0.7600		11.2566
Chromium	ug/L	P-213C	04/22/2019	ND	0.9800		11.2566
Chromium	ug/L	P-213C	10/08/2019	ND	0.9800		11.2566
Chromium	ug/L	P-213C	04/16/2020	ND	1.1000		11.2566
Chromium	ug/L	P-213C	09/17/2020	ND	1.1000		11.2566
Chromium	ug/L	P-213C	03/26/2021	ND	1.1000		11.2566
Chromium	ug/L	P-213C	11/23/2021		31.1000	*	11.2566
Chromium	ug/L	P-213C	02/09/2022		90.1000	*	11.2566
Chromium	ug/L	P-213C	05/10/2022	ND	1.1000		11.2566
Chromium	ug/L	P-213C	11/10/2022		93.7000	*	11.2566
Chromium	ug/L	P-213C	04/19/2023	ND	1.1000		11.2566
Chromium	ug/L	P-213C	10/03/2023		8.5100		11.2566
Chromium	ug/L	P-213C	05/23/2024	ND	1.2000		11.2566
Chromium	ug/L	P-213C	10/30/2024		36.4000	*	11.2566
Cobalt	ug/L	P-213C	10/23/2007	ND	20.0000		2.5000
Cobalt	ug/L	P-213C	01/14/2008	ND	20.0000		2.5000
Cobalt	ug/L	P-213C	04/28/2008	ND	20.0000		2.5000
Cobalt	ug/L	P-213C	06/21/2008	ND	20.0000		2.5000
Cobalt	ug/L	P-213C	09/15/2008	ND	20.0000		2.5000
Cobalt	ug/L	P-213C	02/23/2009	ND	20.0000		2.5000

* - Significantly increased over background.
** - Detect at limit for 100% NDs in background (NPPL only).
*** - Manual exclusion.
ND = Not Detected, Result = detection limit.

Table 8

Historical Downgradient Data for Constituent-Well Combinations that Failed the Current Statistical Evaluation or are in Verification Resampling Mode

Constituent	Units	Well	Date		Result		Pred. Limit
Cobalt	ug/L	P-213C	08/12/2009	ND	20.0000		2.5000
Cobalt	ug/L	P-213C	03/17/2010	ND	20.0000		2.5000
Cobalt	ug/L	P-213C	09/27/2010	ND	20.0000		2.5000
Cobalt	ug/L	P-213C	05/09/2011	ND	20.0000		2.5000
Cobalt	ug/L	P-213C	11/09/2011	ND	1.5500		2.5000
Cobalt	ug/L	P-213C	05/09/2012		9.7200	*	2.5000
Cobalt	ug/L	P-213C	12/10/2012		16.1000	*	2.5000
Cobalt	ug/L	P-213C	04/29/2013		17.6000	*	2.5000
Cobalt	ug/L	P-213C	10/24/2013		3.1300	*	2.5000
Cobalt	ug/L	P-213C	04/03/2014		7.3300	*	2.5000
Cobalt	ug/L	P-213C	09/02/2014		3.7400	*	2.5000
Cobalt	ug/L	P-213C	03/12/2015		3.3700	*	2.5000
Cobalt	ug/L	P-213C	09/02/2015		3.9300	*	2.5000
Cobalt	ug/L	P-213C	03/21/2016		3.5100	*	2.5000
Cobalt	ug/L	P-213C	10/03/2016		2.0600		2.5000
Cobalt	ug/L	P-213C	03/30/2017		3.4000	*	2.5000
Cobalt	ug/L	P-213C	09/13/2017		2.7700	*	2.5000
Cobalt	ug/L	P-213C	09/26/2018		3.0800	*	2.5000
Cobalt	ug/L	P-213C	04/22/2019		2.3100		2.5000
Cobalt	ug/L	P-213C	10/08/2019		3.5500	*	2.5000
Cobalt	ug/L	P-213C	11/25/2019		3.6500	*	2.5000
Cobalt	ug/L	P-213C	04/16/2020		3.2100	*	2.5000
Cobalt	ug/L	P-213C	08/18/2020		2.7100	*	2.5000
Cobalt	ug/L	P-213C	09/17/2020		2.5500	*	2.5000
Cobalt	ug/L	P-213C	03/26/2021		3.2900	*	2.5000
Cobalt	ug/L	P-213C	11/23/2021		1.8400		2.5000
Cobalt	ug/L	P-213C	02/09/2022		0.8160		2.5000
Cobalt	ug/L	P-213C	05/10/2022		2.2700		2.5000
Cobalt	ug/L	P-213C	11/10/2022	ND	0.1900		2.5000
Cobalt	ug/L	P-213C	04/19/2023		3.2200	*	2.5000
Cobalt	ug/L	P-213C	10/03/2023		2.4400		2.5000
Cobalt	ug/L	P-213C	05/23/2024		3.2500	*	2.5000
Cobalt	ug/L	P-213C	10/30/2024		1.2200		2.5000

* - Significantly increased over background.
** - Detect at limit for 100% NDs in background (NPPL only).
*** - Manual exclusion.
ND = Not Detected, Result = detection limit.

Table 9

Analytical Data Summary for Antimony (ug/L)

Dates	P-213C	P-214C	P-215C	P-216C
5/8/2012 - 5/11/2012	2.930	<.584	<.584	<.584
12/3/2012 - 12/11/2012	<.584	<.584	3.780	<.584
4/24/2013 - 5/6/2013	<.271	<.271	<.271	<.271
10/14/2013 - 10/24/2013	<.400	1.160	2.000	4.140
3/18/2014 - 4/3/2014	<.400	.895	.877	<.400
8/22/2014 - 9/8/2014	.236	<.161	<.161	<.161
2/24/2015 - 3/20/2015	<.161	<.161	<.161	.307
8/20/2015 - 9/9/2015	<.161	.170	.268	.802
3/7/2016 - 3/29/2016	<.237 *	<.237	<.237	<.237 *
9/12/2016 - 10/11/2016	.461	<.237	<.237	<.237
3/17/2017 - 4/8/2017	<.185	<.185	<.185	<.185
9/6/2017 - 9/29/2017	<.185	<.185	<.185	<.185
3/12/2018 - 4/11/2018		<.420 *	<.420	<.420
8/29/2018 - 9/27/2018	<.420	.523	<.420	<.420
3/26/2019 - 4/25/2019	<.530	<.530	<.530	<.530
9/17/2019 - 10/11/2019	<.530	<.530	<.530	<.530
3/23/2020 - 4/22/2020	<.580	<.580	<.580	<.580
8/18/2020 - 9/17/2020	<.510			
9/17/2020 - 10/8/2020	<.510	<.510	<.510	<.510
3/11/2021 - 4/6/2021	<1.100	<1.100	<1.100	<1.100
10/26/2021 - 11/24/2021	<1.100	<1.100	<1.100	<1.100
4/11/2022 - 5/11/2022	<.690	<.690	<.690	<.690
10/11/2022 - 11/10/2022	<.690	<.690	<.690	<.690
3/20/2023 - 4/19/2023	<1.000			
4/19/2023 - 4/25/2023	<1.000	<1.000	<1.000	<1.000
9/7/2023 - 10/5/2023	<1.000	<1.000	<1.000	<1.000
12/5/2023 - 12/6/2023		<1.000	<1.000	<1.000
4/23/2024 - 5/23/2024	<1.000	<1.000	<1.000	<1.000
5/23/2024 - 5/30/2024	<1.000	<1.000		
7/26/2024 - 8/9/2024		<1.000	<1.000	<1.000
9/25/2024 - 10/25/2024		<5.000	<5.000	<1.000
10/25/2024 - 11/1/2024	<1.000			

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Antimony, dissolved (ug/L)

Dates	P-213C	P-214C	P-215C	P-216C
5/8/2012 - 5/11/2012	<.584	<.584	<.584	<.584
12/3/2012 - 12/11/2012	<.584	<.584	<.584	<.584
4/24/2013 - 5/6/2013	<.271	<.271	<.271	<.271
10/14/2013 - 10/24/2013	<.400	<.400	<.400	<.400
3/18/2014 - 4/3/2014	<.400	<.400	<.400	<.400

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Arsenic (ug/L)

Dates	P-213C	P-214C	P-215C	P-216C
5/8/2012 - 5/11/2012	<.185	<.185	<.185	<.185
12/3/2012 - 12/11/2012	2.130	<.185	<.185	<.185
4/24/2013 - 5/6/2013	<2.720	<2.720	<2.720	<2.720
10/14/2013 - 10/24/2013	<.330	<.330	.393	.369
3/18/2014 - 4/3/2014	.768	<.330	<.330	<.330
8/22/2014 - 9/8/2014	<.945	<.945	<.945	<.945
2/24/2015 - 3/20/2015	<.945	<.945	<.945	<.945
8/20/2015 - 9/9/2015	<.945	<.945	<.945	<.945
3/7/2016 - 3/29/2016	<.672 *	<.672	<.672	<.672 *
9/12/2016 - 10/11/2016	<.672	<.672	<.672	<.672
3/17/2017 - 4/8/2017	<.505	<.505	<.505	<.505
9/6/2017 - 9/29/2017	<.505	<.505	<.505	<.505
3/12/2018 - 4/11/2018		<.570 *	<.570	<.570
8/29/2018 - 9/27/2018	<.570	<.570	<.570	<.570
3/26/2019 - 4/25/2019	<.750	<.750	<.750	<.750
9/17/2019 - 10/11/2019	<.750	<.750	<.750	<.750
3/23/2020 - 4/22/2020	<.880	<.880	<.880	<.880
8/18/2020 - 9/17/2020	<.880			
9/17/2020 - 10/8/2020	<.880	<.880	<.880	<.880
3/11/2021 - 4/6/2021	<.750	<.750	<.750	<.750
10/26/2021 - 11/24/2021	2.390	<.750	<.750	<.750
2/8/2022 - 2/9/2022	6.730			
4/11/2022 - 5/11/2022	<.750	<.750	<.750	<.750
10/11/2022 - 11/10/2022	9.830	<.750	<.750	<.750
3/20/2023 - 4/19/2023	<.530			
4/19/2023 - 4/25/2023	<.530	<.530	<.530	<.530
9/7/2023 - 10/5/2023	<.530	<.530	<.530	<.530
12/5/2023 - 12/6/2023		<.530	<.530	<.530
4/23/2024 - 5/23/2024	<.530	<.530	<.530	<.530
5/23/2024 - 5/30/2024	<.530	<.530		
7/26/2024 - 8/9/2024		<.530	<.530	<.530
9/25/2024 - 10/25/2024		<2.650	<2.650	<.530
10/25/2024 - 11/1/2024	2.680			

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Arsenic, dissolved (ug/L)

Dates	P-213C	P-214C	P-215C	P-216C
5/8/2012 - 5/11/2012	<.185	<.185	<.185	<.185
12/3/2012 - 12/11/2012	<.185	<.185	<.185	<.185
4/24/2013 - 5/6/2013	<2.720	<2.720	<2.720	<2.720
10/14/2013 - 10/24/2013	<.330	<.330	<.330	<.330
3/18/2014 - 4/3/2014	<.330	<.330	<.330	<.330

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Barium (ug/L)

Dates	P-213C	P-214C	P-215C	P-216C
5/8/2012 - 5/11/2012	28.10	14.60	10.50	10.70
12/3/2012 - 12/11/2012	329.00	14.60	10.80	8.98
4/24/2013 - 5/6/2013	53.20	13.60	9.44	12.10
10/14/2013 - 10/24/2013	15.50	15.70	11.00	11.00
3/18/2014 - 4/3/2014	147.00	15.90	10.40	11.00
8/22/2014 - 9/8/2014	10.10	12.40	10.20	11.00
2/24/2015 - 3/20/2015	10.00	12.70	10.80	11.20
8/20/2015 - 9/9/2015	11.00	12.10	11.60	13.50
3/7/2016 - 3/29/2016	9.54 *	12.30	10.20	10.90 *
9/12/2016 - 10/11/2016	9.43	18.30	18.20	10.80
3/17/2017 - 4/8/2017	11.10	11.50	10.70	12.10
9/6/2017 - 9/29/2017	10.10	11.00	10.00	10.90
3/12/2018 - 4/11/2018		12.00 *	10.60	11.80
8/29/2018 - 9/27/2018	9.00	13.10	9.41	6.01
3/26/2019 - 4/25/2019	9.49	11.60	5.64	10.10
9/17/2019 - 10/11/2019	9.90	11.80	10.20	6.52
3/23/2020 - 4/22/2020	10.20	10.90	11.00	10.50
8/18/2020 - 9/17/2020	9.84			
9/17/2020 - 10/8/2020	9.84	12.30	9.04	10.90
3/11/2021 - 4/6/2021	11.00	13.00	11.00	11.90
10/26/2021 - 11/24/2021	9.68	12.20	10.50	7.82
4/11/2022 - 5/11/2022	9.80	10.60	9.01	6.11
10/11/2022 - 11/10/2022	7.11	13.50	3.34	9.83
3/20/2023 - 4/19/2023	9.98			
4/19/2023 - 4/25/2023	9.98	125.00	135.00	42.50
9/7/2023 - 10/5/2023	10.50	193.00	59.30	33.00
12/5/2023 - 12/6/2023		122.00	108.00	14.30
4/23/2024 - 5/23/2024	8.72	130.00	72.30	26.80
5/23/2024 - 5/30/2024	8.72	130.00		
7/26/2024 - 8/9/2024		121.00	25.70	24.80
9/25/2024 - 10/25/2024		106.00	18.80	52.10
10/25/2024 - 11/1/2024	9.32			

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Barium, dissolved (ug/L)

Dates	P-213C	P-214C	P-215C	P-216C
5/8/2012 - 5/11/2012	9.07	14.9	9.17	10.1
12/3/2012 - 12/11/2012	11.50	26.5	8.85	10.1
4/24/2013 - 5/6/2013	11.40	12.9	9.37	10.3
10/14/2013 - 10/24/2013	12.50	15.3	10.10	10.3
3/18/2014 - 4/3/2014	11.50	16.2	10.30	11.3

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Beryllium (ug/L)

Dates	P-213C	P-214C	P-215C	P-216C
5/8/2012 - 5/11/2012	<.169	<.169	<.169	<.169
12/3/2012 - 12/11/2012	.303	<.169	<.169	<.169
4/24/2013 - 5/6/2013	<.348	<.348	<.348	<.348
10/14/2013 - 10/24/2013	<.080	<.080	<.080	<.080
3/18/2014 - 4/3/2014	.175	<.080	<.080	<.080
8/22/2014 - 9/8/2014	<.039	<.039	<.039	<.039
2/24/2015 - 3/20/2015	<.039	<.039	<.039	<.039
8/20/2015 - 9/9/2015	<.039	<.039	<.039	<.039
3/7/2016 - 3/29/2016	<.221 *	<.221	<.221	<.221 *
9/12/2016 - 10/11/2016	<.221	<.221	<.221	<.221
3/17/2017 - 4/8/2017	<.125	<.125	<.125	<.125
9/6/2017 - 9/29/2017	<.125	<.125	<.125	<.125
3/12/2018 - 4/11/2018		<.190 *	<.190	<.190
8/29/2018 - 9/27/2018	<.190	<.190	<.190	<.190
3/26/2019 - 4/25/2019	<.270	<.270	<.270	<.270
9/17/2019 - 10/11/2019	<.270	<.270	<.270	<.270
3/23/2020 - 4/22/2020	<.270	<.270	<.270	<.270
8/18/2020 - 9/17/2020	<.270			
9/17/2020 - 10/8/2020	<.270	<.270	<.270	<.270
3/11/2021 - 4/6/2021	<.270	<.270	<.270	<.270
10/26/2021 - 11/24/2021	<.270	<.270	<.270	<.270
4/11/2022 - 5/11/2022	<.270	<.270	<.270	<.270
10/11/2022 - 11/10/2022	<.270	<.270	<.270	<.270
3/20/2023 - 4/19/2023	<.330			
4/19/2023 - 4/25/2023	<.330	<.330	<.330	<.330
9/7/2023 - 10/5/2023	<.330	<.330	<.330	<.330
12/5/2023 - 12/6/2023		<.330	<.330	<.330
4/23/2024 - 5/23/2024	<.330	<.330	<.330	<.330
5/23/2024 - 5/30/2024	<.330	<.330		
7/26/2024 - 8/9/2024		<.330	<.330	<.330
9/25/2024 - 10/25/2024		<1.650	<1.650	<.330
10/25/2024 - 11/1/2024	<.330			

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Beryllium, dissolved (ug/L)

Dates	P-213C	P-214C	P-215C	P-216C
5/8/2012 - 5/11/2012	<.169	<.169	<.169	<.169
12/3/2012 - 12/11/2012	<.169	<.169	<.169	<.169
4/24/2013 - 5/6/2013	<.348	<.348	<.348	<.348
10/14/2013 - 10/24/2013	<.080	<.080	<.080	<.080
3/18/2014 - 4/3/2014	<.080	<.080	<.080	<.080

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Cadmium (ug/L)

Dates	P-213C	P-214C	P-215C	P-216C
5/8/2012 - 5/11/2012	<.1950	<.1950	<.1950	<.1950
12/3/2012 - 12/11/2012	.2260	<.1950	<.1950	<.1950
4/24/2013 - 5/6/2013	<.5300	<.5300	<.5300	<.5300
10/14/2013 - 10/24/2013	<.1000	<.1000	<.1000	<.1000
3/18/2014 - 4/3/2014	.1120	<.1000	<.1000	<.1000
8/22/2014 - 9/8/2014	<.1120	<.1120	<.1120	<.1120
2/24/2015 - 3/20/2015	<.1120	<.1120	<.1120	<.1120
8/20/2015 - 9/9/2015	<.1120	<.1120	<.1120	<.1120
3/7/2016 - 3/29/2016	<.0351 *	<.0351	<.0351	<.0351 *
9/12/2016 - 10/11/2016	.0400	<.0351	<.0351	<.0351
3/17/2017 - 4/8/2017	<.0441	<.0441	<.0441	<.0441
9/6/2017 - 9/29/2017	<.0441	<.0441	<.0441	<.0441
3/12/2018 - 4/11/2018		<.0600 *	<.0600	<.0600
8/29/2018 - 9/27/2018	<.0600	<.0600	<.0600	<.0600
3/26/2019 - 4/25/2019	<.0770	<.0770	<.0770	<.0770
9/17/2019 - 10/11/2019	<.0390	<.0390	<.0390	<.0390
3/23/2020 - 4/22/2020	<.0390	<.0390	<.0390	<.0390
8/18/2020 - 9/17/2020	<.0490			
9/17/2020 - 10/8/2020	<.0490	<.0490	<.0490	<.0490
3/11/2021 - 4/6/2021	<.0510	.1230	<.0510	<.0510
6/17/2021 - 6/22/2021		<.0510		
10/26/2021 - 11/24/2021	<.0510	<.0510	<.0510	<.0510
4/11/2022 - 5/11/2022	<.0550	<.0550	<.0550	<.0550
10/11/2022 - 11/10/2022	<.0550	<.0550	<.0550	<.0550
3/20/2023 - 4/19/2023	<.1000			
4/19/2023 - 4/25/2023	<.1000	<.1000	<.1000	<.1000
9/7/2023 - 10/5/2023	<.1000	<.1000	<.1000	<.1000
12/5/2023 - 12/6/2023		<.1000	<.1000	<.1000
4/23/2024 - 5/23/2024	<.1000	<.1000	<.1000	<.1000
5/23/2024 - 5/30/2024	<.1000	<.1000		
7/26/2024 - 8/9/2024		<.1000	<.1000	<.1000
9/25/2024 - 10/25/2024		<.5000	<.5000	<.1000
10/25/2024 - 11/1/2024	<.1000			

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Cadmium, dissolved (ug/L)

Dates	P-213C	P-214C	P-215C	P-216C
5/8/2012 - 5/11/2012	<.195	<.195	<.195	<.195
12/3/2012 - 12/11/2012	<.195	<.195	<.195	<.195
4/24/2013 - 5/6/2013	<.530	<.530	<.530	<.530
10/14/2013 - 10/24/2013	<.100	<.100	<.100	<.100
3/18/2014 - 4/3/2014	<.100	<.100	<.100	<.100

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Chromium (ug/L)

Dates	P-213C	P-214C	P-215C	P-216C
5/8/2012 - 5/11/2012	114.000	<1.810	<1.810	28.400
12/3/2012 - 12/11/2012	39.400	9.300	7.720	5.960
4/24/2013 - 5/6/2013	80.600	110.000	6.020	70.700
10/14/2013 - 10/24/2013	2.110	4.580	13.700	32.000
3/18/2014 - 4/3/2014	7.830	19.500	5.940	5.590
8/22/2014 - 9/8/2014	<1.240	<1.240	<1.240	<1.240
2/24/2015 - 3/20/2015	<1.240	<1.240	<1.240	<1.240
8/20/2015 - 9/9/2015	<1.240	<1.240	<1.240	<1.240
3/7/2016 - 3/29/2016	<.355 *	.447	<.355	<.355 *
9/12/2016 - 10/11/2016	1.390	.533	<.355	<.355
3/17/2017 - 4/8/2017	<.729	1.850	<.729	<.729
9/6/2017 - 9/29/2017	<.729	2.240	<.729	<.729
3/12/2018 - 4/11/2018		<.760 *	<.760	<.760
8/29/2018 - 9/27/2018	<.760	<.760	<.760	<.760
3/26/2019 - 4/25/2019	<.980	24.500	<.980	<.980
6/19/2019 - 6/25/2019		<.980		
9/17/2019 - 10/11/2019	<.980	<.980	<.980	<.980
3/23/2020 - 4/22/2020	<1.100	<1.100	<1.100	<1.100
8/18/2020 - 9/17/2020	<1.100			
9/17/2020 - 10/8/2020	<1.100	<1.100	<1.100	<1.100
3/11/2021 - 4/6/2021	<1.100	<1.100	<1.100	<1.100
10/26/2021 - 11/24/2021	31.100	<1.100	<1.100	<1.100
2/8/2022 - 2/9/2022	90.100			
4/11/2022 - 5/11/2022	<1.100	<1.100	<1.100	<1.100
10/11/2022 - 11/10/2022	93.700	<1.100	<1.100	<1.100
3/20/2023 - 4/19/2023	<1.100			
4/19/2023 - 4/25/2023	<1.100	<1.100	10.000	18.900
8/1/2023 - 8/8/2023				24.500
8/8/2023 - 9/7/2023				24.500
9/7/2023 - 10/5/2023	8.510	<1.100	5.120	16.700
12/5/2023 - 12/6/2023		<1.100	<1.100	<1.100
4/23/2024 - 5/23/2024	<1.200	<1.200	<1.200	<1.200
5/23/2024 - 5/30/2024	<1.200	<1.200		
7/26/2024 - 8/9/2024		<1.200	<1.200	<1.200
9/25/2024 - 10/25/2024		<6.000	<6.000	<1.200
10/25/2024 - 11/1/2024	36.400			

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Chromium, dissolved (ug/L)

Dates	P-213C	P-214C	P-215C	P-216C
5/8/2012 - 5/11/2012	<1.810	<1.810	<1.81	5.90
12/3/2012 - 12/11/2012	<1.810	2.930	<1.81	<1.81
4/24/2013 - 5/6/2013	<2.090	2.650	<2.09	<2.09
10/14/2013 - 10/24/2013	.757	.585	<.50	.56
3/18/2014 - 4/3/2014	<.500	1.350	<.50	1.02

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Cobalt (ug/L)

Dates	P-213C	P-214C	P-215C	P-216C
5/8/2012 - 5/11/2012	9.720	<1.5500	<1.550	<1.5500
12/3/2012 - 12/11/2012	16.100	<1.5500	<1.550	<1.5500
4/24/2013 - 5/6/2013	17.600	2.1100	.646	3.9200
10/14/2013 - 10/24/2013	3.130	.3150	1.760	1.3500
3/18/2014 - 4/3/2014	7.330	.4440	.593	.4170
8/22/2014 - 9/8/2014	3.740	<.0528	.086	.0720
2/24/2015 - 3/20/2015	3.370	<.0528	.147	.1640
8/20/2015 - 9/9/2015	3.930	<.0528	.165	<.0528
3/7/2016 - 3/29/2016	3.510 *	<.0274	.059	.1130 *
9/12/2016 - 10/11/2016	2.060	.2620	.042	.0330
3/17/2017 - 4/8/2017	3.400	.0690	.116	<.0453
9/6/2017 - 9/29/2017	2.770	.0670	.124	.1010
3/12/2018 - 4/11/2018		1.8405 *	.140	.0860
8/29/2018 - 9/27/2018	3.080	<.0610	.098	<.0610
3/26/2019 - 4/25/2019	2.310	<.0910	<.091	<.0910
9/17/2019 - 10/11/2019	3.550	<.0910	<.091	<.0910
11/25/2019	3.650			
3/23/2020 - 4/22/2020	3.210	.8470	<.091	<.0910
8/5/2020 - 8/18/2020	2.710			
8/18/2020 - 9/17/2020	2.630 *			
9/17/2020 - 10/8/2020	2.550	<.0910	<.091	<.0910
3/11/2021 - 4/6/2021	3.290	<.0910	<.091	<.0910
10/26/2021 - 11/24/2021	1.840	<.1900	<.190	<.1900
2/8/2022 - 2/9/2022	.816			
4/11/2022 - 5/11/2022	2.270	<.1900	<.190	<.1900
10/11/2022 - 11/10/2022	<.190	<.1900	<.190	<.1900
3/20/2023 - 4/19/2023	3.220			
4/19/2023 - 4/25/2023	3.220	<.1700	<.170	<.1700
9/7/2023 - 10/5/2023	2.440	<.1700	.737	.5700
12/5/2023 - 12/6/2023		<.1700	<.170	<.1700
4/23/2024 - 5/23/2024	3.250	<.1700	<.170	<.1700
5/23/2024 - 5/30/2024	3.250	<.1700		
7/26/2024 - 8/9/2024		<.1700	.914	.8570
9/25/2024 - 10/25/2024		<.8500	<.850	1.1100
10/25/2024 - 11/1/2024	1.220			

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Cobalt, dissolved (ug/L)

Dates	P-213C	P-214C	P-215C	P-216C
5/8/2012 - 5/11/2012	2.66	<1.550	<1.550	<1.550
12/3/2012 - 12/11/2012	3.54	<1.550	<1.550	<1.550
4/24/2013 - 5/6/2013	5.36	<.277	.326	<.277
10/14/2013 - 10/24/2013	2.69	.192	.317	.367
3/18/2014 - 4/3/2014	3.49	.298	.258	.367

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Copper (ug/L)

Dates	P-213C	P-214C	P-215C	P-216C
5/8/2012 - 5/11/2012	8.760	2.400	3.040	3.520
12/3/2012 - 12/11/2012	26.100	7.870	<1.510	5.640
4/24/2013 - 5/6/2013	19.300	1.610	5.630	1.250
10/14/2013 - 10/24/2013	1.650	13.600	5.790	4.940
3/18/2014 - 4/3/2014	6.080	1.040	1.050	<.560
8/22/2014 - 9/8/2014	<.485	<.485	<.485	<.485
2/24/2015 - 3/20/2015	<.485	<.485	<.485	<.485
8/20/2015 - 9/9/2015	.620	<.485	<.485	<.485
3/7/2016 - 3/29/2016	<1.220 *	<1.220	<1.220	<1.220 *
9/12/2016 - 10/11/2016	<1.220	<1.220	<1.220	<1.220
3/17/2017 - 4/8/2017	<2.190	<2.190	<2.190	<2.190
9/6/2017 - 9/29/2017	<2.190	<2.190	<2.190	<2.190
3/12/2018 - 4/11/2018		<1.600 *	<1.600	<1.600
8/29/2018 - 9/27/2018	<1.600	<1.600	<1.600	<1.600
3/26/2019 - 4/25/2019	<2.000	<2.000	<2.000	<2.000
9/17/2019 - 10/11/2019	<2.000	<2.000	<2.000	<2.000
3/23/2020 - 4/22/2020	<3.200	<3.200	<3.200	<3.200
8/18/2020 - 9/17/2020	<1.500			
9/17/2020 - 10/8/2020	<1.500	<1.500	<1.500	<1.500
3/11/2021 - 4/6/2021	<1.400	<1.400	<1.400	<1.400
10/26/2021 - 11/24/2021	<1.400	<1.400	<1.400	<1.400
4/11/2022 - 5/11/2022	<1.800	<1.800	<1.800	<1.800
10/11/2022 - 11/10/2022	<1.800	<1.800	<1.800	<1.800
3/20/2023 - 4/19/2023	<1.800			
4/19/2023 - 4/25/2023	<1.800	<1.800	5.800	<1.800
8/1/2023 - 8/8/2023			<1.800	
8/8/2023 - 9/7/2023			<1.800	
9/7/2023 - 10/5/2023	<1.800	<1.800	6.220	5.960
12/5/2023 - 12/6/2023		<1.800	<1.800	<1.800
4/23/2024 - 5/23/2024	<1.800	<1.800	<1.800	<1.800
5/23/2024 - 5/30/2024	<1.800	<1.800		
7/26/2024 - 8/9/2024		<1.800	<1.800	<1.800
9/25/2024 - 10/25/2024		<9.000	<9.000	<1.800
10/25/2024 - 11/1/2024	<1.800			

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Copper, dissolved (ug/L)

Dates	P-213C	P-214C	P-215C	P-216C
5/8/2012 - 5/11/2012	<1.51	<1.510	<1.51	<1.510
12/3/2012 - 12/11/2012	<1.51	<1.510	<1.51	<1.510
4/24/2013 - 5/6/2013	<.85	<.850	<.85	<.850
10/14/2013 - 10/24/2013	1.87	.692	1.60	<.560
3/18/2014 - 4/3/2014	<.56	.983	<.56	.565

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Lead (ug/L)

Dates	P-213C	P-214C	P-215C	P-216C
5/8/2012 - 5/11/2012	3.320	<.8210	<.8210	<.8210
12/3/2012 - 12/11/2012	9.480	<.8210	.9410	<.8210
4/24/2013 - 5/6/2013	8.680	<1.0400	<1.0400	2.2700
10/14/2013 - 10/24/2013	.207	.3550	.7710	1.2700
3/18/2014 - 4/3/2014	1.680	<.1800	.2220	<.1800
8/22/2014 - 9/8/2014	.184	<.0967	.1600	<.0967
2/24/2015 - 3/20/2015	.120	<.0967	<.0967	<.0967
8/20/2015 - 9/9/2015	.111	<.0967	<.0967	.4690
3/7/2016 - 3/29/2016	<.211 *	<.2110	<.2110	<.2110 *
9/12/2016 - 10/11/2016	<.211	<.2110	<.2110	<.2110
3/17/2017 - 4/8/2017	<.324	<.3240	<.3240	<.3240
9/6/2017 - 9/29/2017	<.324	<.3240	<.3240	<.3240
3/12/2018 - 4/11/2018		<.2500 *	<.2500	<.2500
8/29/2018 - 9/27/2018	<.250	<.2500	<.2500	<.2500
3/26/2019 - 4/25/2019	<.270	<.2700	<.2700	<.2700
9/17/2019 - 10/11/2019	<.270	<.2700	<.2700	<.2700
3/23/2020 - 4/22/2020	<.270	<.2700	<.2700	<.2700
8/18/2020 - 9/17/2020	<.110			
9/17/2020 - 10/8/2020	<.110	<.1100	<.1100	<.1100
3/11/2021 - 4/6/2021	<.210	<.2100	<.2100	<.2100
10/26/2021 - 11/24/2021	<.210	<.2100	<.2100	<.2100
4/11/2022 - 5/11/2022	<.240	<.2400	<.2400	<.2400
10/11/2022 - 11/10/2022	<.240	<.2400	<.2400	<.2400
3/20/2023 - 4/19/2023	<.240			
4/19/2023 - 4/25/2023	<.240	<.2400	<.2400	<.2400
9/7/2023 - 10/5/2023	<.240	.8350	<.2400	<.2400
12/5/2023 - 12/6/2023		<.2400	<.2400	<.2400
4/23/2024 - 5/23/2024	<.260	<.2600	<.2600	<.2600
5/23/2024 - 5/30/2024	<.260	<.2600		
7/26/2024 - 8/9/2024		<.2600	<.2600	<.2600
9/25/2024 - 10/25/2024		<.2600	<.2600	<.2600
10/25/2024 - 11/1/2024	<.260			

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Lead, dissolved (ug/L)

Dates	P-213C	P-214C	P-215C	P-216C
5/8/2012 - 5/11/2012	<.821	1.160	<.821	<.821
12/3/2012 - 12/11/2012	<.821	<.821	<.821	<.821
4/24/2013 - 5/6/2013	<1.040	<1.040	<1.040	<1.040
10/14/2013 - 10/24/2013	<.180	<.180	<.180	<.180
3/18/2014 - 4/3/2014	<.180	<.180	<.180	<.180

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Mercury (ug/L)

Dates	P-213C	P-214C	P-215C	P-216C
12/3/2012 - 12/11/2012		<.0250		<.0250
4/24/2013 - 5/6/2013			.0300	
6/27/2013 - 6/28/2013			<.0250	
10/14/2013 - 10/24/2013		<.0250	<.0250	<.0250
1/20/2014 - 1/21/2014			<.0250	
3/18/2014 - 4/3/2014			<71.0000	
2/24/2015 - 3/20/2015			<.0926	
8/20/2015 - 9/9/2015		<.0926	<.0926	<.0926
9/12/2016 - 10/11/2016		<.1420	<.1420	<.1420
4/11/2022 - 5/11/2022	<.11			
4/23/2024 - 5/23/2024	<.11			
5/23/2024 - 5/30/2024	<.11			

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Mercury, dissolved (ug/L)

Dates	P-215C
6/27/2013 - 6/28/2013	<.025
10/14/2013 - 10/24/2013	<.025
1/20/2014 - 1/21/2014	<.025

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Nickel (ug/L)

Dates	P-213C	P-214C	P-215C	P-216C
5/8/2012 - 5/11/2012	87.50	<2.580	<2.580	18.100
12/3/2012 - 12/11/2012	39.80	3.150	6.480	3.190
4/24/2013 - 5/6/2013	104.00	55.500	10.100	64.900
10/14/2013 - 10/24/2013	10.10	2.910	13.000	18.600
3/18/2014 - 4/3/2014	19.10	10.500	4.970	3.900
8/22/2014 - 9/8/2014	8.91	<.581	<.581	<.581
2/24/2015 - 3/20/2015	10.20	<.581	.862	.845
8/20/2015 - 9/9/2015	10.50	<.581	1.160	<.581
3/7/2016 - 3/29/2016	9.82 *	<1.530	<1.530	<1.530 *
9/12/2016 - 10/11/2016	9.22	2.580	<1.530	<1.530
3/17/2017 - 4/8/2017	11.20	1.460	.930	<.929
9/6/2017 - 9/29/2017	9.78	<.929	<.929	<.929
3/12/2018 - 4/11/2018		5.950 *	1.060	<1.000
8/29/2018 - 9/27/2018	7.38	<3.000	<3.000	<3.000
3/26/2019 - 4/25/2019	10.30	<1.700	<1.700	<1.700
9/17/2019 - 10/11/2019	11.00	<1.700	<1.700	<1.700
11/25/2019	11.20			
3/23/2020 - 4/22/2020	10.10	<1.900	<1.900	<1.900
8/18/2020 - 9/17/2020	8.92			
9/17/2020 - 10/8/2020	8.92	<1.900	<1.900	<1.900
3/11/2021 - 4/6/2021	9.71	<1.900	<1.900	<1.900
10/26/2021 - 11/24/2021	9.61	<1.900	<1.900	<1.900
4/11/2022 - 5/11/2022	10.10	<1.900	<1.900	<1.900
10/11/2022 - 11/10/2022	<1.90	<1.900	<1.900	<1.900
3/20/2023 - 4/19/2023	10.50			
4/19/2023 - 4/25/2023	10.50	<1.900	<1.900	<1.900
9/7/2023 - 10/5/2023	8.79	<1.900	<1.900	<1.900
12/5/2023 - 12/6/2023		<1.900	<1.900	<1.900
4/23/2024 - 5/23/2024	9.60	<2.100	<2.100	<2.100
5/23/2024 - 5/30/2024	9.60	<2.100		
7/26/2024 - 8/9/2024		<2.100	<2.100	<2.100
9/25/2024 - 10/25/2024		<10.500	<10.500	<2.100
10/25/2024 - 11/1/2024	<2.10			

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Nickel, dissolved (ug/L)

Dates	P-213C	P-214C	P-215C	P-216C
5/8/2012 - 5/11/2012	13.50	<2.580	2.85	7.14
12/3/2012 - 12/11/2012	6.97	<2.580	<2.58	<2.58
4/24/2013 - 5/6/2013	26.00	4.110	3.23	7.57
10/14/2013 - 10/24/2013	10.20	.728	2.25	2.49
3/18/2014 - 4/3/2014	11.80	2.990	1.75	3.47

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Selenium (ug/L)

Dates	P-213C	P-214C	P-215C	P-216C
5/8/2012 - 5/11/2012	<1.830	<1.830	<1.830	<1.830
12/3/2012 - 12/11/2012	<1.830	<1.830	<1.830	<1.830
4/24/2013 - 5/6/2013	<7.300	<7.300	<7.300	<7.300
10/14/2013 - 10/24/2013	1.060	<.700	<.700	<.700
3/18/2014 - 4/3/2014	<.700	<.700	<.700	<.700
8/22/2014 - 9/8/2014	<3.340	<3.340	<3.340	<3.340
2/24/2015 - 3/20/2015	<3.340	<3.340	<3.340	<3.340
8/20/2015 - 9/9/2015	<3.340	<3.340	<3.340	<3.340
3/7/2016 - 3/29/2016	<.630 *	<.630	<.630	.840 *
9/12/2016 - 10/11/2016	<.630	<.630	<.630	<.630
3/17/2017 - 4/8/2017	<.928	<.928	<.928	<.928
9/6/2017 - 9/29/2017	<.928	<.928	<.928	<.928
3/12/2018 - 4/11/2018		<.900 *	<.900	<.900
8/29/2018 - 9/27/2018	<.900	<.900	<.900	<.900
3/26/2019 - 4/25/2019	<1.000	<1.000	<1.000	<1.000
9/17/2019 - 10/11/2019	<1.000	<1.000	<1.000	<1.000
3/23/2020 - 4/22/2020	<1.000	<1.000	<1.000	<1.000
8/18/2020 - 9/17/2020	<1.000			
9/17/2020 - 10/8/2020	<1.000	<1.000	<1.000	<1.000
3/11/2021 - 4/6/2021	<.960	<.960	<.960	<.960
10/26/2021 - 11/24/2021	<.960	<.960	<.960	<.960
4/11/2022 - 5/11/2022	<.960	<.960	<.960	<.960
10/11/2022 - 11/10/2022	<.960	<.960	<.960	<.960
3/20/2023 - 4/19/2023	<1.400			
4/19/2023 - 4/25/2023	<1.400	<1.400	<1.400	<1.400
9/7/2023 - 10/5/2023	<1.400	<1.400	<1.400	<1.400
12/5/2023 - 12/6/2023		<1.400	<1.400	<1.400
4/23/2024 - 5/23/2024	<1.400	<1.400	<1.400	<1.400
5/23/2024 - 5/30/2024	<1.400	<1.400		
7/26/2024 - 8/9/2024		<1.400	<1.400	<1.400
9/25/2024 - 10/25/2024		<7.000	<7.000	<1.400
10/25/2024 - 11/1/2024	<1.400			

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Selenium, dissolved (ug/L)

Dates	P-213C	P-214C	P-215C	P-216C
5/8/2012 - 5/11/2012	<1.83	<1.83	<1.83	<1.83
12/3/2012 - 12/11/2012	<1.83	<1.83	<7.32	<3.66
4/24/2013 - 5/6/2013	<7.30	<7.30	<7.30	<7.30
10/14/2013 - 10/24/2013	<.70	<.70	<.70	<.70
3/18/2014 - 4/3/2014	<.70	<.70	<.70	<.70

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Silver (ug/L)

Dates	P-213C	P-214C	P-215C	P-216C
5/8/2012 - 5/11/2012	<1.7000	<1.700	<1.700	<1.700
12/3/2012 - 12/11/2012	<1.7000	<1.700	<1.700	<1.700
4/24/2013 - 5/6/2013	<.3950	<.395	<.395	<.395
10/14/2013 - 10/24/2013	<.0330	<.033	<.033	<.033
3/18/2014 - 4/3/2014	.0386	<.033	<.033	<.033
8/22/2014 - 9/8/2014	<.0420	<.042	<.042	<.042
2/24/2015 - 3/20/2015	<.0420	.049	.056	<.042
8/20/2015 - 9/9/2015	.1280	.125	.128	<.042
3/7/2016 - 3/29/2016	<.1530 *	<.153	<.153	<.153 *
9/12/2016 - 10/11/2016	<.1530	<.153	<.153	<.153
3/17/2017 - 4/8/2017	<.1400	<.140	<.140	<.140
9/6/2017 - 9/29/2017	<.1400	<.140	<.140	<.140
3/12/2018 - 4/11/2018		<.300 *	<.300	<.300
8/29/2018 - 9/27/2018	<.3000	<.300	<.300	<.300
3/26/2019 - 4/25/2019	<.3700	<.370	<.370	<.370
9/17/2019 - 10/11/2019	<.3700	<.370	<.370	<.370
3/23/2020 - 4/22/2020	<.3700	<.370	<.370	<.370
8/18/2020 - 9/17/2020	<.3700			
9/17/2020 - 10/8/2020	<.3700	<.370	<.370	<.370
3/11/2021 - 4/6/2021	<.4200	<.420	<.420	<.420
10/26/2021 - 11/24/2021	<.4200	<.420	<.420	<.420
4/11/2022 - 5/11/2022	<.4900	<.490	<.490	<.490
10/11/2022 - 11/10/2022	1.1500	<.490	<.490	<.490
3/20/2023 - 4/19/2023	<.5000			
4/19/2023 - 4/25/2023	<.5000	<.500	<.500	<.500
9/7/2023 - 10/5/2023	<.5000	<.500	<.500	<.500
12/5/2023 - 12/6/2023		<.500	<.500	<.500
4/23/2024 - 5/23/2024	<.5000	<.500	<.500	<.500
5/23/2024 - 5/30/2024	<.5000	<.500		
7/26/2024 - 8/9/2024		<.500	<.500	<.500
9/25/2024 - 10/25/2024		<2.500	<2.500	<.500
10/25/2024 - 11/1/2024	<.5000			

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Silver, dissolved (ug/L)

Dates	P-213C	P-214C	P-215C	P-216C
5/8/2012 - 5/11/2012	<1.700	<1.700	<1.700	<1.700
12/3/2012 - 12/11/2012	3.510	3.110	<1.700	3.530
4/24/2013 - 5/6/2013	<.395	<.395	<.395	<.395
10/14/2013 - 10/24/2013	<.033	<.033	<.033	<.033
3/18/2014 - 4/3/2014	<.033	<.033	<.033	<.033

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Thallium (ug/L)

Dates	P-213C	P-214C	P-215C	P-216C
5/8/2012 - 5/11/2012	<.523	<.5230	<.5230	<.5230
12/3/2012 - 12/11/2012	<.523	<.5230	<.5230	<.5230
4/24/2013 - 5/6/2013	.374	<.1340	<.1340	4.4200
10/14/2013 - 10/24/2013	.375	<.0500	.3080	.0610
3/18/2014 - 4/3/2014	.456	<.0500	.0578	<.0500
8/22/2014 - 9/8/2014	.321	<.0325	<.0325	<.0325
2/24/2015 - 3/20/2015	.180	<.0325	<.0325	<.0325
8/20/2015 - 9/9/2015	.225	<.0325	.0340	<.0325
3/7/2016 - 3/29/2016	.276 *	<.0255	<.0255	<.0255 *
9/12/2016 - 10/11/2016	.263	<.0255	<.0255	<.0255
3/17/2017 - 4/8/2017	.211	<.0644	<.0644	<.0644
9/6/2017 - 9/29/2017	.167	<.0644	<.0644	<.0644
3/12/2018 - 4/11/2018		<.1700 *	<.1700	<.1700
8/29/2018 - 9/27/2018	.353	<.1700	<.1700	<.1700
3/26/2019 - 4/25/2019	<.270	<.2700	<.2700	<.2700
9/17/2019 - 10/11/2019	<.270	<.2700	<.2700	<.2700
3/23/2020 - 4/22/2020	<.260	<.2600	<.2600	<.2600
8/18/2020 - 9/17/2020	<.260			
9/17/2020 - 10/8/2020	<.260	<.2600	<.2600	<.2600
3/11/2021 - 4/6/2021	<.260	1.7800	<.2600	<.2600
6/17/2021 - 6/22/2021		<.2600		
10/26/2021 - 11/24/2021	<.260	<.2600	<.2600	<.2600
4/11/2022 - 5/11/2022	<.260	<.2600	<.2600	<.2600
10/11/2022 - 11/10/2022	<.260	<.2600	<.2600	<.2600
3/20/2023 - 4/19/2023	<.260			
4/19/2023 - 4/25/2023	<.260	<.2600	<.2600	<.2600
9/7/2023 - 10/5/2023	<.260	5.0200	6.7600	<.2600
12/5/2023 - 12/6/2023		<.2600	<.2600	<.2600
4/23/2024 - 5/23/2024	<.570	<.5700	<.5700	<.5700
5/23/2024 - 5/30/2024	<.570	<.5700		
7/26/2024 - 8/9/2024		<.5700	<.5700	<.5700
9/25/2024 - 10/25/2024		<.5700	<.5700	<.5700
10/25/2024 - 11/1/2024	<.570			

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Thallium, dissolved (ug/L)

Dates	P-213C	P-214C	P-215C	P-216C
5/8/2012 - 5/11/2012	<.523	<.523	<.523	<.523
12/3/2012 - 12/11/2012	<.523	<.523	<.523	<.523
4/24/2013 - 5/6/2013	.273	<.134	<.134	<.134
10/14/2013 - 10/24/2013	.357	<.050	<.050	<.050
3/18/2014 - 4/3/2014	.397	<.050	<.050	<.050

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for TIN (ug/L)

Dates	P-213C	P-214C	P-215C	P-216C
12/3/2012 - 12/11/2012		<16.700		<16.700
4/24/2013 - 5/6/2013			<1.900	
10/14/2013 - 10/24/2013		<.770		<.770
3/18/2014 - 4/3/2014			<121.000	
8/20/2015 - 9/9/2015		<1.800	<1.800	<1.800
9/12/2016 - 10/11/2016		<.832	<.832	<.832
4/11/2022 - 5/11/2022	<3.0			
4/23/2024 - 5/23/2024	<2.3			
5/23/2024 - 5/30/2024	<2.3			

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Vanadium (ug/L)

Dates	P-213C	P-214C	P-215C	P-216C
5/8/2012 - 5/11/2012	6.880	4.840	4.430	4.250
12/3/2012 - 12/11/2012	18.900	<2.100	<2.100	<2.100
4/24/2013 - 5/6/2013	<4.170	<4.170	<4.170	<4.170
10/14/2013 - 10/24/2013	.605	<.500	<.500	<.500
3/18/2014 - 4/3/2014	4.570	<.500	<.500	<.500
8/22/2014 - 9/8/2014	<.449	<.449	<.449	<.449
2/24/2015 - 3/20/2015	<.449	<.449	<.449	<.449
8/20/2015 - 9/9/2015	<.449	<.449	<.449	<.449
3/7/2016 - 3/29/2016	<.255 *	<.255	<.255	<.255 *
9/12/2016 - 10/11/2016	<.255	.453	.394	<.255
3/17/2017 - 4/8/2017	<.840	<.840	<.840	<.840
9/6/2017 - 9/29/2017	<.840	<.840	<.840	<.840
3/12/2018 - 4/11/2018		<.520 *	<.520	<.520
8/29/2018 - 9/27/2018	<.520	<.520	<.520	<.520
3/26/2019 - 4/25/2019	<.820	<.820	<.820	<.820
9/17/2019 - 10/11/2019	<.820	<.820	<.820	<.820
3/23/2020 - 4/22/2020	<.820	<.820	<.820	<.820
8/18/2020 - 9/17/2020	<.850			
9/17/2020 - 10/8/2020	<.850	<.850	<.850	<.850
3/11/2021 - 4/6/2021	<1.100	<1.100	<1.100	<1.100
10/26/2021 - 11/24/2021	<1.100	<1.100	<1.100	<1.100
4/11/2022 - 5/11/2022	<1.100	<1.100	<1.100	<1.100
10/11/2022 - 11/10/2022	<1.100	<1.100	<1.100	<1.100
3/20/2023 - 4/19/2023	<1.100			
4/19/2023 - 4/25/2023	<1.100	5.290	<1.100	<1.100
9/7/2023 - 10/5/2023	<1.100	<1.100	<1.100	<1.100
12/5/2023 - 12/6/2023		<1.100	<1.100	<1.100
4/23/2024 - 5/23/2024	<1.100	<1.100	<1.100	<1.100
5/23/2024 - 5/30/2024	<1.100	<1.100		
7/26/2024 - 8/9/2024		<1.100	<1.100	<1.100
9/25/2024 - 10/25/2024		<5.500	<5.500	<1.100
10/25/2024 - 11/1/2024	<1.100			

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Vanadium, dissolved (ug/L)

Dates	P-213C	P-214C	P-215C	P-216C
5/8/2012 - 5/11/2012	3.62	6.07	3.31	4.55
12/3/2012 - 12/11/2012	<2.10	<2.10	<2.10	<2.10
4/24/2013 - 5/6/2013	<4.17	<4.17	<4.17	<4.17
10/14/2013 - 10/24/2013	<.50	<.50	<.50	<.50
3/18/2014 - 4/3/2014	<.50	<.50	<.50	<.50

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for Zinc (ug/L)

Dates	P-213C	P-214C	P-215C	P-216C
5/8/2012 - 5/11/2012	23.10	13.40	12.70	<9.11
12/3/2012 - 12/11/2012	166.00	43.80	42.50	58.10
4/24/2013 - 5/6/2013	17.30	4.07	5.35	41.90
10/14/2013 - 10/24/2013	5.38	5.30	3.85	4.83
3/18/2014 - 4/3/2014	19.70	<2.00	<2.00	<2.00
8/22/2014 - 9/8/2014	<6.95	<6.95	<6.95	<6.95
2/24/2015 - 3/20/2015	<6.95	<6.95	<6.95	14.40
8/20/2015 - 9/9/2015	<6.95	<6.95	<6.95	39.60
3/7/2016 - 3/29/2016	7.38 *	<5.21	<5.21	<5.21 *
9/12/2016 - 10/11/2016	<5.21	<5.21	<5.21	<5.21
3/17/2017 - 4/8/2017	<11.50	<11.50	<11.50	<11.50
9/6/2017 - 9/29/2017	<11.50	<11.50	<11.50	<11.50
3/12/2018 - 4/11/2018		<10.00 *	<10.00	<10.00
8/29/2018 - 9/27/2018	<10.00	<10.00	<10.00	<10.00
3/26/2019 - 4/25/2019	<10.00	<10.00	<10.00	<10.00
9/17/2019 - 10/11/2019	<10.00	<10.00	<10.00	<10.00
3/23/2020 - 4/22/2020	<10.00	<10.00	<10.00	<10.00
8/18/2020 - 9/17/2020	<10.00			
9/17/2020 - 10/8/2020	<10.00	<10.00	<10.00	<10.00
3/11/2021 - 4/6/2021	<10.00	<10.00	<10.00	<10.00
10/26/2021 - 11/24/2021	<10.00	<10.00	<10.00	<10.00
4/11/2022 - 5/11/2022	<10.00	<10.00	<10.00	<10.00
10/11/2022 - 11/10/2022	<10.00	<10.00	<10.00	<10.00
3/20/2023 - 4/19/2023	<6.40			
4/19/2023 - 4/25/2023	<6.40	<6.40	<6.40	<6.40
9/7/2023 - 10/5/2023	<6.40	<6.40	<6.40	<6.40
12/5/2023 - 12/6/2023		<6.40	<6.40	<6.40
4/23/2024 - 5/23/2024	<9.70	<9.70	<9.70	<9.70
5/23/2024 - 5/30/2024	<9.70	<9.70		
7/26/2024 - 8/9/2024		<9.70	<9.70	<9.70
9/25/2024 - 10/25/2024		<48.50	<48.50	<9.70
10/25/2024 - 11/1/2024	<9.70			

* - The displayed value is the arithmetic mean of multiple database matches.

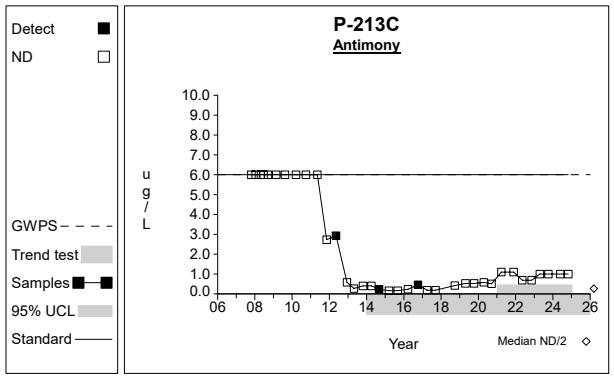
Table 9

Analytical Data Summary for Zinc, dissolved (ug/L)

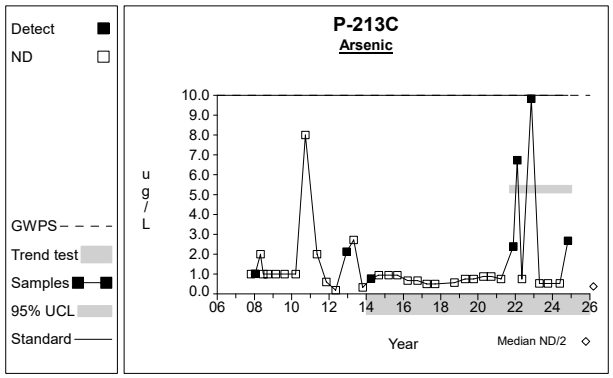
Dates	P-213C	P-214C	P-215C	P-216C
5/8/2012 - 5/11/2012	<9.11	<9.11	<9.11	<9.11
12/3/2012 - 12/11/2012	40.70	53.30	49.00	61.50
4/24/2013 - 5/6/2013	3.54	<3.13	<3.13	<3.13
10/14/2013 - 10/24/2013	5.61	2.50	2.37	<2.00
3/18/2014 - 4/3/2014	3.65	<2.00	<2.00	<2.00

* - The displayed value is the arithmetic mean of multiple database matches.

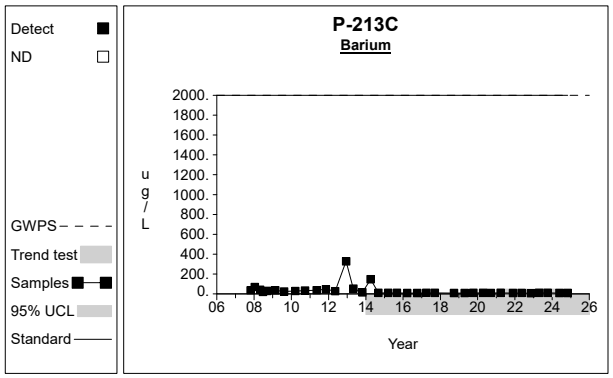
Confidence Limits (Assessment)



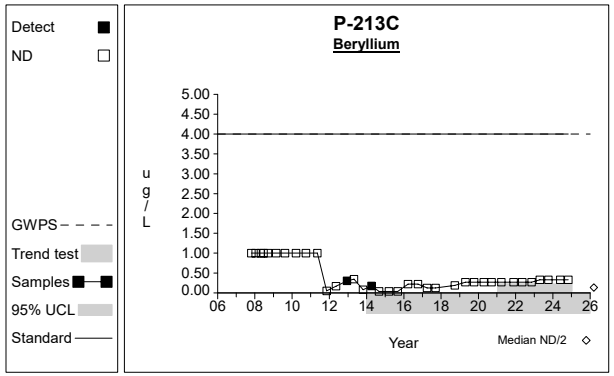
Graph 1



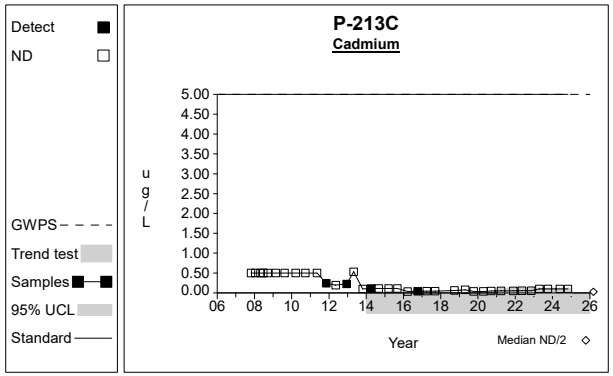
Graph 2



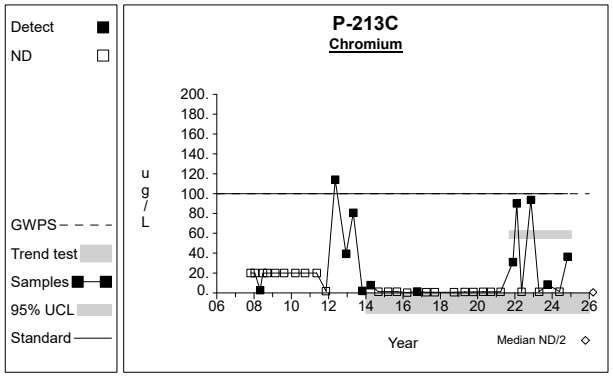
Graph 3



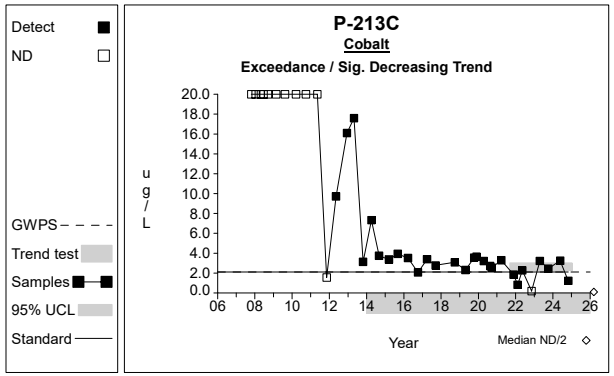
Graph 4



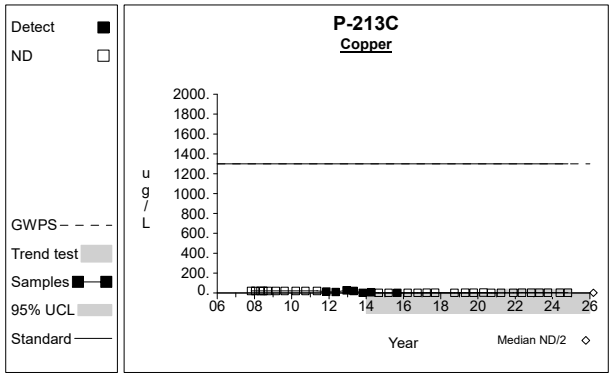
Graph 5



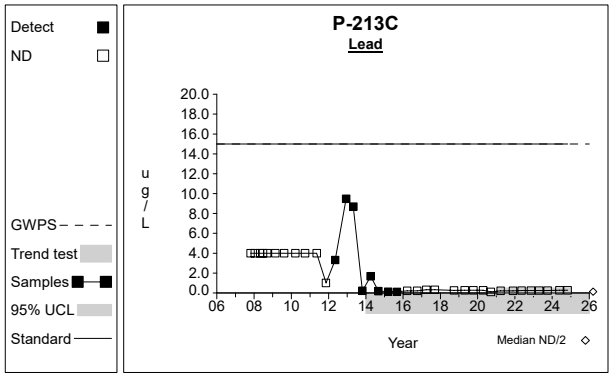
Graph 6



Graph 7

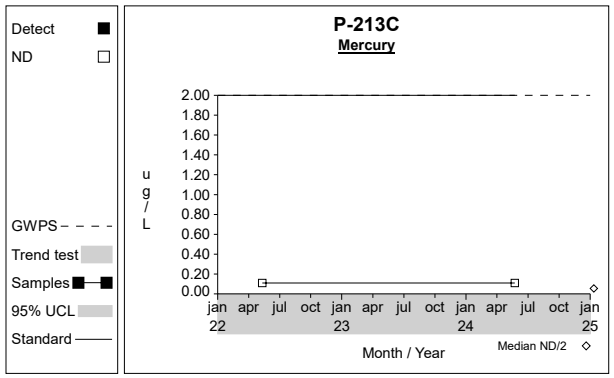


Graph 8

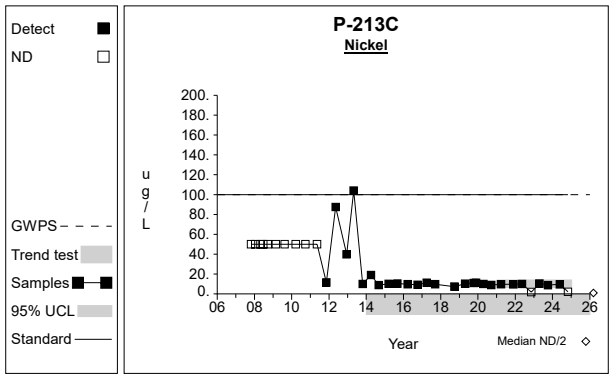


Graph 9

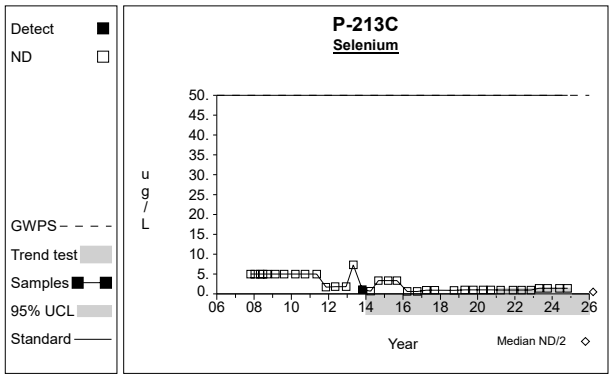
Confidence Limits (Assessment)



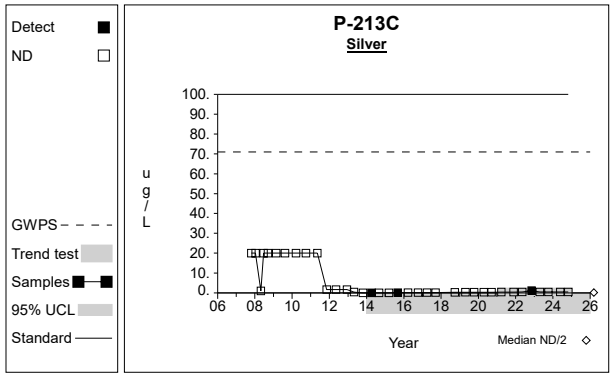
Graph 10



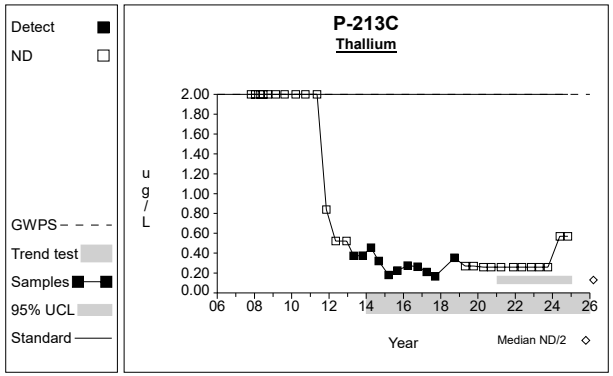
Graph 11



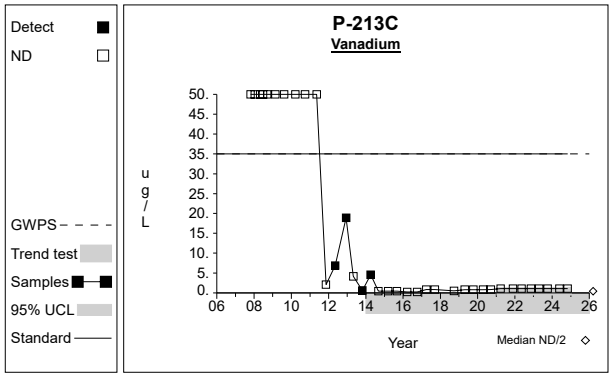
Graph 12



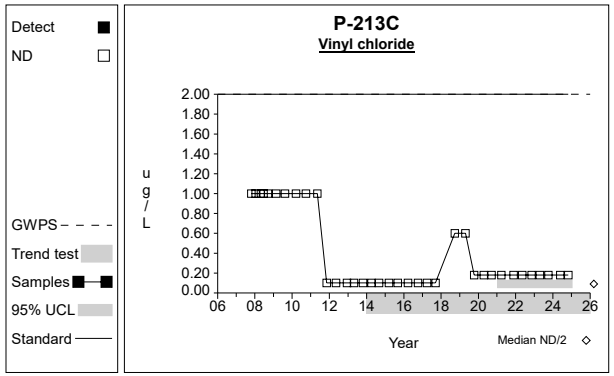
Graph 13



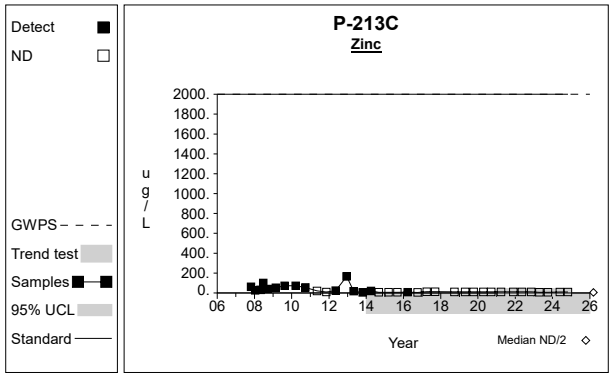
Graph 14



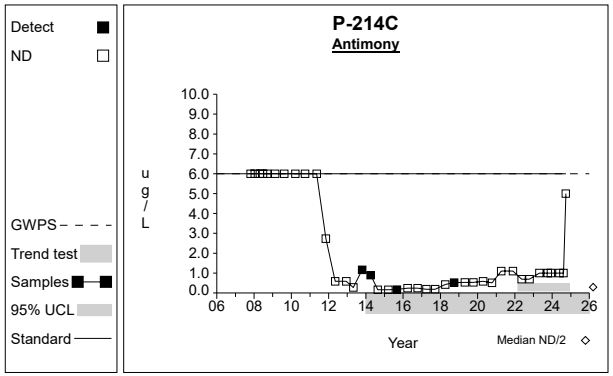
Graph 15



Graph 16

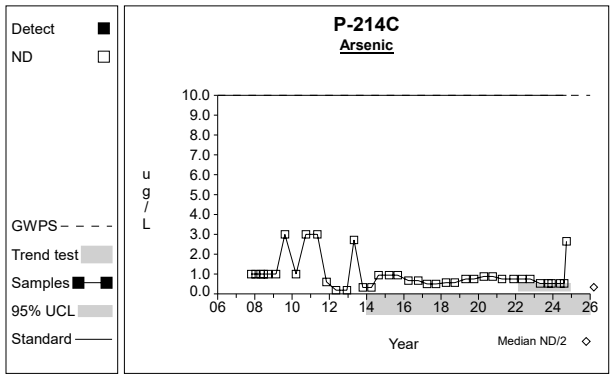


Graph 17

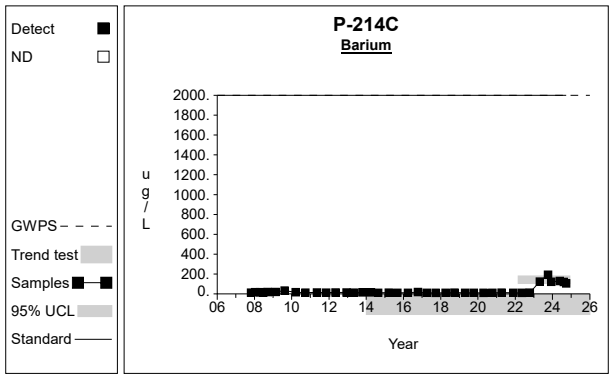


Graph 18

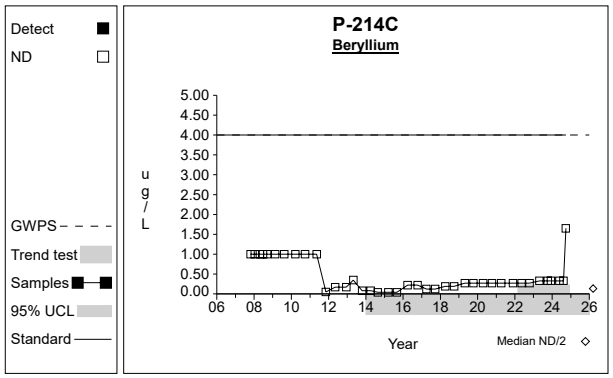
Confidence Limits (Assessment)



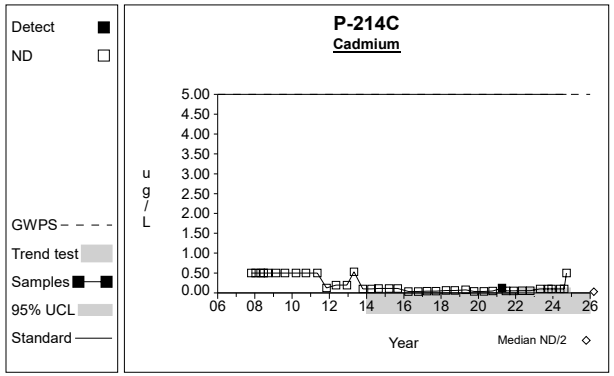
Graph 19



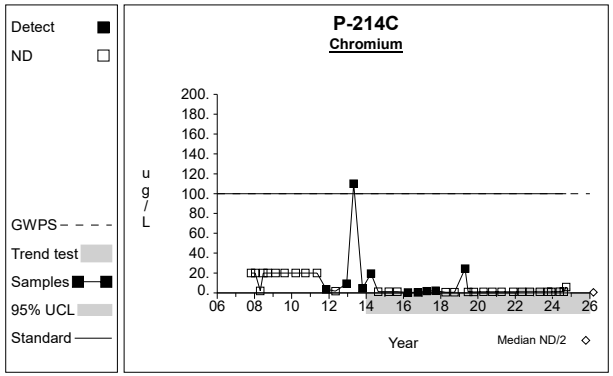
Graph 20



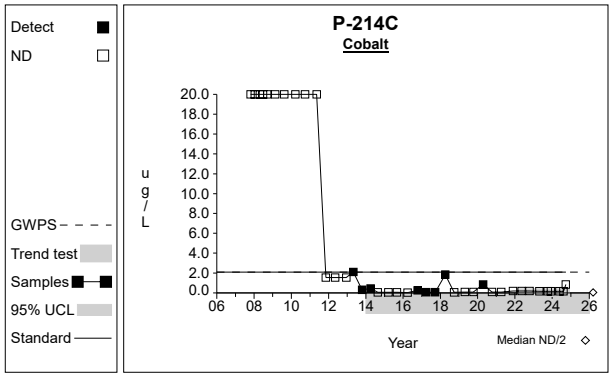
Graph 21



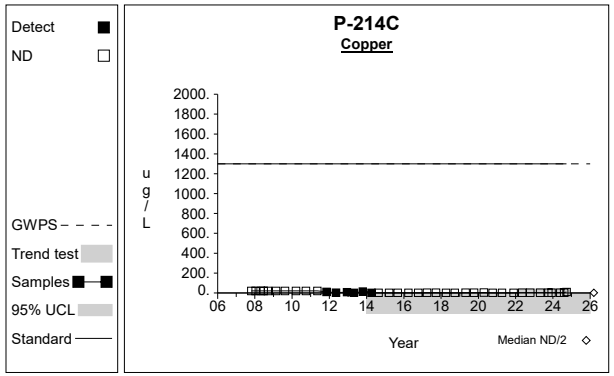
Graph 22



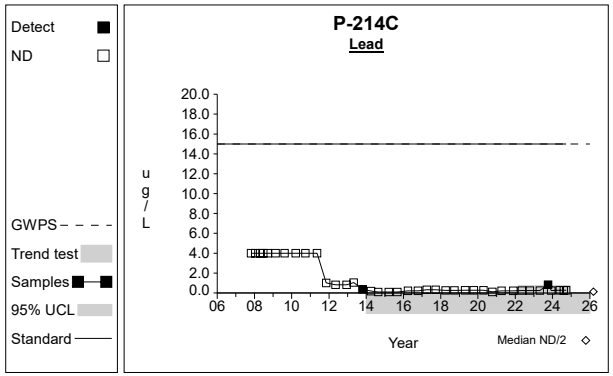
Graph 23



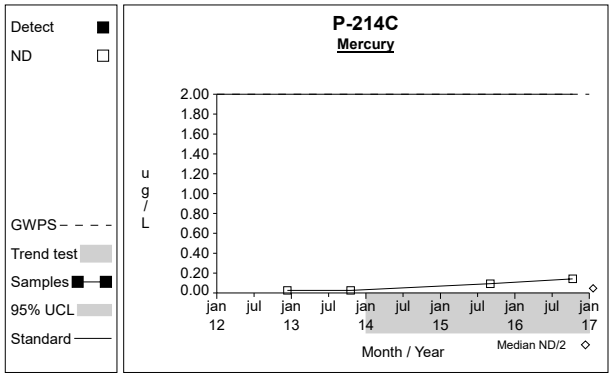
Graph 24



Graph 25

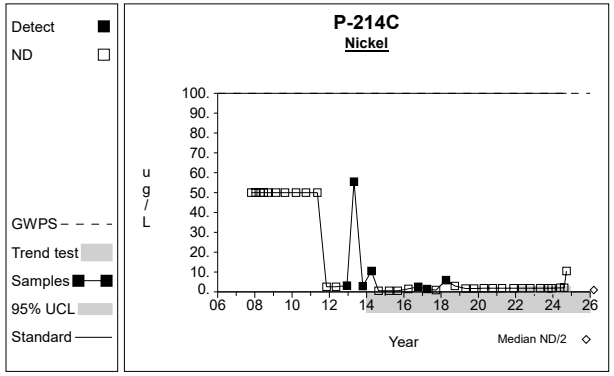


Graph 26

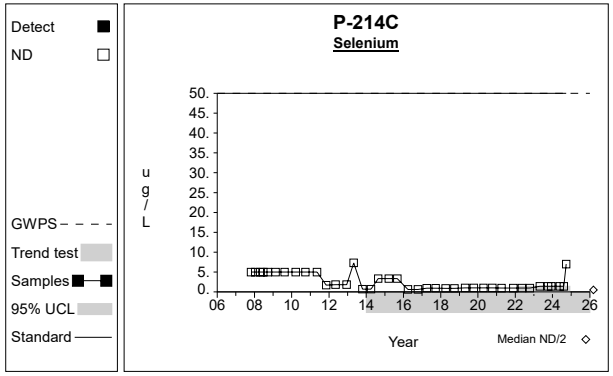


Graph 27

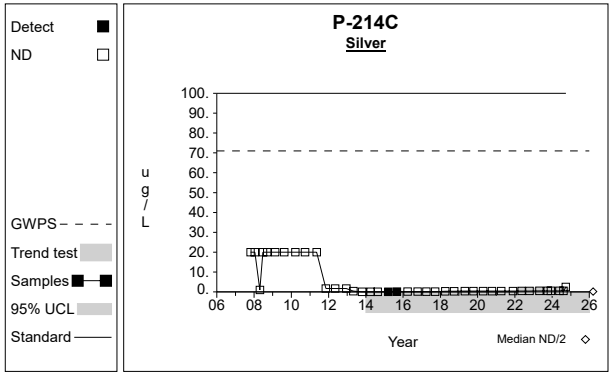
Confidence Limits (Assessment)



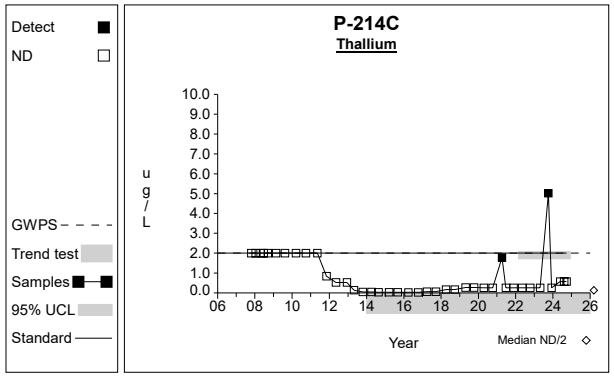
Graph 28



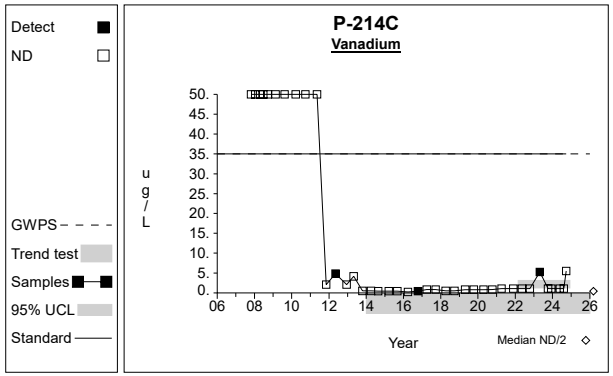
Graph 29



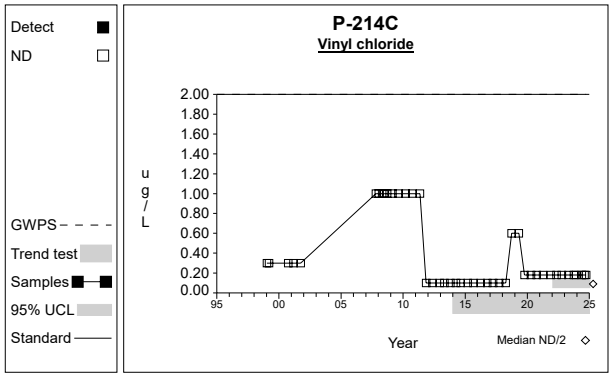
Graph 30



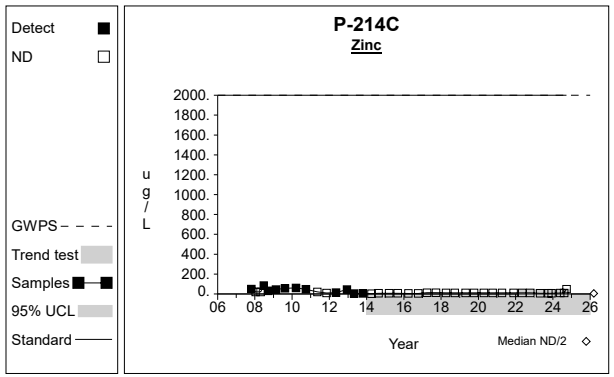
Graph 31



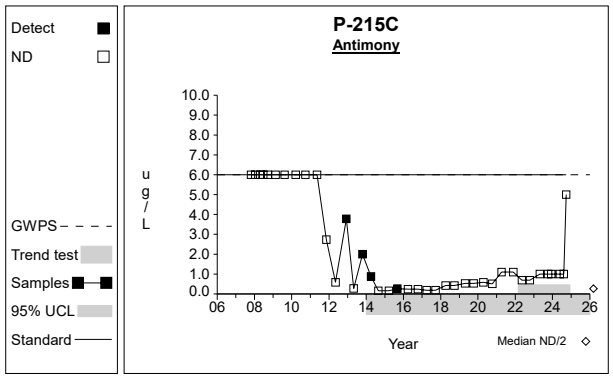
Graph 32



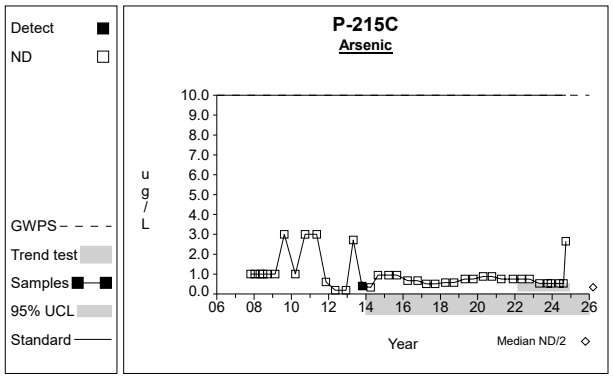
Graph 33



Graph 34

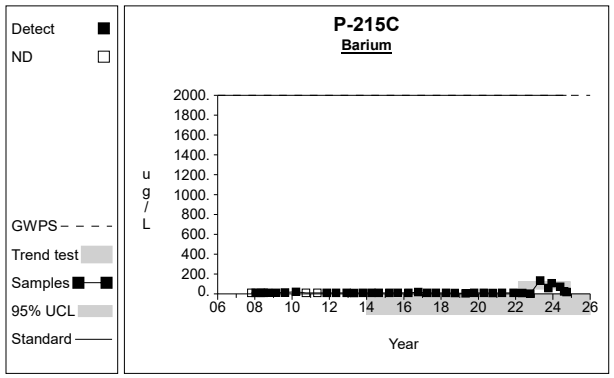


Graph 35

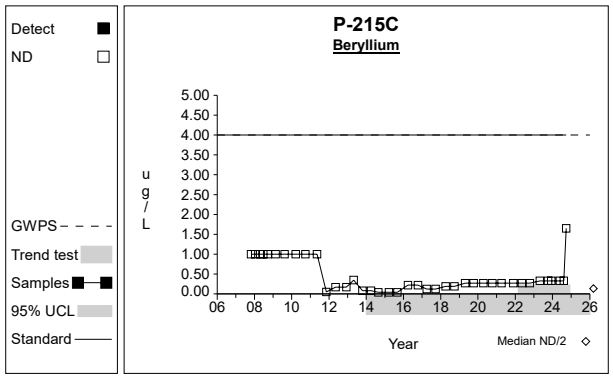


Graph 36

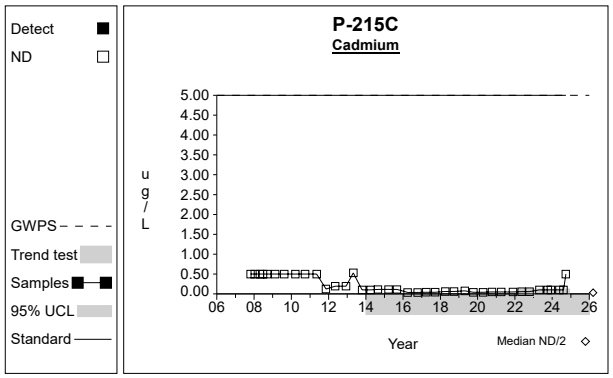
Confidence Limits (Assessment)



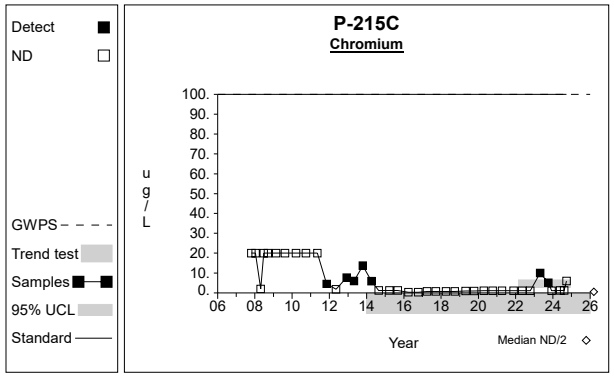
Graph 37



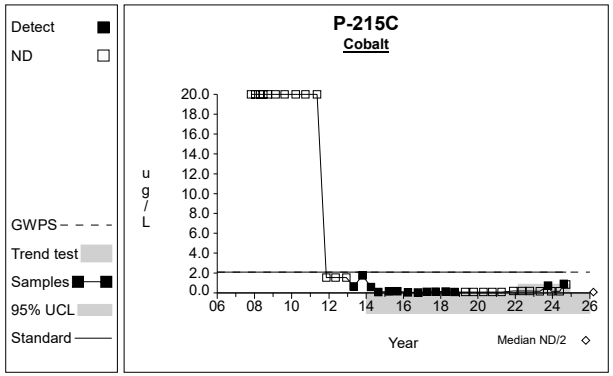
Graph 38



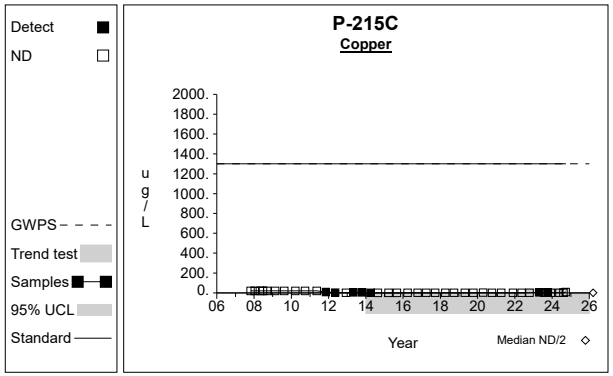
Graph 39



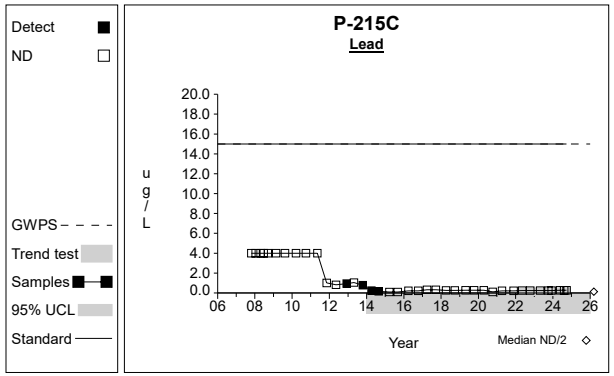
Graph 40



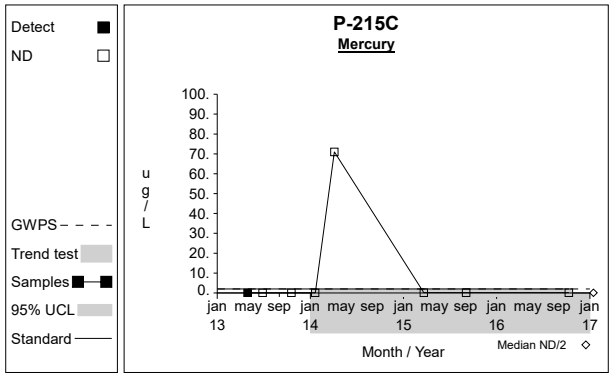
Graph 41



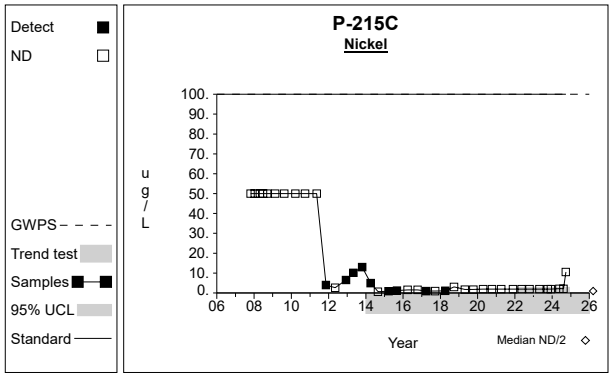
Graph 42



Graph 43

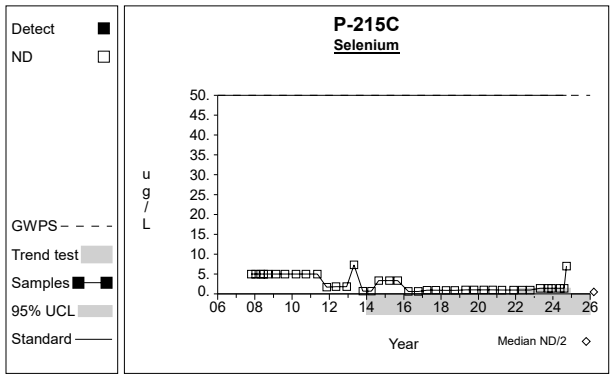


Graph 44

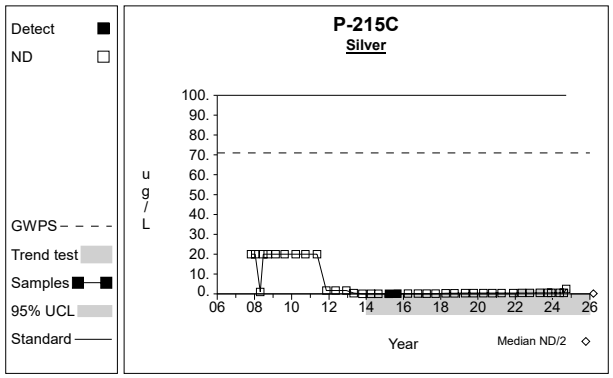


Graph 45

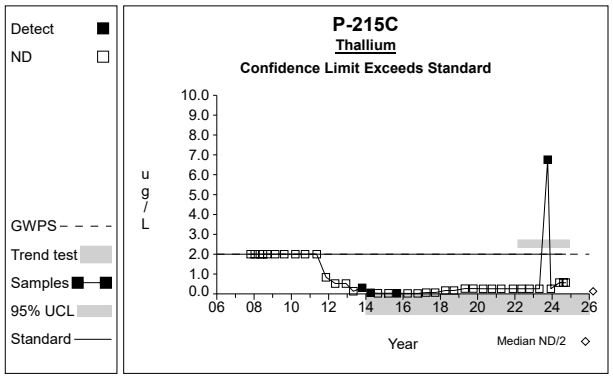
Confidence Limits (Assessment)



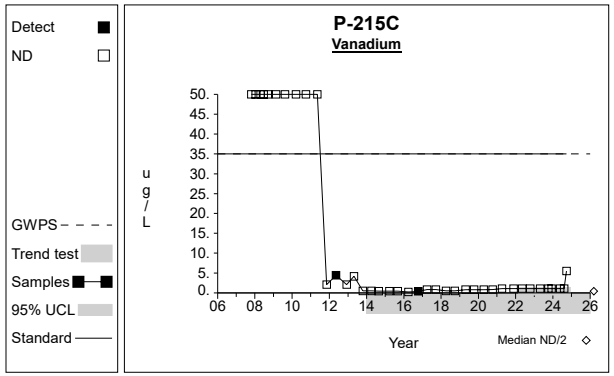
Graph 46



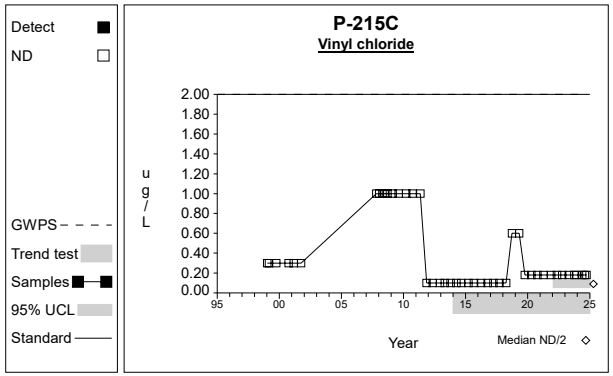
Graph 47



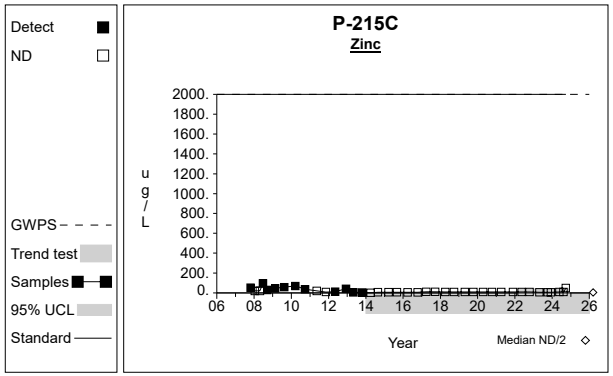
Graph 48



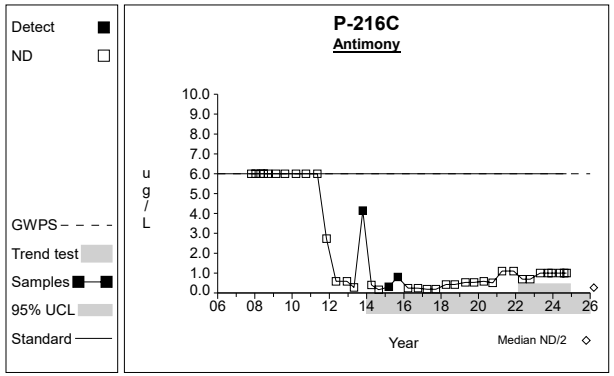
Graph 49



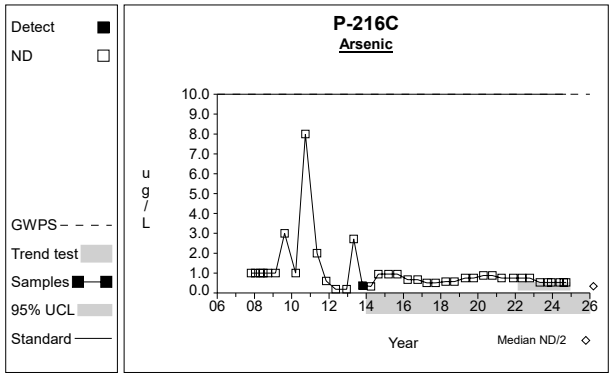
Graph 50



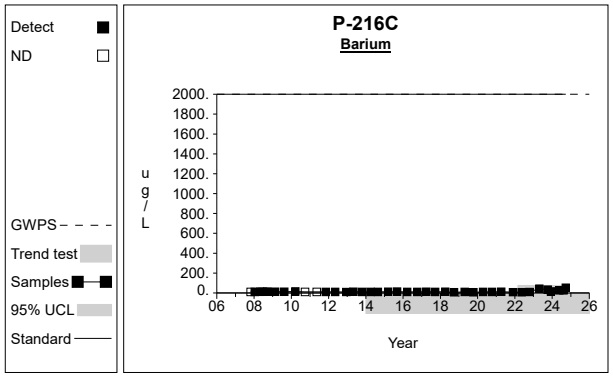
Graph 51



Graph 52

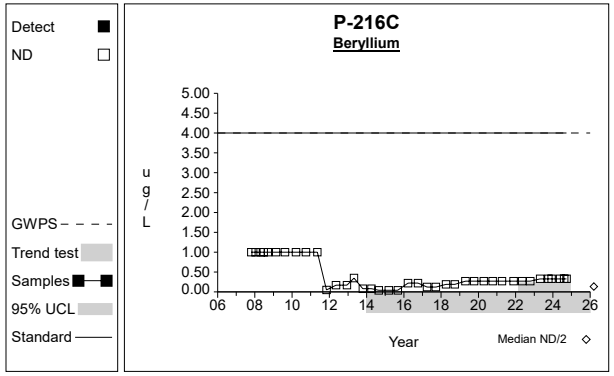


Graph 53

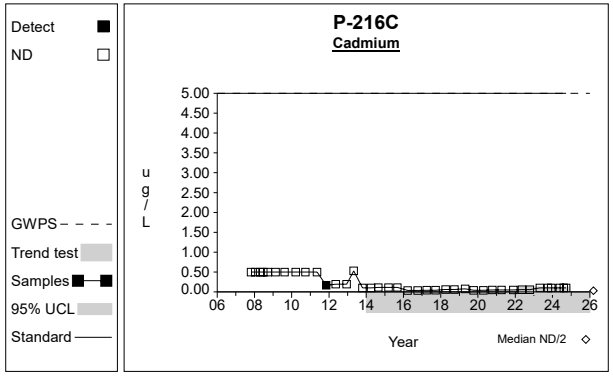


Graph 54

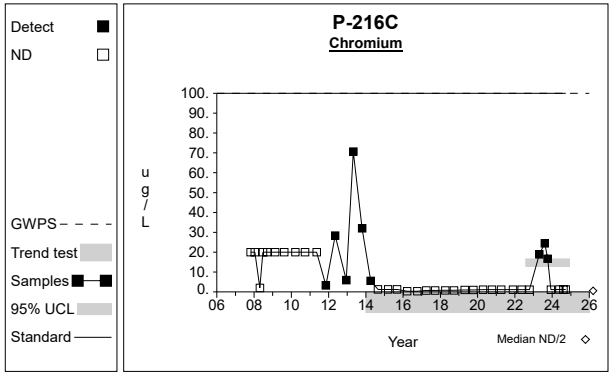
Confidence Limits (Assessment)



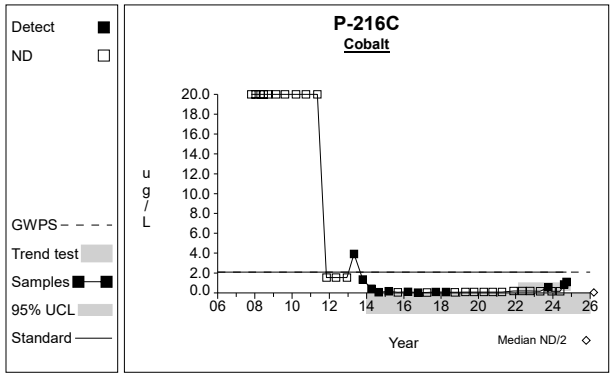
Graph 55



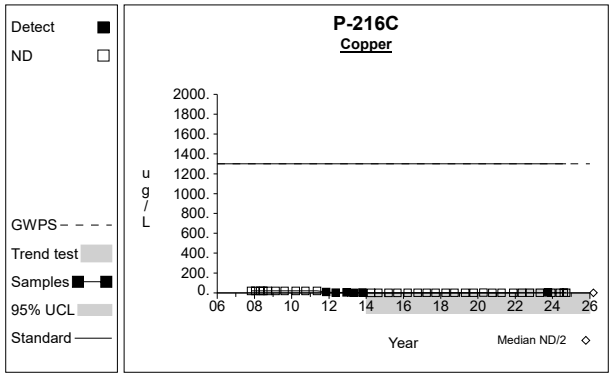
Graph 56



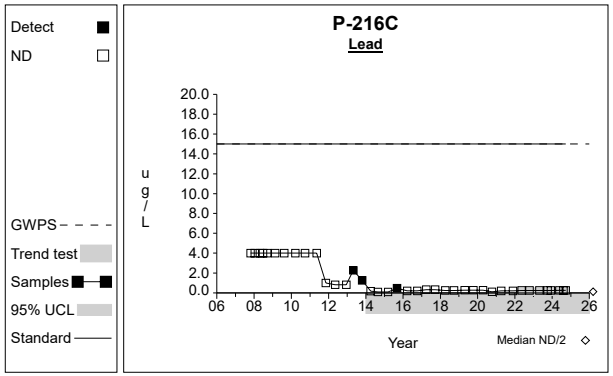
Graph 57



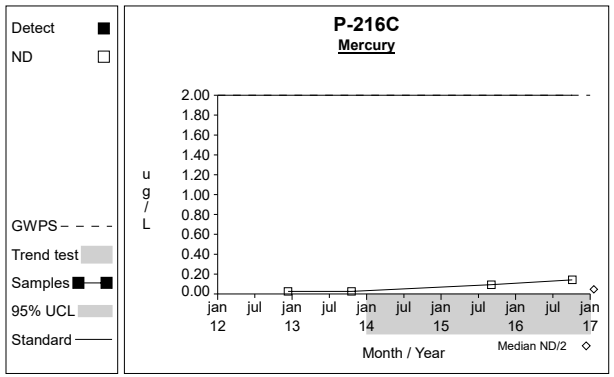
Graph 58



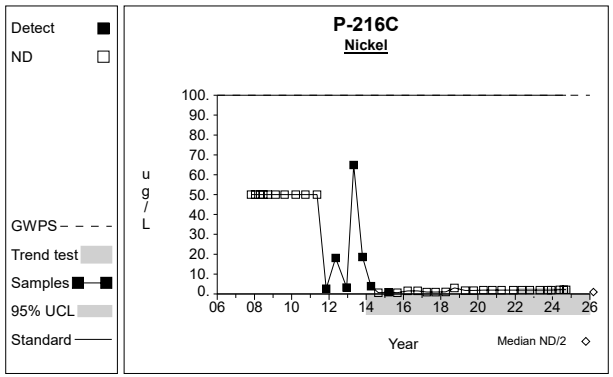
Graph 59



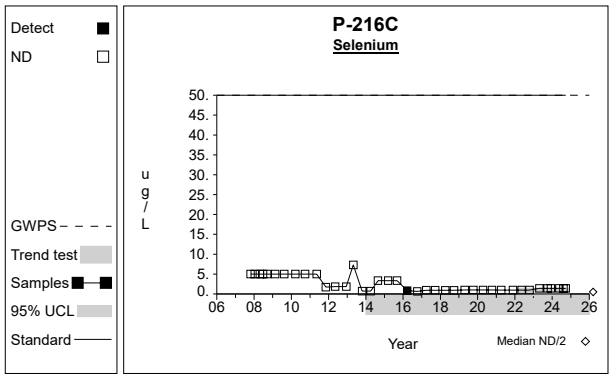
Graph 60



Graph 61

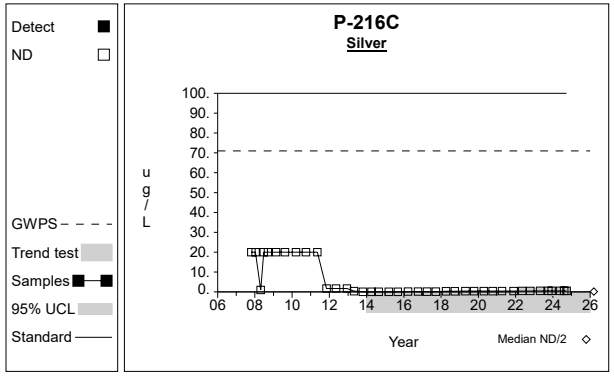


Graph 62

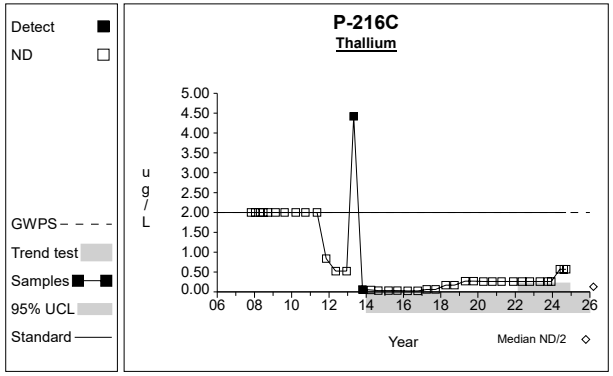


Graph 63

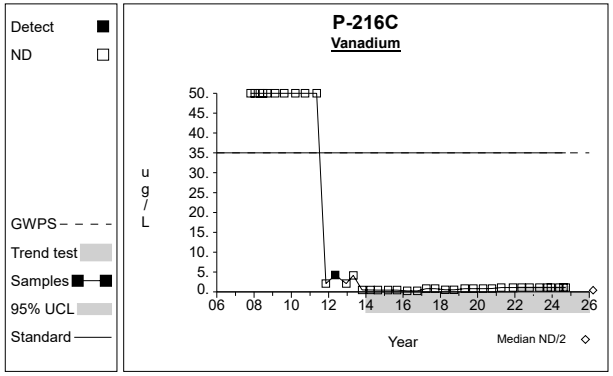
Confidence Limits (Assessment)



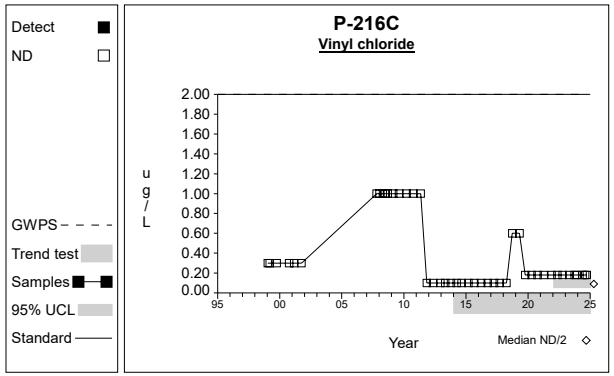
Graph 64



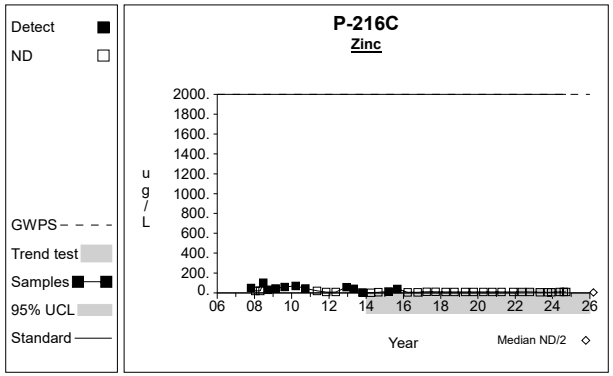
Graph 65



Graph 66



Graph 67



Graph 68

Table 1

Confidence Intervals for Comparing the Mean of the Last 8 Measurements to an Assessment Monitoring Standard

Constituent	Units	Well	N	Mean	SD	Factor	95% LCL	95% UCL	Standard	Trend	
Antimony	ug/L	P-213C	8	0.265	0.000	0.670	0.265	0.265	6.000		
Arsenic	ug/L	P-213C	8	2.891	3.556	0.670	0.510	5.273	10.000		
Barium	ug/L	P-213C	8	9.514	1.192	0.670	8.715	10.312	2000.000		
Beryllium	ug/L	P-213C	8	0.135	0.000	0.670	0.135	0.135	4.000		
Cadmium	ug/L	P-213C	8	0.028	0.000	0.670	0.028	0.028	5.000		
Chromium	ug/L	P-213C	8	32.682	39.130	0.670	6.473	58.892	100.000		
Cobalt	ug/L	P-213C	8	1.894	1.127	0.670	1.139	2.649	2.100	dec	**
Copper	ug/L	P-213C	8	0.900	0.000	0.670	0.900	0.900	1300.000		
Lead	ug/L	P-213C	8	0.120	0.000	0.670	0.120	0.120	15.000		
Mercury	ug/L	P-213C	2								*
Nickel	ug/L	P-213C	8	7.526	4.088	0.670	4.788	10.264	100.000		
Selenium	ug/L	P-213C	8	0.500	0.000	0.670	0.500	0.500	50.000		
Silver	ug/L	P-213C	8	0.306	0.341	0.670	0.077	0.534	100.000		
Thallium	ug/L	P-213C	8	0.130	0.000	0.670	0.130	0.130	2.000		
Vanadium	ug/L	P-213C	8	0.420	0.000	0.670	0.420	0.420	35.000		
Vinyl chloride	ug/L	P-213C	8	0.090	0.000	0.670	0.090	0.090	2.000		
Zinc	ug/L	P-213C	8	5.000	0.000	0.670	5.000	5.000	2000.000		
Antimony	ug/L	P-214C	8	0.290	0.000	0.670	0.290	0.290	6.000		
Arsenic	ug/L	P-214C	8	0.336	0.000	0.670	0.336	0.336	10.000		
Barium	ug/L	P-214C	8	102.638	61.591	0.670	61.383	143.892	2000.000		
Beryllium	ug/L	P-214C	8	0.135	0.000	0.670	0.135	0.135	4.000		
Cadmium	ug/L	P-214C	8	0.030	0.000	0.670	0.030	0.030	5.000		
Chromium	ug/L	P-214C	8	0.550	0.000	0.670	0.550	0.550	100.000		
Cobalt	ug/L	P-214C	8	0.045	0.000	0.670	0.045	0.046	2.100		
Copper	ug/L	P-214C	8	0.900	0.000	0.670	0.900	0.900	1300.000		
Lead	ug/L	P-214C	8	0.209	0.253	0.670	0.040	0.379	15.000		
Mercury	ug/L	P-214C	2								*
Nickel	ug/L	P-214C	8	0.950	0.000	0.670	0.950	0.950	100.000		
Selenium	ug/L	P-214C	8	0.500	0.000	0.670	0.500	0.500	50.000		
Silver	ug/L	P-214C	8	0.185	0.000	0.670	0.185	0.185	100.000		
Thallium	ug/L	P-214C	8	0.741	1.729	0.670	0.000	1.899	2.000		
Vanadium	ug/L	P-214C	8	1.029	1.722	0.670	0.000	2.182	35.000		
Vinyl chloride	ug/L	P-214C	8	0.090	0.000	0.670	0.090	0.090	2.000		
Zinc	ug/L	P-214C	8	5.000	0.000	0.670	5.000	5.000	2000.000		
Antimony	ug/L	P-215C	8	0.265	0.000	0.670	0.265	0.265	6.000		
Arsenic	ug/L	P-215C	8	0.336	0.000	0.670	0.336	0.336	10.000		
Barium	ug/L	P-215C	8	53.931	48.507	0.670	21.441	86.422	2000.000		
Beryllium	ug/L	P-215C	8	0.135	0.000	0.670	0.135	0.135	4.000		
Cadmium	ug/L	P-215C	8	0.030	0.000	0.670	0.030	0.030	5.000		
Chromium	ug/L	P-215C	8	2.303	3.497	0.670	0.000	4.645	100.000		
Cobalt	ug/L	P-215C	8	0.270	0.346	0.670	0.038	0.502	2.100		
Copper	ug/L	P-215C	8	2.177	2.368	0.670	0.591	3.764	1300.000		

* - Insufficient Data
** - Significant Exceedance
LCL = Lower Confidence Limit
UCL = Upper Confidence Limit

Table 1

Confidence Intervals for Comparing the Mean of the Last 8 Measurements to an Assessment Monitoring Standard

Constituent	Units	Well	N	Mean	SD	Factor	95% LCL	95% UCL	Standard	Trend	
Lead	ug/L	P-215C	8	0.120	0.000	0.670	0.120	0.120	15.000		
Mercury	ug/L	P-215C	5	0.046	0.000	0.953	0.046	0.046	2.000		
Nickel	ug/L	P-215C	8	0.950	0.000	0.670	0.950	0.950	100.000		
Selenium	ug/L	P-215C	8	0.500	0.000	0.670	0.500	0.500	50.000		
Silver	ug/L	P-215C	8	0.185	0.000	0.670	0.185	0.185	100.000		
Thallium	ug/L	P-215C	8	0.959	2.344	0.670	0.000	2.529	2.000		**
Vanadium	ug/L	P-215C	8	0.420	0.000	0.670	0.420	0.420	35.000		
Vinyl chloride	ug/L	P-215C	8	0.090	0.000	0.670	0.090	0.090	2.000		
Zinc	ug/L	P-215C	8	5.000	0.000	0.670	5.000	5.000	2000.000		
Antimony	ug/L	P-216C	8	0.265	0.000	0.670	0.265	0.265	6.000		
Arsenic	ug/L	P-216C	8	0.336	0.000	0.670	0.336	0.336	10.000		
Barium	ug/L	P-216C	8	26.180	16.028	0.670	15.444	36.916	2000.000		
Beryllium	ug/L	P-216C	8	0.135	0.000	0.670	0.135	0.135	4.000		
Cadmium	ug/L	P-216C	8	0.030	0.000	0.670	0.030	0.030	5.000		
Chromium	ug/L	P-216C	8	7.856	10.310	0.670	0.950	14.762	100.000		
Cobalt	ug/L	P-216C	8	0.346	0.439	0.670	0.052	0.639	2.100		
Copper	ug/L	P-216C	8	1.533	1.789	0.670	0.334	2.731	1300.000		
Lead	ug/L	P-216C	8	0.120	0.000	0.670	0.120	0.120	15.000		
Mercury	ug/L	P-216C	2								*
Nickel	ug/L	P-216C	8	0.950	0.000	0.670	0.950	0.950	100.000		
Selenium	ug/L	P-216C	8	0.500	0.000	0.670	0.500	0.500	50.000		
Silver	ug/L	P-216C	8	0.185	0.000	0.670	0.185	0.185	100.000		
Thallium	ug/L	P-216C	8	0.130	0.000	0.670	0.130	0.130	2.000		
Vanadium	ug/L	P-216C	8	0.420	0.000	0.670	0.420	0.420	35.000		
Vinyl chloride	ug/L	P-216C	8	0.090	0.000	0.670	0.090	0.090	2.000		
Zinc	ug/L	P-216C	8	5.000	0.000	0.670	5.000	5.000	2000.000		

* - Insufficient Data
** - Significant Exceedance
LCL = Lower Confidence Limit
UCL = Upper Confidence Limit

Worksheet 6 - Assessment Monitoring
Antimony (ug/L) at P-213C

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.12** / **8** = **0.265**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.562** - **4.494**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.265** - **1.895** * **0.0**/**8**^{½} = **0.265**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.265** + **1.895** * **0.0**/**8**^{½} = **0.265**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **21** * (**21**-1) / 2 = **210**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **279.667**	Variance estimate for slope.
8	M(S) = (**N**' ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**210** ± **2.576** * **279.667**^{½}) / 2 = [**83.46**, **126.54**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Arsenic (ug/L) at P-213C

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **23.13** / **8** = **2.891**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**155.379** - **534.997**/**8**) / (**8**-1))^{½} = **3.556**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **2.891** - **1.895** * **3.556**/**8**^{½} = **0.51**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **2.891** + **1.895** * **3.556**/**8**^{½} = **5.273**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **668.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **668.333**^{½}) / 2 = [**82.202**, **148.798**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Barium (ug/L) at P-213C

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **76.11** / **8** = **9.514**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**734.046** - **5792.732**/**8**) / (**8**-1))^{½} = **1.192**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **9.514** - **1.895** * **1.192**/**8**^{½} = **8.715**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **9.514** + **1.895** * **1.192**/**8**^{½} = **10.312**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **21** * (**21**-1) / 2 = **210**	Number of sample pairs during trend detection period.
6	S = **-0.098**	Sen's estimator of trend.
7	var(S) = **1094.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**210** ± **2.576** * **1094.667**^{½}) / 2 = [**62.386**, **147.614**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.361**, **0.054**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Beryllium (ug/L) at P-213C

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.08** / **8** = **0.135**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.146** - **1.166**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.135** - **1.895** * **0.0**/**8**^{½} = **0.135**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.135** + **1.895** * **0.0**/**8**^{½} = **0.135**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **21** * (**21**-1) / 2 = **210**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **146.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**210** ± **2.576** * **146.667**^{½}) / 2 = [**89.402**, **120.598**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cadmium (ug/L) at P-213C

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.22** / **8** = **0.028**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.006** - **0.048**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.028** - **1.895** * **0.0**/**8**^{½} = **0.028**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.028** + **1.895** * **0.0**/**8**^{½} = **0.028**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **21** * (**21**-1) / 2 = **210**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **279.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**210** ± **2.576** * **279.667**^{½}) / 2 = [**83.46**, **126.54**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Chromium (ug/L) at P-213C

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **261.46** / **8** = **32.683**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**19263.198** - **68361.332**/**8**) / (**8**-1))^{½} = **39.13**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **32.683** - **1.895** * **39.13**/**8**^{½} = **6.473**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **32.683** + **1.895** * **39.13**/**8**^{½} = **58.892**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **849.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **849.333**^{½}) / 2 = [**77.963**, **153.037**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.986**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cobalt (ug/L) at P-213C

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **15.151** / **8** = **1.894**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**37.586** - **229.553**/**8**) / (**8**-1))^{½} = **1.127**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **1.894** - **1.895** * **1.127**/**8**^{½} = **1.139**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **1.894** + **1.895** * **1.127**/**8**^{½} = **2.649**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **24** * (**24**-1) / 2 = **276**	Number of sample pairs during trend detection period.
6	S = **-0.203**	Sen's estimator of trend.
7	var(S) = **1625.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**276** ± **2.576** * **1625.333**^{½}) / 2 = [**86.074**, **189.926**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.454**, **-0.034**]	Two-sided confidence interval for slope.
10	UCL(S) < 0	**Significant decreasing trend.**

Worksheet 6 - Assessment Monitoring
Copper (ug/L) at P-213C

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **7.2** / **8** = **0.9**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**6.48** - **51.84**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.9** - **1.895** * **0.0**/**8**^{½} = **0.9**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.9** + **1.895** * **0.0**/**8**^{½} = **0.9**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **21** * (**21**-1) / 2 = **210**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **279.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**210** ± **2.576** * **279.667**^{½}) / 2 = [**83.46**, **126.54**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Lead (ug/L) at P-213C

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.96** / **8** = **0.12**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.115** - **0.922**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.12** - **1.895** * **0.0**/**8**^{½} = **0.12**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.12** + **1.895** * **0.0**/**8**^{½} = **0.12**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **21** * (**21**-1) / 2 = **210**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **399.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**210** ± **2.576** * **399.667**^{½}) / 2 = [**79.251**, **130.749**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Nickel (ug/L) at P-213C

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **60.21** / **8** = **7.526**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**570.125** - **3625.244**/**8**) / (**8**-1))^{½} = **4.088**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **7.526** - **1.895** * **4.088**/**8**^{½} = **4.788**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **7.526** + **1.895** * **4.088**/**8**^{½} = **10.264**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **-0.164**	Sen's estimator of trend.
7	var(S) = **1253.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **1253.667**^{½}) / 2 = [**69.896**, **161.104**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.952**, **0.071**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Selenium (ug/L) at P-213C

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **4.0** / **8** = **0.5**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**2.0** - **16.0**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.5** - **1.895** * **0.0**/**8**^{½} = **0.5**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.5** + **1.895** * **0.0**/**8**^{½} = **0.5**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **21** * (**21**-1) / 2 = **210**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**210** ± **2.576** * **0.0**^{½}) / 2 = [**105.0**, **105.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Silver (ug/L) at P-213C

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.445** / **8** = **0.306**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1.562** - **5.978**/**8**) / (**8**-1))^{½} = **0.341**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.306** - **1.895** * **0.341**/**8**^{½} = **0.077**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.306** + **1.895** * **0.341**/**8**^{½} = **0.534**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **21** * (**21**-1) / 2 = **210**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **399.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**210** ± **2.576** * **399.667**^{½}) / 2 = [**79.251**, **130.749**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Thallium (ug/L) at P-213C

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.04** / **8** = **0.13**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.135** - **1.082**/**8**) / (**8**-1))^{½} = **8.76x10^{-10}**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.13** - **1.895** * **8.76x10^{-10}**/**8**^{½} = **0.13**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.13** + **1.895** * **8.76x10^{-10}**/**8**^{½} = **0.13**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **21** * (**21**-1) / 2 = **210**	Number of sample pairs during trend detection period.
6	S = **-0.012**	Sen's estimator of trend.
7	var(S) = **884.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**210** ± **2.576** * **884.0**^{½}) / 2 = [**66.705**, **143.295**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.024**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Vanadium (ug/L) at P-213C

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **3.36** / **8** = **0.42**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1.411** - **11.29**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.42** - **1.895** * **0.0**/**8**^{½} = **0.42**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.42** + **1.895** * **0.0**/**8**^{½} = **0.42**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **21** * (**21**-1) / 2 = **210**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **146.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**210** ± **2.576** * **146.667**^{½}) / 2 = [**89.402**, **120.598**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Vinyl chloride (ug/L) at P-213C

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.72** / **8** = **0.09**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.065** - **0.518**/**8**) / (**8**-1))^{½} = **1.03x10^{-9}**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.09** - **1.895** * **1.03x10^{-9}**/**8**^{½} = **0.09**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.09** + **1.895** * **1.03x10^{-9}**/**8**^{½} = **0.09**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **21** * (**21**-1) / 2 = **210**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**210** ± **2.576** * **0.0**^{½}) / 2 = [**105.0**, **105.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Zinc (ug/L) at P-213C

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **40.0** / **8** = **5.0**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**200.0** - **1600.0**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **5.0** - **1.895** * **0.0**/**8**^{½} = **5.0**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **5.0** + **1.895** * **0.0**/**8**^{½} = **5.0**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **21** * (**21**-1) / 2 = **210**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **279.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**210** ± **2.576** * **279.667**^{½}) / 2 = [**83.46**, **126.54**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Antimony (ug/L) at P-214C

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.32** / **8** = **0.29**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.673** - **5.382**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.29** - **1.895** * **0.0**/**8**^{½} = **0.29**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.29** + **1.895** * **0.0**/**8**^{½} = **0.29**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **24** * (**24**-1) / 2 = **276**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **528.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**276** ± **2.576** * **528.667**^{½}) / 2 = [**108.385**, **167.615**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Arsenic (ug/L) at P-214C

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.688** / **8** = **0.336**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.903** - **7.225**/**8**) / (**8**-1))^{½} = **6.19**x**10**$^{-9}$	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.336** - **1.895** * **6.19**x**10**$^{-9}$/**8**^{½} = **0.336**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.336** + **1.895** * **6.19**x**10**$^{-9}$/**8**^{½} = **0.336**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **24** * (**24**-1) / 2 = **276**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**276** ± **2.576** * **0.0**^{½}) / 2 = [**138.0**, **138.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Barium (ug/L) at P-214C

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **821.1** / **8** = **102.638**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**110829.61** - **674205.21**/**8**) / (**8**-1))^{½} = **61.591**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **102.638** - **1.895** * **61.591**/**8**^{½} = **61.383**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **102.638** + **1.895** * **61.591**/**8**^{½} = **143.892**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **24** * (**24**-1) / 2 = **276**	Number of sample pairs during trend detection period.
6	S = **0.457**	Sen's estimator of trend.
7	var(S) = **1624.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**276** ± **2.576** * **1624.333**^{½}) / 2 = [**86.09**, **189.91**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.145**, **13.546**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Beryllium (ug/L) at P-214C

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.08** / **8** = **0.135**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.146** - **1.166**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.135** - **1.895** * **0.0**/**8**^{½} = **0.135**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.135** + **1.895** * **0.0**/**8**^{½} = **0.135**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **24** * (**24**-1) / 2 = **276**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**276** ± **2.576** * **0.0**^{½}) / 2 = [**138.0**, **138.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cadmium (ug/L) at P-214C

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.24** / **8** = **0.03**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.007** - **0.058**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.03** - **1.895** * **0.0**/**8**^{½} = **0.03**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.03** + **1.895** * **0.0**/**8**^{½} = **0.03**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **25** * (**25**-1) / 2 = **300**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **208.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**300** ± **2.576** * **208.0**^{½}) / 2 = [**131.424**, **168.576**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Chromium (ug/L) at P-214C

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **4.4** / **8** = **0.55**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**2.42** - **19.36**/**8**) / (**8**-1))^{½} = **1.17**x**10**$^{-8}$	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.55** - **1.895** * **1.17**x**10**$^{-8}$/**8**^{½} = **0.55**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.55** + **1.895** * **1.17**x**10**$^{-8}$/**8**^{½} = **0.55**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **25** * (**25**-1) / 2 = **300**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **1016.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**300** ± **2.576** * **1016.333**^{½}) / 2 = [**108.939**, **191.061**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cobalt (ug/L) at P-214C

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.364** / **8** = **0.046**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.017** - **0.132**/**8**) / (**8**-1))^{½} = **6.33**x**10**$^{-10}$	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.046** - **1.895** * **6.33**x**10**$^{-10}$/**8**^{½} = **0.045**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.046** + **1.895** * **6.33**x**10**$^{-10}$/**8**^{½} = **0.046**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **24** * (**24**-1) / 2 = **276**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **928.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**276** ± **2.576** * **928.333**^{½}) / 2 = [**98.756**, **177.244**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Copper (ug/L) at P-214C

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **7.2** / **8** = **0.9**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**6.48** - **51.84**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.9** - **1.895** * **0.0**/**8**^{½} = **0.9**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.9** + **1.895** * **0.0**/**8**^{½} = **0.9**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **24** * (**24**-1) / 2 = **276**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **191.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**276** ± **2.576** * **191.667**^{½}) / 2 = [**120.168**, **155.832**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Lead (ug/L) at P-214C

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.675** / **8** = **0.209**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.798** - **2.806**/**8**) / (**8**-1))^{½} = **0.253**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.209** - **1.895** * **0.253**/**8**^{½} = **0.04**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.209** + **1.895** * **0.253**/**8**^{½} = **0.379**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **24** * (**24**-1) / 2 = **276**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **191.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**276** ± **2.576** * **191.667**^{½}) / 2 = [**120.168**, **155.832**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Nickel (ug/L) at P-214C

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **7.6** / **8** = **0.95**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**7.22** - **57.76**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.95** - **1.895** * **0.0**/**8**^{½} = **0.95**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.95** + **1.895** * **0.0**/**8**^{½} = **0.95**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **24** * (**24**-1) / 2 = **276**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **675.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**276** ± **2.576** * **675.333**^{½}) / 2 = [**104.529**, **171.471**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Selenium (ug/L) at P-214C

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **4.0** / **8** = **0.5**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**2.0** - **16.0**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.5** - **1.895** * **0.0**/**8**^{½} = **0.5**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.5** + **1.895** * **0.0**/**8**^{½} = **0.5**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **24** * (**24**-1) / 2 = **276**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**276** ± **2.576** * **0.0**^{½}) / 2 = [**138.0**, **138.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Silver (ug/L) at P-214C

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.48** / **8** = **0.185**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.274** - **2.19**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.185** - **1.895** * **0.0**/**8**^{½} = **0.185**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.185** + **1.895** * **0.0**/**8**^{½} = **0.185**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **24** * (**24**-1) / 2 = **276**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **367.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**276** ± **2.576** * **367.667**^{½}) / 2 = [**113.303**, **162.697**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Thallium (ug/L) at P-214C

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **5.93** / **8** = **0.741**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**25.319** - **35.165**/**8**) / (**8**-1))^{½} = **1.729**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.741** - **1.895** * **1.729**/**8**^{½} = **0.0**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.741** + **1.895** * **1.729**/**8**^{½} = **1.899**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **25** * (**25**-1) / 2 = **300**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **399.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**300** ± **2.576** * **399.667**^{½}) / 2 = [**124.251**, **175.749**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Vanadium (ug/L) at P-214C

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **8.23** / **8** = **1.029**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**29.219** - **67.733**/**8**) / (**8**-1))^{½} = **1.722**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **1.029** - **1.895** * **1.722**/**8**^{½} = **0.0**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **1.029** + **1.895** * **1.722**/**8**^{½} = **2.182**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **24** * (**24**-1) / 2 = **276**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **367.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**276** ± **2.576** * **367.667**^{½}) / 2 = [**113.303**, **162.697**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Vinyl chloride (ug/L) at P-214C

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.72** / **8** = **0.09**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.065** - **0.518**/**8**) / (**8**-1))^{½} = **1.03x10^{-9}**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.09** - **1.895** * **1.03x10^{-9}**/**8**^{½} = **0.09**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.09** + **1.895** * **1.03x10^{-9}**/**8**^{½} = **0.09**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **24** * (**24**-1) / 2 = **276**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**276** ± **2.576** * **0.0**^{½}) / 2 = [**138.0**, **138.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Zinc (ug/L) at P-214C

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **40.0** / **8** = **5.0**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**200.0** - **1600.0**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **5.0** - **1.895** * **0.0**/**8**^{½} = **5.0**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **5.0** + **1.895** * **0.0**/**8**^{½} = **5.0**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **24** * (**24**-1) / 2 = **276**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**276** ± **2.576** * **0.0**^{½}) / 2 = [**138.0**, **138.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Antimony (ug/L) at P-215C

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.12** / **8** = **0.265**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.562** - **4.494**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.265** - **1.895** * **0.0**/**8**^{½} = **0.265**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.265** + **1.895** * **0.0**/**8**^{½} = **0.265**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **24** * (**24**-1) / 2 = **276**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **367.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**276** ± **2.576** * **367.667**^{½}) / 2 = [**113.303**, **162.697**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Arsenic (ug/L) at P-215C

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.688** / **8** = **0.336**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.903** - **7.225**/**8**) / (**8**-1))^{½} = **6.19**x**10**$^{-9}$	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.336** - **1.895** * **6.19**x**10**$^{-9}$/**8**^{½} = **0.336**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.336** + **1.895** * **6.19**x**10**$^{-9}$/**8**^{½} = **0.336**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **24** * (**24**-1) / 2 = **276**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**276** ± **2.576** * **0.0**^{½}) / 2 = [**138.0**, **138.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Barium (ug/L) at P-215C

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **431.45** / **8** = **53.931**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**39739.046** - **186149.103**/**8**) / (**8**-1))^{½} = **48.507**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **53.931** - **1.895** * **48.507**/**8**^{½} = **21.441**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **53.931** + **1.895** * **48.507**/**8**^{½} = **86.422**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **24** * (**24**-1) / 2 = **276**	Number of sample pairs during trend detection period.
6	S = **0.198**	Sen's estimator of trend.
7	var(S) = **1620.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**276** ± **2.576** * **1620.667**^{½}) / 2 = [**86.148**, **189.852**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.213**, **3.951**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Beryllium (ug/L) at P-215C

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.08** / **8** = **0.135**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.146** - **1.166**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.135** - **1.895** * **0.0**/**8**^{½} = **0.135**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.135** + **1.895** * **0.0**/**8**^{½} = **0.135**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **24** * (**24**-1) / 2 = **276**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**276** ± **2.576** * **0.0**^{½}) / 2 = [**138.0**, **138.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cadmium (ug/L) at P-215C

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.24** / **8** = **0.03**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.007** - **0.058**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.03** - **1.895** * **0.0**/**8**^{½} = **0.03**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.03** + **1.895** * **0.0**/**8**^{½} = **0.03**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **24** * (**24**-1) / 2 = **276**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**276** ± **2.576** * **0.0**^{½}) / 2 = [**138.0**, **138.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Chromium (ug/L) at P-215C

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **18.42** / **8** = **2.303**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**128.029** - **339.296**/**8**) / (**8**-1))^{½} = **3.497**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **2.303** - **1.895** * **3.497**/**8**^{½} = **0.0**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **2.303** + **1.895** * **3.497**/**8**^{½} = **4.645**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **24** * (**24**-1) / 2 = **276**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **528.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**276** ± **2.576** * **528.667**^{½}) / 2 = [**108.385**, **167.615**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cobalt (ug/L) at P-215C

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.161** / **8** = **0.27**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1.422** - **4.67**/**8**) / (**8**-1))^{½} = **0.346**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.27** - **1.895** * **0.346**/**8**^{½} = **0.038**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.27** + **1.895** * **0.346**/**8**^{½} = **0.502**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **24** * (**24**-1) / 2 = **276**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **1412.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**276** ± **2.576** * **1412.667**^{½}) / 2 = [**89.59**, **186.41**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.008**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Copper (ug/L) at P-215C

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **17.42** / **8** = **2.178**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**77.188** - **303.456**/**8**) / (**8**-1))^{½} = **2.368**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **2.178** - **1.895** * **2.368**/**8**^{½} = **0.591**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **2.178** + **1.895** * **2.368**/**8**^{½} = **3.764**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **25** * (**25**-1) / 2 = **300**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **575.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**300** ± **2.576** * **575.667**^{½}) / 2 = [**119.097**, **180.903**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Lead (ug/L) at P-215C

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.96** / **8** = **0.12**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.115** - **0.922**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.12** - **1.895** * **0.0**/**8**^{½} = **0.12**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.12** + **1.895** * **0.0**/**8**^{½} = **0.12**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **24** * (**24**-1) / 2 = **276**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **367.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**276** ± **2.576** * **367.667**^{½}) / 2 = [**113.303**, **162.697**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Mercury (ug/L) at P-215C

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.232** / **5** = **0.046**	Compute the mean of the last 5 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.011** - **0.054**/**5**) / (**5**-1))^{½} = **0.0**	Compute sd of the last 5 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.046** - **2.132** * **0.0**/**5**^{½} = **0.046**	Compute lower confidence limit for the mean of the last 5 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.046** + **2.132** * **0.0**/**5**^{½} = **0.046**	Compute upper confidence limit for the mean of the last 5 measurements.
5	N' = **N** * (**N**-1) / 2 = **5** * (**5**-1) / 2 = **10**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**10** ± **2.576** * **0.0**^{½}) / 2 = [**5.0**, **5.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Nickel (ug/L) at P-215C

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **7.6** / **8** = **0.95**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**7.22** - **57.76**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.95** - **1.895** * **0.0**/**8**^{½} = **0.95**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.95** + **1.895** * **0.0**/**8**^{½} = **0.95**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **24** * (**24**-1) / 2 = **276**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **808.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**276** ± **2.576** * **808.333**^{½}) / 2 = [**101.381**, **174.619**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Selenium (ug/L) at P-215C

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **4.0** / **8** = **0.5**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**2.0** - **16.0**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.5** - **1.895** * **0.0**/**8**^{½} = **0.5**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.5** + **1.895** * **0.0**/**8**^{½} = **0.5**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **24** * (**24**-1) / 2 = **276**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**276** ± **2.576** * **0.0**^{½}) / 2 = [**138.0**, **138.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Silver (ug/L) at P-215C

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.48** / **8** = **0.185**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.274** - **2.19**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.185** - **1.895** * **0.0**/**8**^{½} = **0.185**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.185** + **1.895** * **0.0**/**8**^{½} = **0.185**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **24** * (**24**-1) / 2 = **276**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **367.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**276** ± **2.576** * **367.667**^{½}) / 2 = [**113.303**, **162.697**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Thallium (ug/L) at P-215C

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **7.67** / **8** = **0.959**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**45.816** - **58.829**/**8**) / (**8**-1))^{½} = **2.344**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.959** - **1.895** * **2.344**/**8**^{½} = **0.0**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.959** + **1.895** * **2.344**/**8**^{½} = **2.529**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **24** * (**24**-1) / 2 = **276**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **528.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**276** ± **2.576** * **528.667**^{½}) / 2 = [**108.385**, **167.615**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Vanadium (ug/L) at P-215C

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **3.36** / **8** = **0.42**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1.411** - **11.29**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.42** - **1.895** * **0.0**/**8**^{½} = **0.42**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.42** + **1.895** * **0.0**/**8**^{½} = **0.42**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **24** * (**24**-1) / 2 = **276**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **191.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**276** ± **2.576** * **191.667**^{½}) / 2 = [**120.168**, **155.832**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Vinyl chloride (ug/L) at P-215C

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.72** / **8** = **0.09**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.065** - **0.518**/**8**) / (**8**-1))^{½} = **1.03x10^{-9}**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.09** - **1.895** * **1.03x10^{-9}**/**8**^{½} = **0.09**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.09** + **1.895** * **1.03x10^{-9}**/**8**^{½} = **0.09**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **24** * (**24**-1) / 2 = **276**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**276** ± **2.576** * **0.0**^{½}) / 2 = [**138.0**, **138.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Zinc (ug/L) at P-215C

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **40.0** / **8** = **5.0**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**200.0** - **1600.0**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **5.0** - **1.895** * **0.0**/**8**^{½} = **5.0**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **5.0** + **1.895** * **0.0**/**8**^{½} = **5.0**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **24** * (**24**-1) / 2 = **276**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**276** ± **2.576** * **0.0**^{½}) / 2 = [**138.0**, **138.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Antimony (ug/L) at P-216C

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.12** / **8** = **0.265**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.562** - **4.494**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.265** - **1.895** * **0.0**/**8**^{½} = **0.265**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.265** + **1.895** * **0.0**/**8**^{½} = **0.265**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **24** * (**24**-1) / 2 = **276**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **367.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**276** ± **2.576** * **367.667**^{½}) / 2 = [**113.303**, **162.697**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Arsenic (ug/L) at P-216C

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.688** / **8** = **0.336**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.903** - **7.225**/**8**) / (**8**-1))^{½} = **6.19**x**10**$^{-9}$	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.336** - **1.895** * **6.19**x**10**$^{-9}$/**8**^{½} = **0.336**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.336** + **1.895** * **6.19**x**10**$^{-9}$/**8**^{½} = **0.336**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **24** * (**24**-1) / 2 = **276**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**276** ± **2.576** * **0.0**^{½}) / 2 = [**138.0**, **138.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Barium (ug/L) at P-216C

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **209.44** / **8** = **26.18**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**7281.391** - **43865.114**/**8**) / (**8**-1))^{½} = **16.028**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **26.18** - **1.895** * **16.028**/**8**^{½} = **15.444**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **26.18** + **1.895** * **16.028**/**8**^{½} = **36.916**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **24** * (**24**-1) / 2 = **276**	Number of sample pairs during trend detection period.
6	S = **0.431**	Sen's estimator of trend.
7	var(S) = **1620.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**276** ± **2.576** * **1620.667**^{½}) / 2 = [**86.148**, **189.852**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.185**, **2.53**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Beryllium (ug/L) at P-216C

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.08** / **8** = **0.135**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.146** - **1.166**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.135** - **1.895** * **0.0**/**8**^{½} = **0.135**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.135** + **1.895** * **0.0**/**8**^{½} = **0.135**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **24** * (**24**-1) / 2 = **276**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**276** ± **2.576** * **0.0**^{½}) / 2 = [**138.0**, **138.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cadmium (ug/L) at P-216C

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.24** / **8** = **0.03**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.007** - **0.058**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.03** - **1.895** * **0.0**/**8**^{½} = **0.03**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.03** + **1.895** * **0.0**/**8**^{½} = **0.03**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **24** * (**24**-1) / 2 = **276**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**276** ± **2.576** * **0.0**^{½}) / 2 = [**138.0**, **138.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Chromium (ug/L) at P-216C

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **62.85** / **8** = **7.856**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1237.863** - **3950.123**/**8**) / (**8**-1))^{½} = **10.31**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **7.856** - **1.895** * **10.31**/**8**^{½} = **0.95**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **7.856** + **1.895** * **10.31**/**8**^{½} = **14.762**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **25** * (**25**-1) / 2 = **300**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **736.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**300** ± **2.576** * **736.667**^{½}) / 2 = [**115.042**, **184.958**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cobalt (ug/L) at P-216C

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.765** / **8** = **0.346**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**2.302** - **7.642**/**8**) / (**8**-1))^{½} = **0.439**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.346** - **1.895** * **0.439**/**8**^{½} = **0.052**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.346** + **1.895** * **0.439**/**8**^{½} = **0.639**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **24** * (**24**-1) / 2 = **276**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **1291.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**276** ± **2.576** * **1291.667**^{½}) / 2 = [**91.71**, **184.29**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.004**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Copper (ug/L) at P-216C

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **12.26** / **8** = **1.533**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**41.192** - **150.308**/**8**) / (**8**-1))^{½} = **1.789**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **1.533** - **1.895** * **1.789**/**8**^{½} = **0.334**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **1.533** + **1.895** * **1.789**/**8**^{½} = **2.731**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **24** * (**24**-1) / 2 = **276**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **191.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**276** ± **2.576** * **191.667**^{½}) / 2 = [**120.168**, **155.832**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Lead (ug/L) at P-216C

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.96** / **8** = **0.12**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.115** - **0.922**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.12** - **1.895** * **0.0**/**8**^{½} = **0.12**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.12** + **1.895** * **0.0**/**8**^{½} = **0.12**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **24** * (**24**-1) / 2 = **276**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **191.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**276** ± **2.576** * **191.667**^{½}) / 2 = [**120.168**, **155.832**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Nickel (ug/L) at P-216C

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **7.6** / **8** = **0.95**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**7.22** - **57.76**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.95** - **1.895** * **0.0**/**8**^{½} = **0.95**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.95** + **1.895** * **0.0**/**8**^{½} = **0.95**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **24** * (**24**-1) / 2 = **276**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **367.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**276** ± **2.576** * **367.667**^{½}) / 2 = [**113.303**, **162.697**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Selenium (ug/L) at P-216C

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **4.0** / **8** = **0.5**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**2.0** - **16.0**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.5** - **1.895** * **0.0**/**8**^{½} = **0.5**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.5** + **1.895** * **0.0**/**8**^{½} = **0.5**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **24** * (**24**-1) / 2 = **276**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **191.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**276** ± **2.576** * **191.667**^{½}) / 2 = [**120.168**, **155.832**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Silver (ug/L) at P-216C

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.48** / **8** = **0.185**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.274** - **2.19**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.185** - **1.895** * **0.0**/**8**^{½} = **0.185**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.185** + **1.895** * **0.0**/**8**^{½} = **0.185**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **24** * (**24**-1) / 2 = **276**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**276** ± **2.576** * **0.0**^{½}) / 2 = [**138.0**, **138.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Thallium (ug/L) at P-216C

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.04** / **8** = **0.13**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.135** - **1.082**/**8**) / (**8**-1))^{½} = **8.76x10^{-10}**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.13** - **1.895** * **8.76x10^{-10}**/**8**^{½} = **0.13**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.13** + **1.895** * **8.76x10^{-10}**/**8**^{½} = **0.13**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **24** * (**24**-1) / 2 = **276**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**276** ± **2.576** * **0.0**^{½}) / 2 = [**138.0**, **138.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Vanadium (ug/L) at P-216C

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **3.36** / **8** = **0.42**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1.411** - **11.29**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.42** - **1.895** * **0.0**/**8**^{½} = **0.42**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.42** + **1.895** * **0.0**/**8**^{½} = **0.42**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **24** * (**24**-1) / 2 = **276**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**276** ± **2.576** * **0.0**^{½}) / 2 = [**138.0**, **138.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

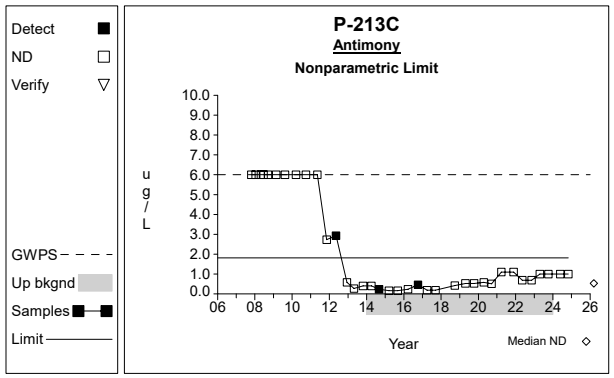
Worksheet 6 - Assessment Monitoring
Vinyl chloride (ug/L) at P-216C

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.72** / **8** = **0.09**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.065** - **0.518**/**8**) / (**8**-1))^{½} = **1.03**x**10**$^{-9}$	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.09** - **1.895** * **1.03**x**10**$^{-9}$/**8**^{½} = **0.09**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.09** + **1.895** * **1.03**x**10**$^{-9}$/**8**^{½} = **0.09**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **24** * (**24**-1) / 2 = **276**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**276** ± **2.576** * **0.0**^{½}) / 2 = [**138.0**, **138.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

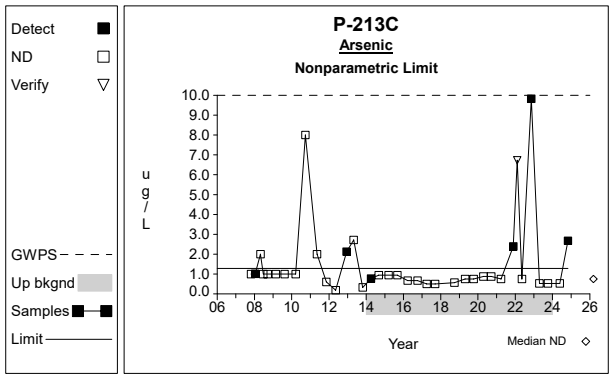
Worksheet 6 - Assessment Monitoring
Zinc (ug/L) at P-216C

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **40.0** / **8** = **5.0**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**200.0** - **1600.0**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **5.0** - **1.895** * **0.0**/**8**^{½} = **5.0**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **5.0** + **1.895** * **0.0**/**8**^{½} = **5.0**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **24** * (**24**-1) / 2 = **276**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **367.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**276** ± **2.576** * **367.667**^{½}) / 2 = [**113.303**, **162.697**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

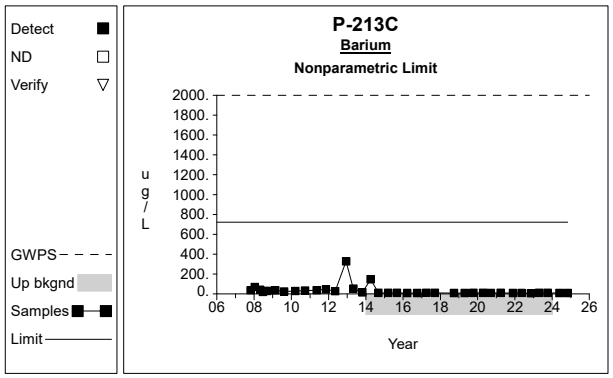
Up vs. Down Prediction Limits



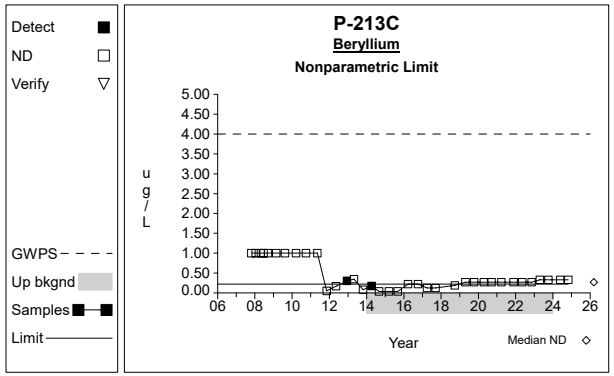
Graph 1



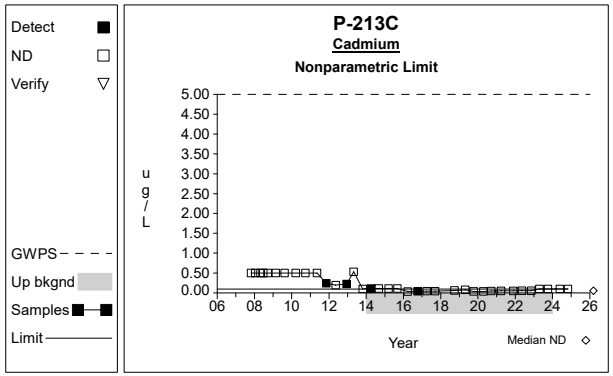
Graph 2



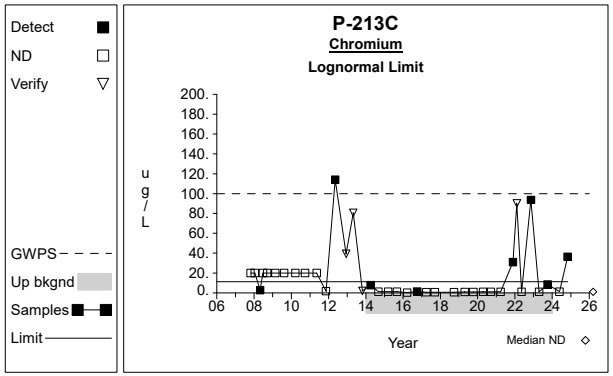
Graph 3



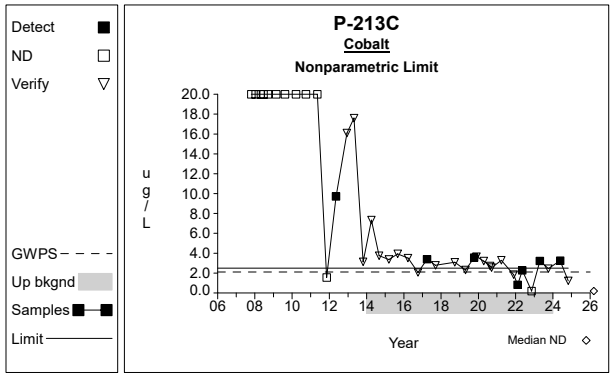
Graph 4



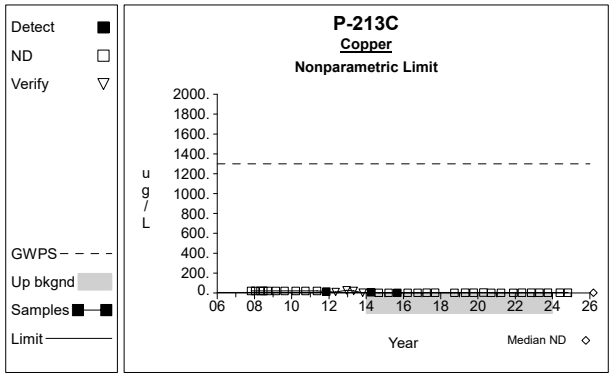
Graph 5



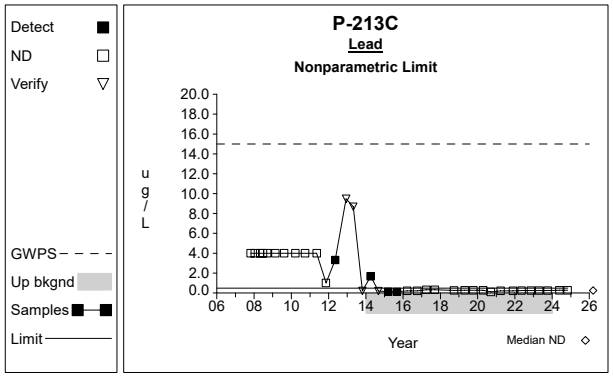
Graph 6



Graph 7

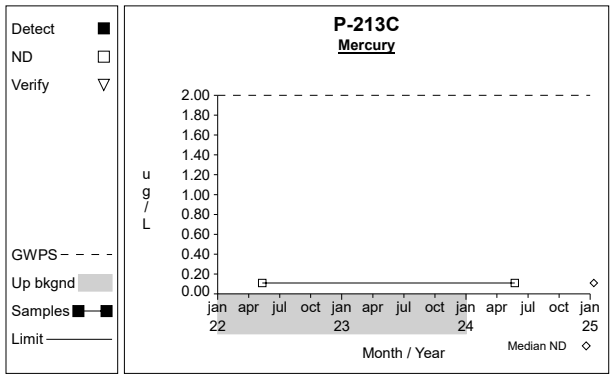


Graph 8

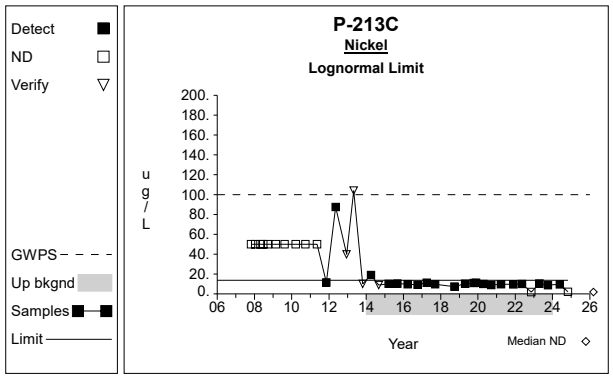


Graph 9

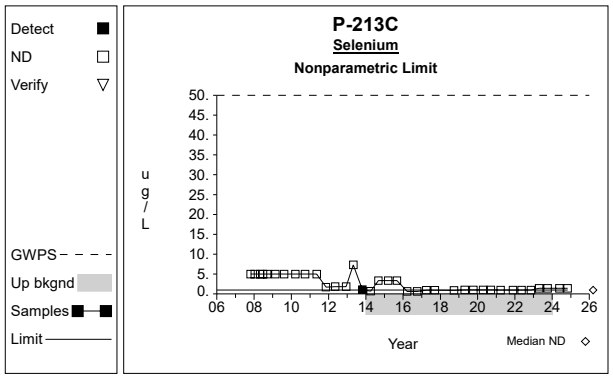
Up vs. Down Prediction Limits



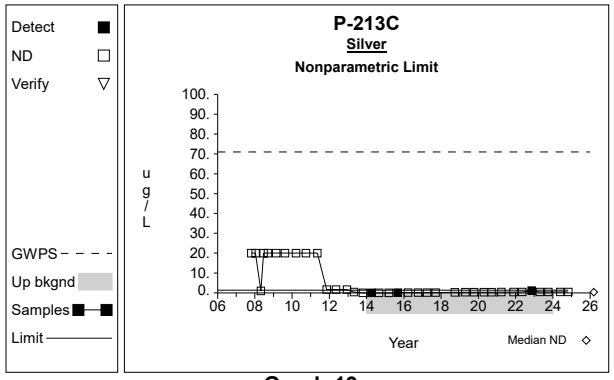
Graph 10



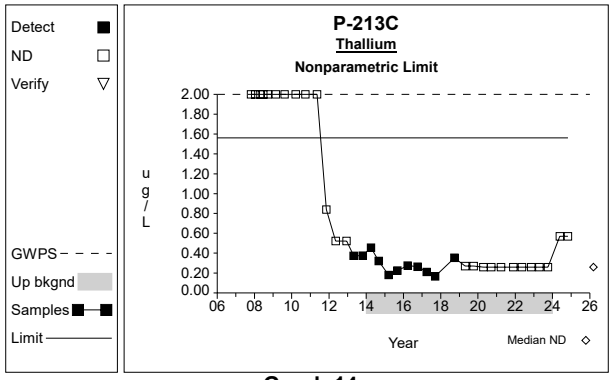
Graph 11



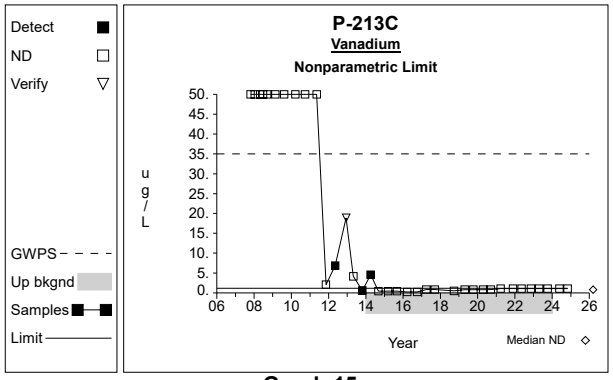
Graph 12



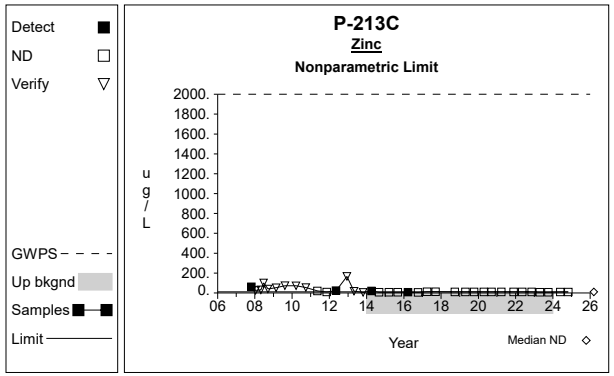
Graph 13



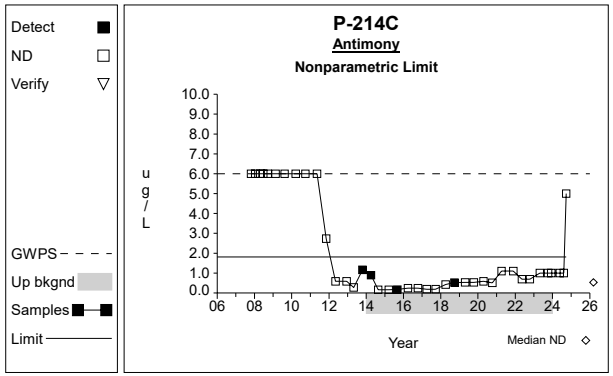
Graph 14



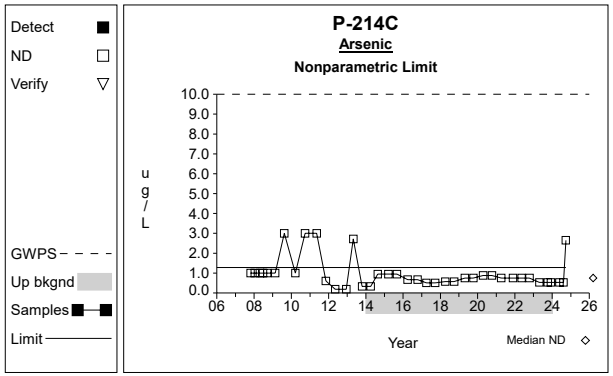
Graph 15



Graph 16

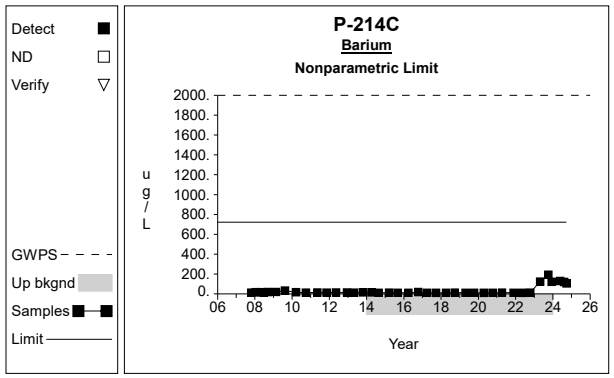


Graph 17

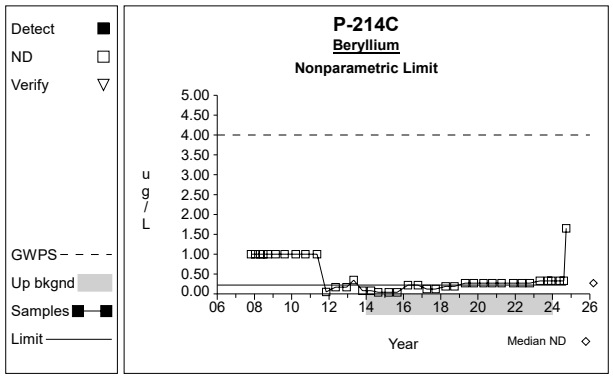


Graph 18

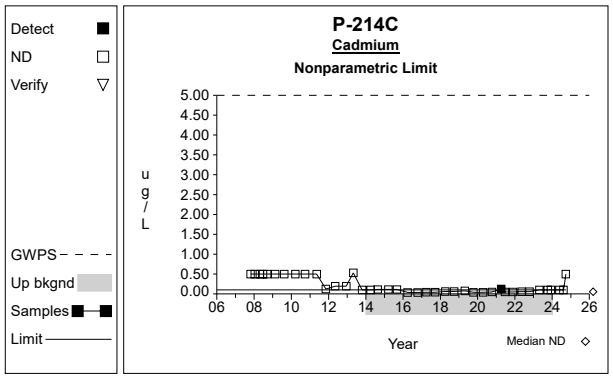
Up vs. Down Prediction Limits



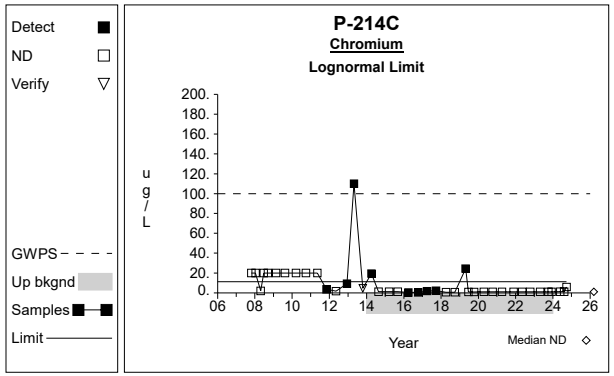
Graph 19



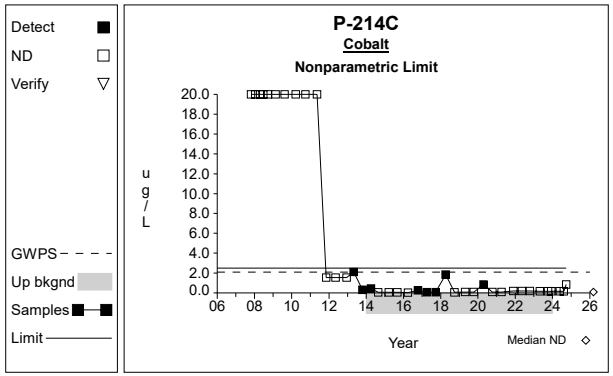
Graph 20



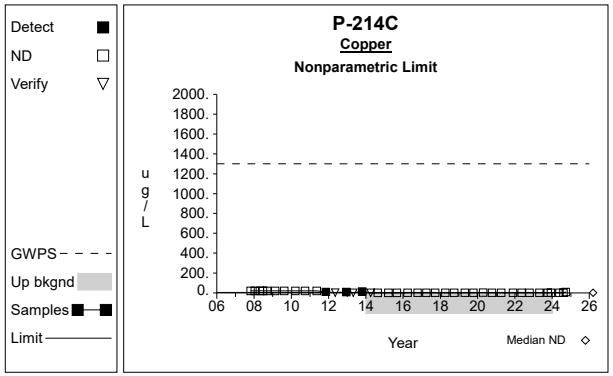
Graph 21



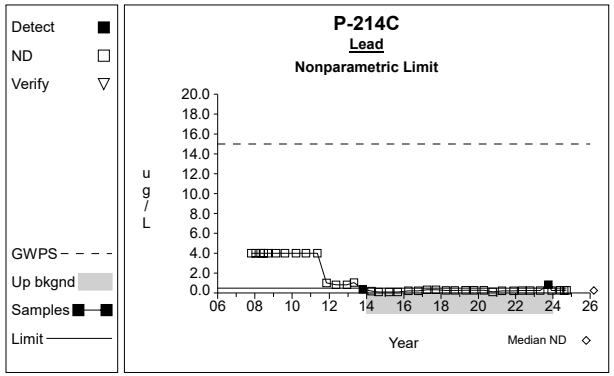
Graph 22



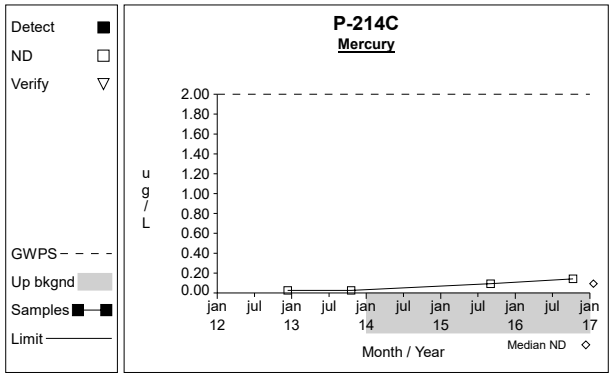
Graph 23



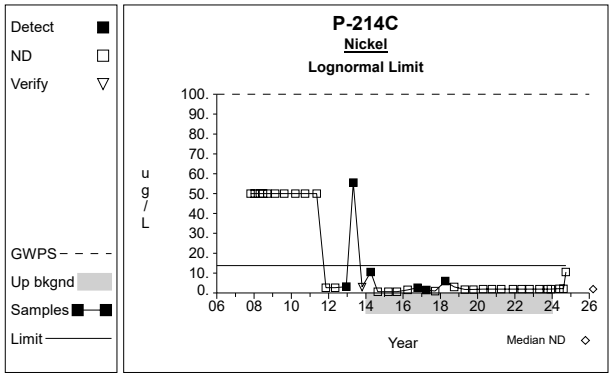
Graph 24



Graph 25

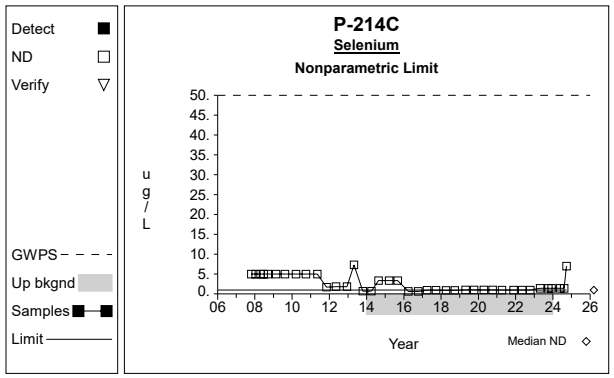


Graph 26

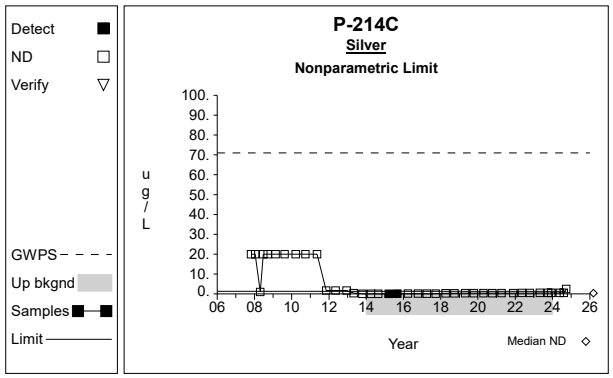


Graph 27

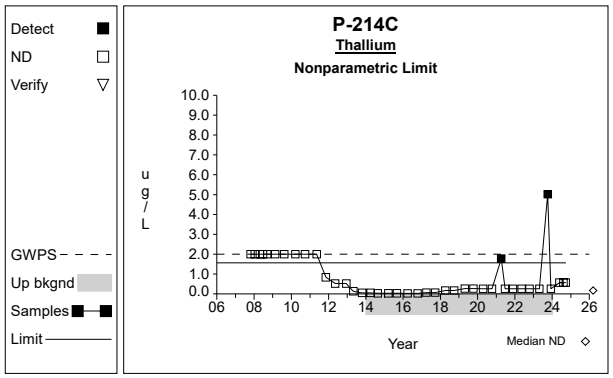
Up vs. Down Prediction Limits



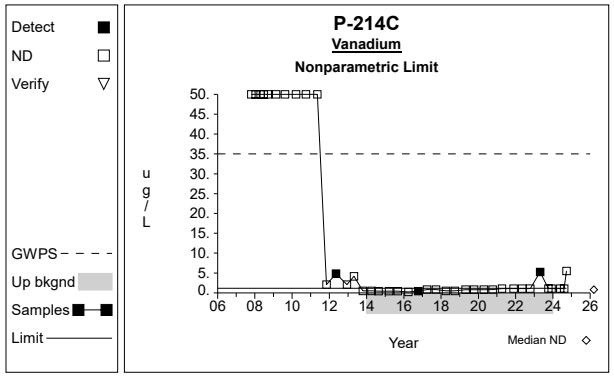
Graph 28



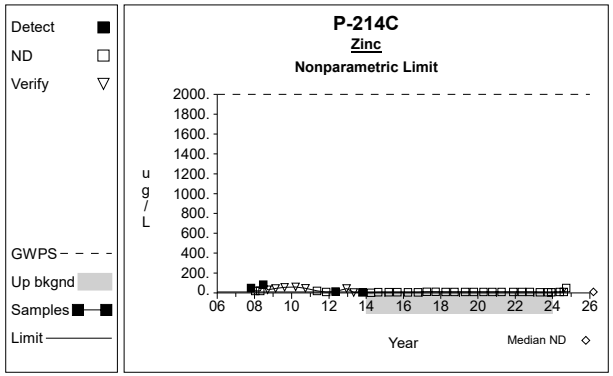
Graph 29



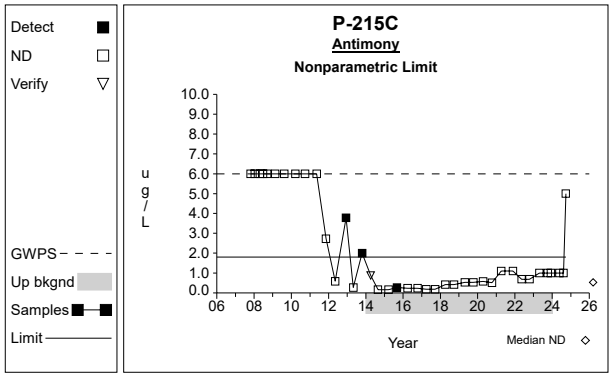
Graph 30



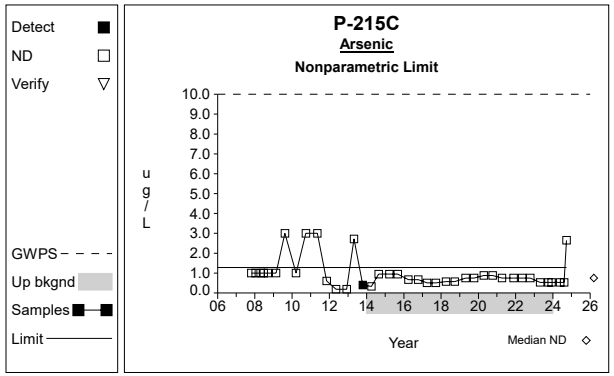
Graph 31



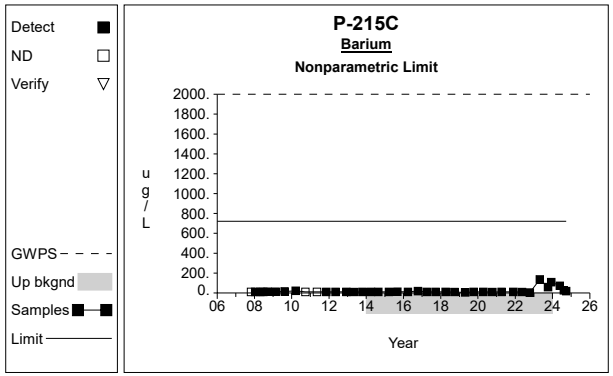
Graph 32



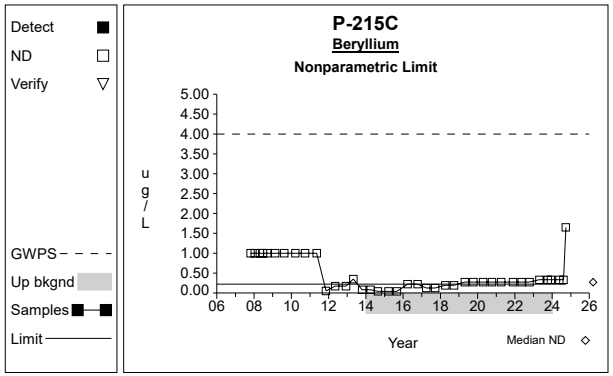
Graph 33



Graph 34

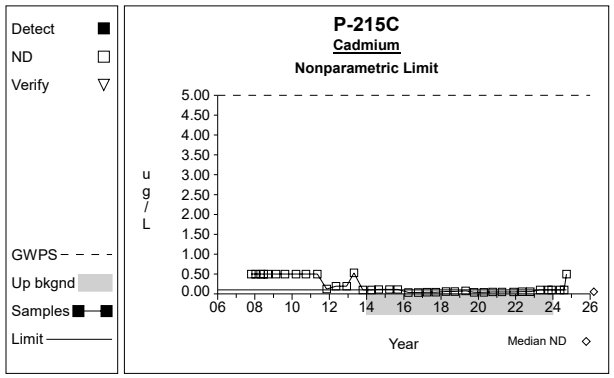


Graph 35

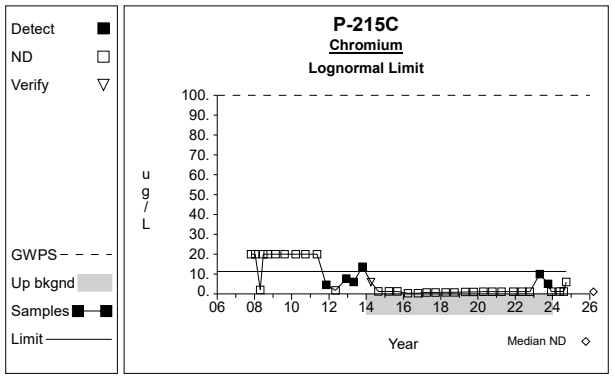


Graph 36

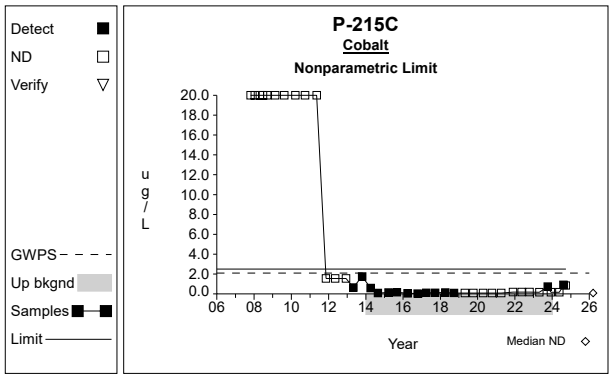
Up vs. Down Prediction Limits



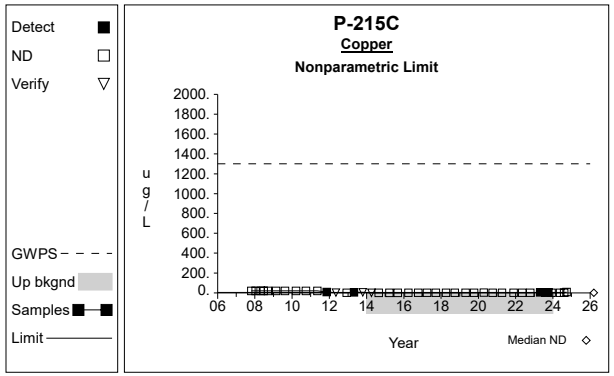
Graph 37



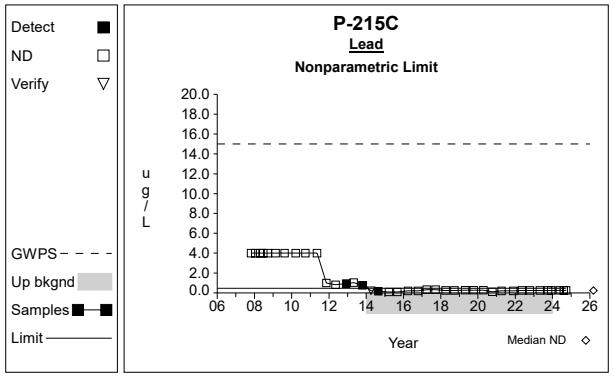
Graph 38



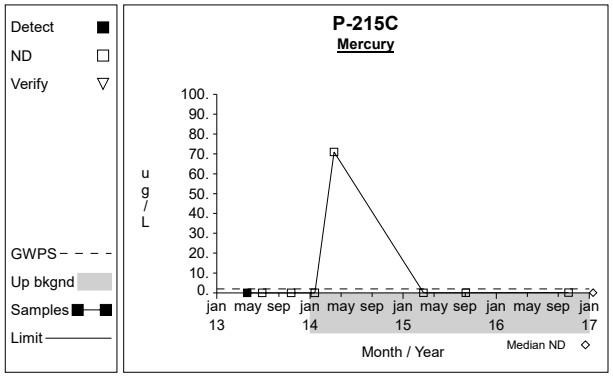
Graph 39



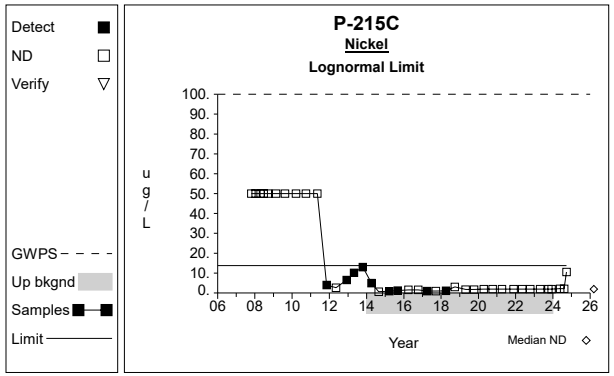
Graph 40



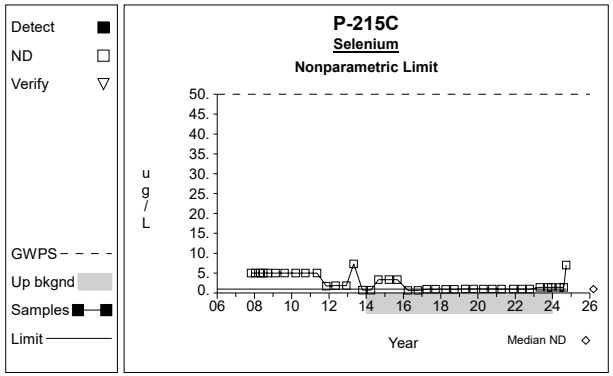
Graph 41



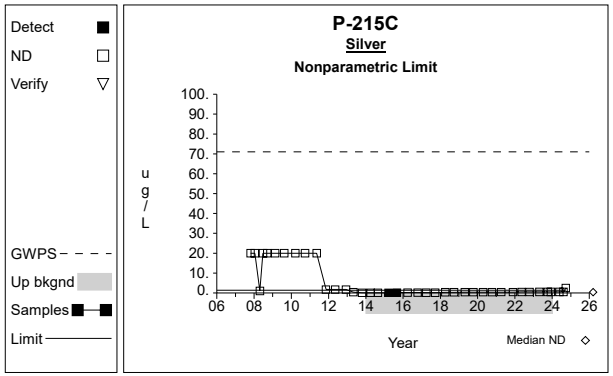
Graph 42



Graph 43

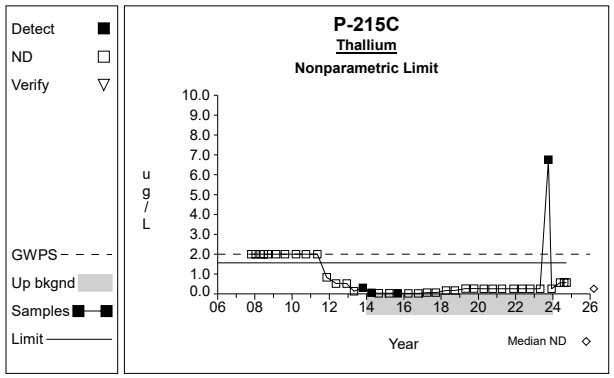


Graph 44

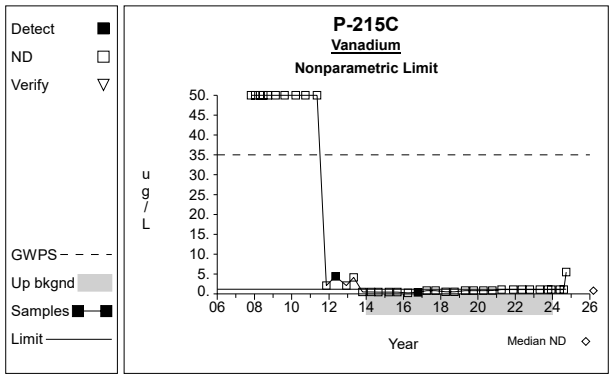


Graph 45

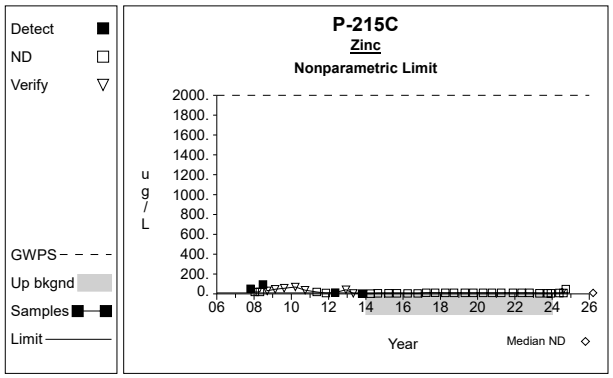
Up vs. Down Prediction Limits



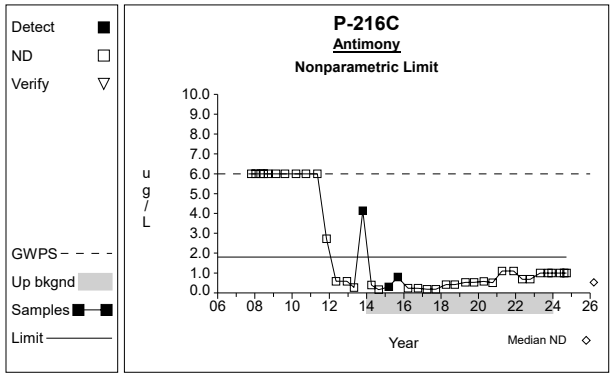
Graph 46



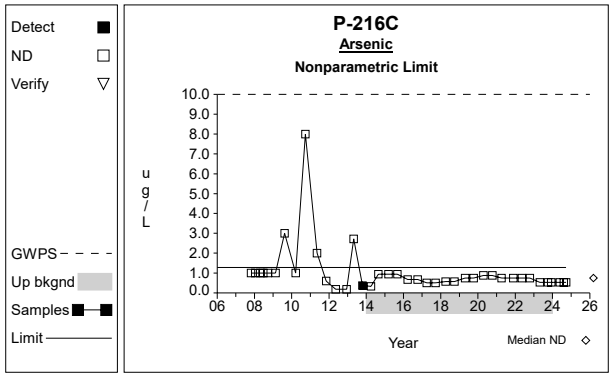
Graph 47



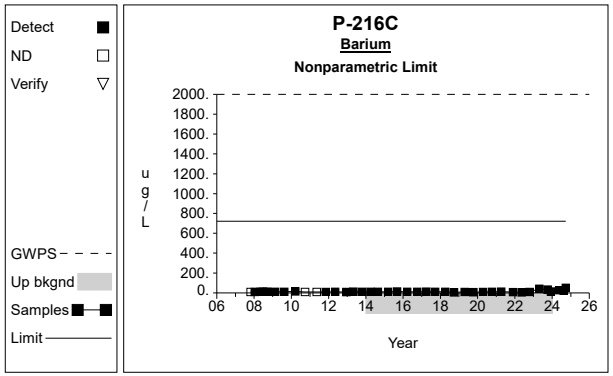
Graph 48



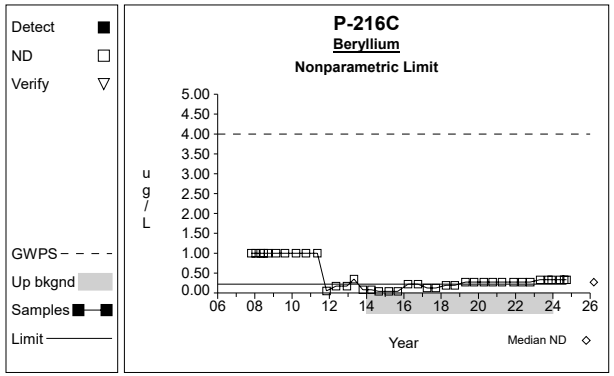
Graph 49



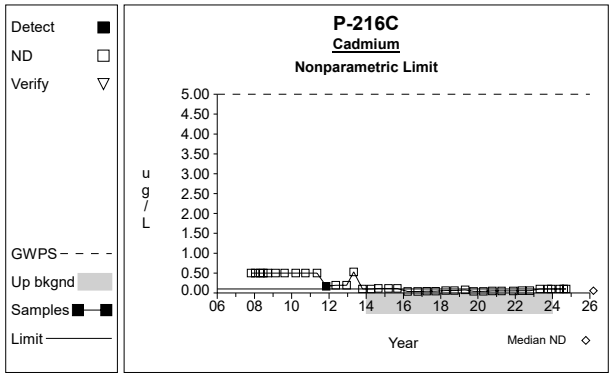
Graph 50



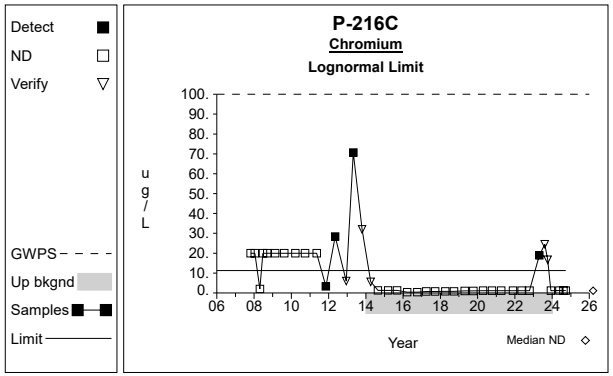
Graph 51



Graph 52

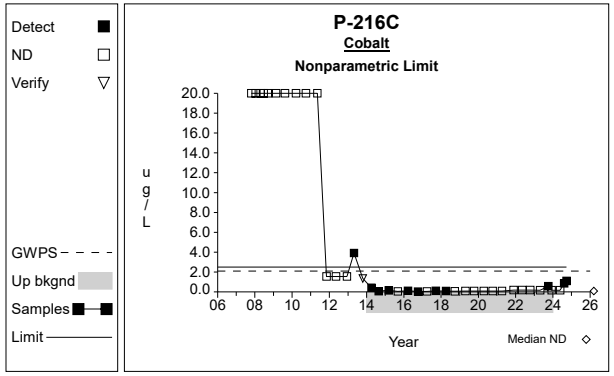


Graph 53

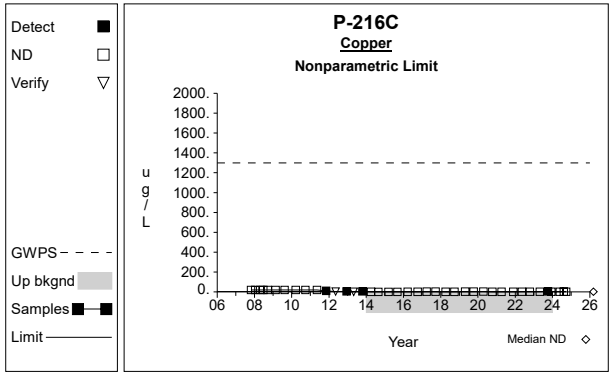


Graph 54

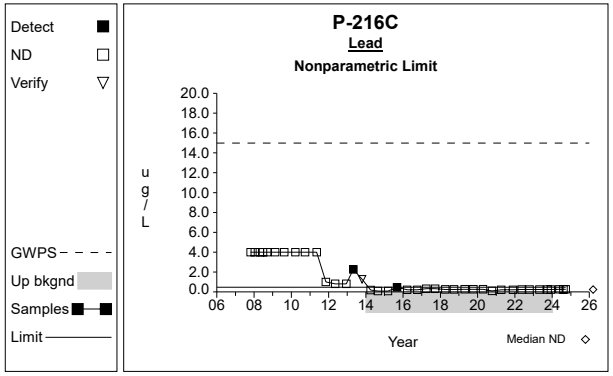
Up vs. Down Prediction Limits



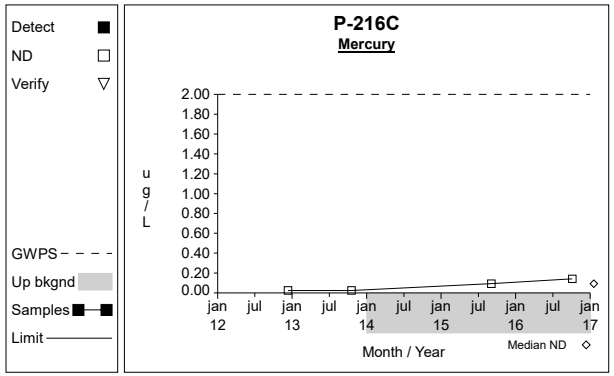
Graph 55



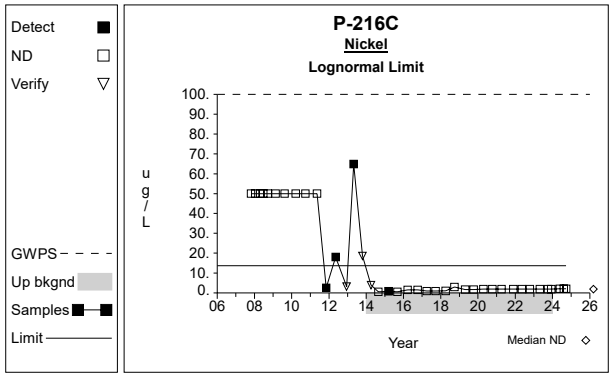
Graph 56



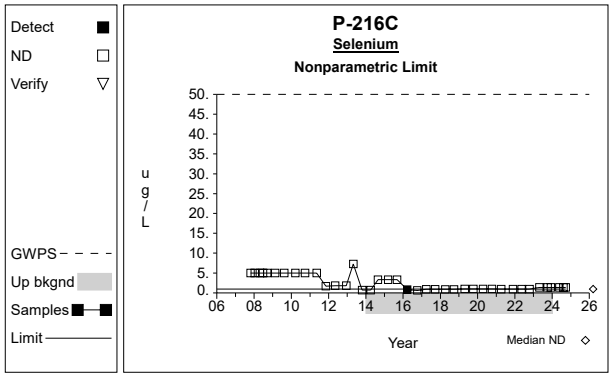
Graph 57



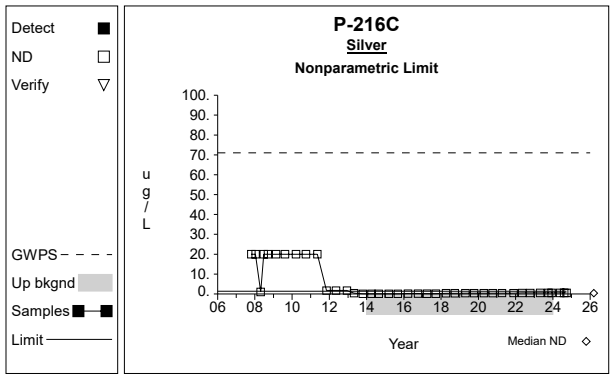
Graph 58



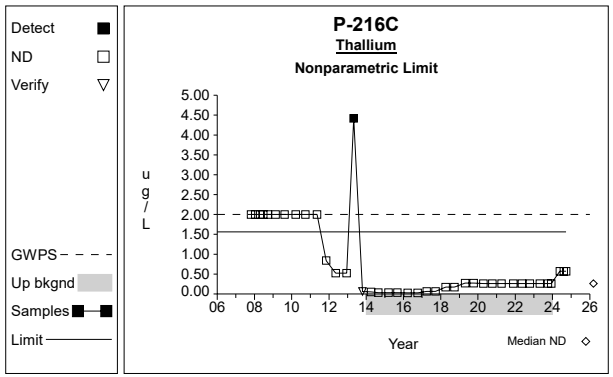
Graph 59



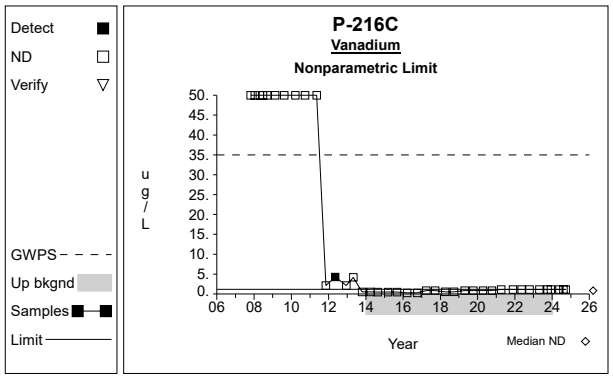
Graph 60



Graph 61

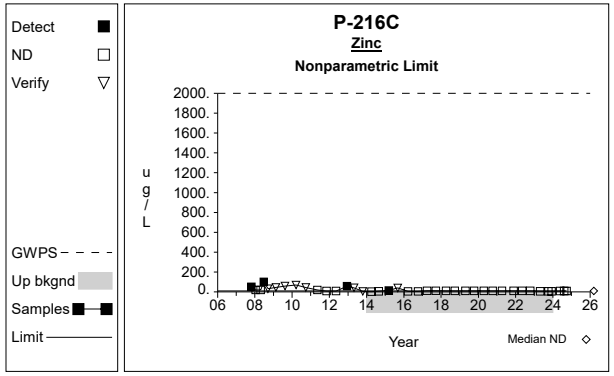


Graph 62



Graph 63

Up vs. Down Prediction Limits



Graph 64

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Antimony (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **1.81**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Arsenic (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **1.28**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Barium (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **722.0**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Beryllium (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **0.221**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Cadmium (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **0.099**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Chromium (ug/L)
Lognormal Prediction Limit

Step	Equation	Description
1	$Y = \log_e(X)$	Transform to natural logarithmic scale.
2	$\overline{Y}_1 = \mathbf{sum[Y_1]} / \mathbf{N_1}$ = **39.089** / **25** = **1.564**	Compute mean of N_1 detected log transformed measurements.
3	$S_{Y_1} = ((\mathbf{sum[Y_1^2]} - \mathbf{sum[Y_1]}^2/\mathbf{N_1}) / (\mathbf{N_1}-1))^{½}$ = ((**85.079**-**1527.934**/**25**) / (**25**-1))^{½} = **0.999**	Compute sd of N_1 detected log transformed measurements.
4	$\overline{Y} = (1 - \mathbf{N_0}/\mathbf{N})\ \overline{Y}_1$ = (1 - **17**/**42**) **1.564** = **0.931**	Use Aitchison's method to adjust mean for presence of nondetects (log scale).
5	$S_Y = [(1 - \mathbf{N_0}/\mathbf{N}) * S_{Y_1}^2 + (\mathbf{N_0}/\mathbf{N}) (1 - (\mathbf{N_0}-1)/(\mathbf{N}-1)) \overline{Y}_1^2]^{½}$ = [(1 - **17**/**42**) * **0.999**^{2} + (**17**/**42**) (1 - (**17**-1)/(**42**-1)) **1.564**^{2}]^{½} = **1.094**	Use Aitchison's method to adjust sd for presence of nondetects (log scale).
6	alpha = $(1-.95^{1/\mathbf{K}})^{1/3}$ = $(1-.95^{1/\mathbf{64}})^{1/3}$ = **0.0929**	Adjusted per comparison false positive rate. Pass initial or 1 of 2 resamples.
7	PL = $\exp[\overline{Y} + \mathbf{t}S_Y(1+1/\mathbf{N})^{½}]$ = exp[**0.931** + (**1.346***1.094)(1+1/**42**)^{½}] = **11.257**	One-sided lognormal prediction limit (t is Student's t on N-1 degrees of freedom and 1-alpha confidence level).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Cobalt (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **2.5**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Copper (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **4.11**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Lead (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **0.474**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Nickel (ug/L)
Lognormal Prediction Limit

Step	Equation	Description
1	$Y = \log_e(X)$	Transform to natural logarithmic scale.
2	$\overline{Y}_1 = \mathbf{sum[Y_1]} / \mathbf{N_1}$ $= \mathbf{40.075} / \mathbf{23}$ $= \mathbf{1.742}$	Compute mean of N_1 detected log transformed measurements.
3	$S_{Y_1} = ((\mathbf{sum[Y_1^2]} - \mathbf{sum[Y_1]}^2/\mathbf{N_1}) / (\mathbf{N_1}-1))^{1/2}$ $= ((\mathbf{98.885} - \mathbf{1606.01}/\mathbf{23}) / (\mathbf{23}-1))^{1/2}$ $= \mathbf{1.149}$	Compute sd of N_1 detected log transformed measurements.
4	$\overline{Y} = (1 - \mathbf{N_0}/\mathbf{N})\ \overline{\mathbf{Y}}_\mathbf{1}$ $= (1 - \mathbf{19}/\mathbf{42})\ \mathbf{1.742}$ $= \mathbf{0.954}$	Use Aitchison's method to adjust mean for presence of nondetects (log scale).
5	$S_Y = [(1 - \mathbf{N_0}/\mathbf{N}) * \mathbf{S_{Y_1}}^2 +$ $(\mathbf{N_0}/\mathbf{N}) (1 - (\mathbf{N_0}-1)/(\mathbf{N}-1)) \overline{\mathbf{Y}}_\mathbf{1}^{\,2}]^{1/2}$ $= [(1 - \mathbf{19}/\mathbf{42}) * \mathbf{1.149}^2 +$ $(\mathbf{19}/\mathbf{42}) (1 - (\mathbf{19}-1)/(\mathbf{42}-1)) \mathbf{1.742}^2]^{1/2}$ $= \mathbf{1.222}$	Use Aitchison's method to adjust sd for presence of nondetects (log scale).
6	$\text{alpha} = (1-.95^{1/\mathbf{K}})^{1/3}$ $= (1-.95^{1/\mathbf{64}})^{1/3}$ $= \mathbf{0.0929}$	Adjusted per comparison false positive rate. Pass initial or 1 of 2 resamples.
7	$PL = \exp[\overline{\mathbf{Y}} + \mathbf{tS_Y}(1+1/\mathbf{N})^{1/2}]$ $= \exp[\mathbf{0.954}$ $+ (\mathbf{1.346}*\mathbf{1.222})(1+1/\mathbf{42})^{1/2}]$ $= \mathbf{13.715}$	One-sided lognormal prediction limit (t is Student's t on N-1 degrees of freedom and 1-alpha confidence level).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Selenium (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	$PL = \text{median}(X)$ $= \mathbf{0.96}$	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Silver (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **1.33**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Thallium (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **1.56**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

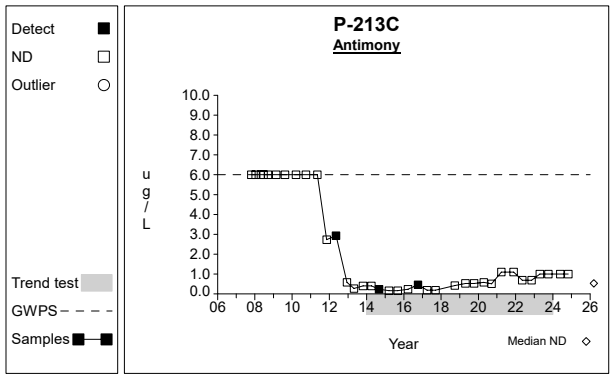
Worksheet 1 - Upgradient vs. Downgradient Comparisons
Vanadium (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **1.17**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

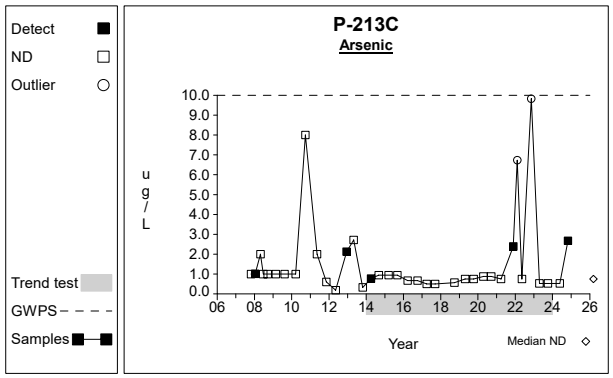
Worksheet 1 - Upgradient vs. Downgradient Comparisons
Zinc (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **10.0**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

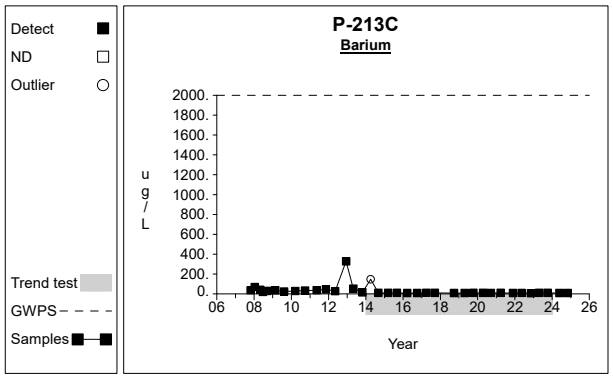
Time Series



Graph 1



Graph 2



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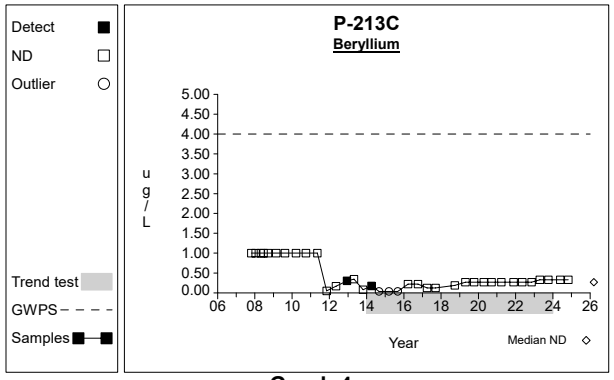
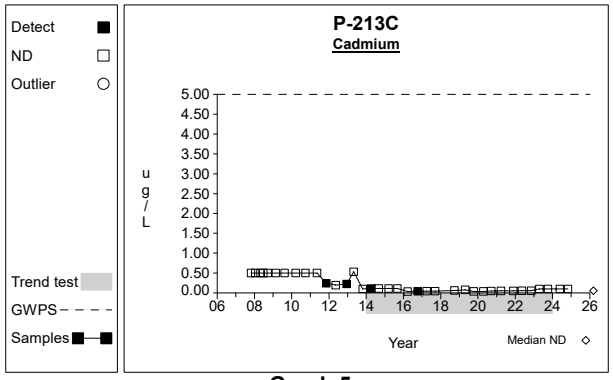


Graph 4



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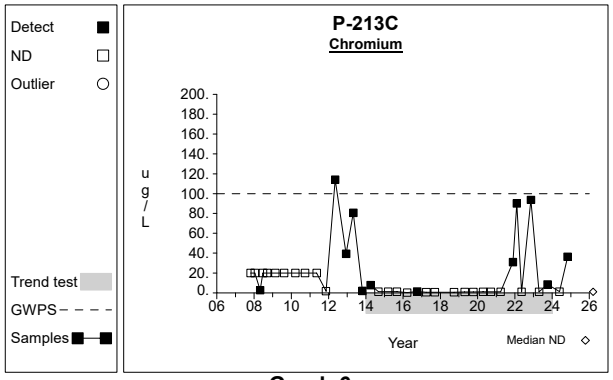

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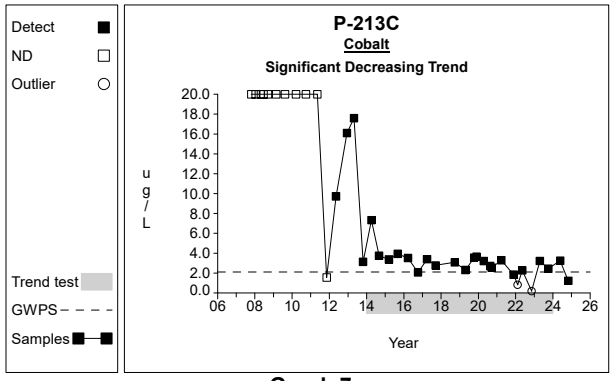

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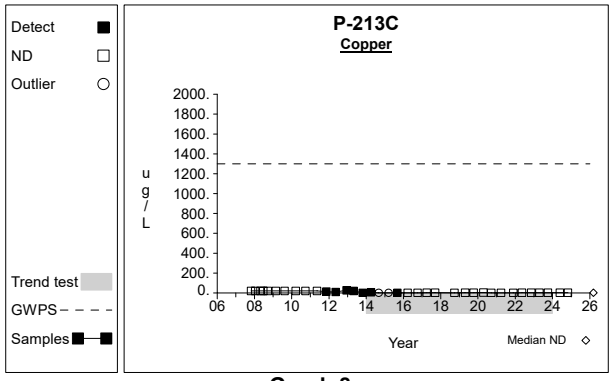

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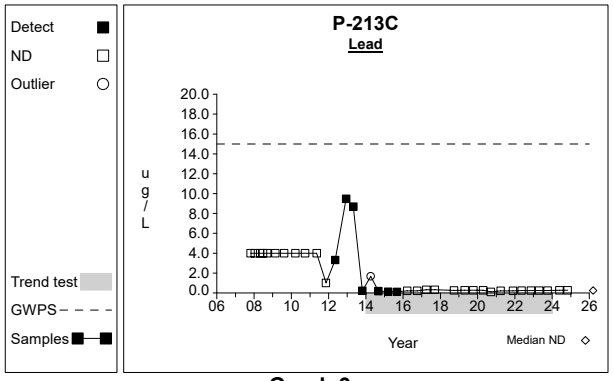
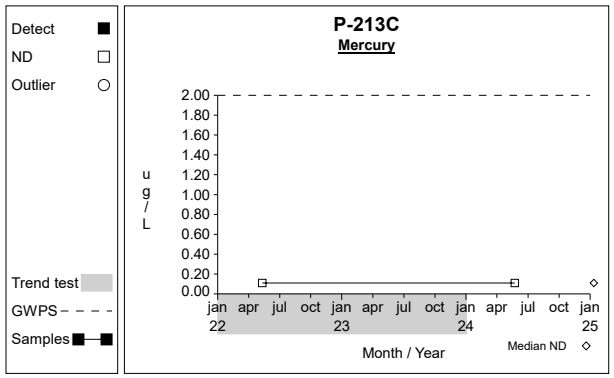
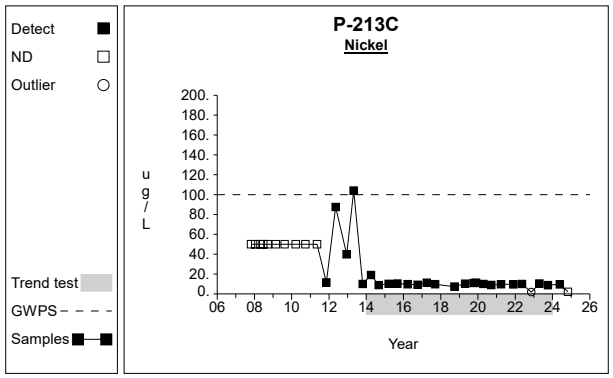


Graph 9

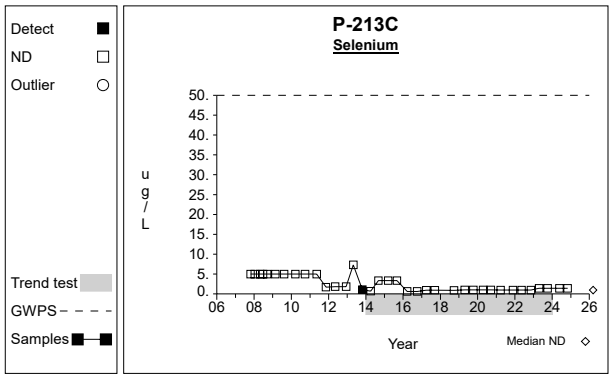
Time Series



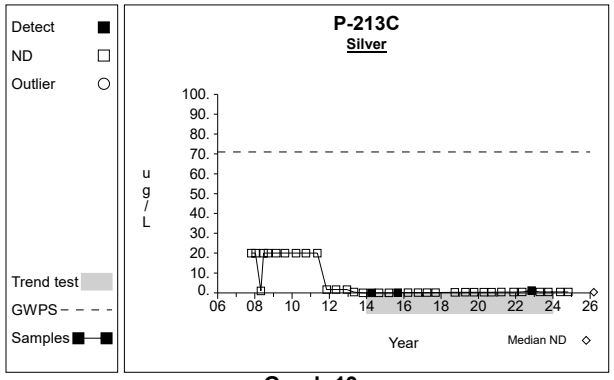
Graph 10



Graph 11



Graph 12



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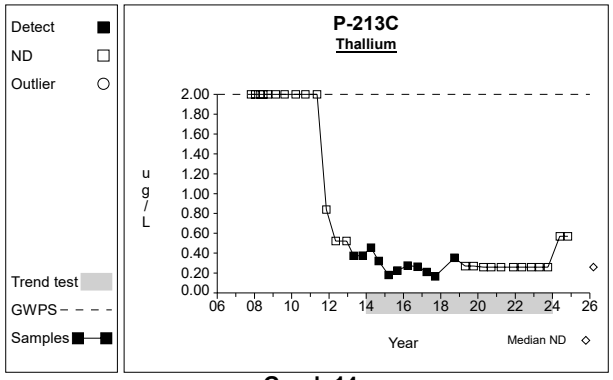
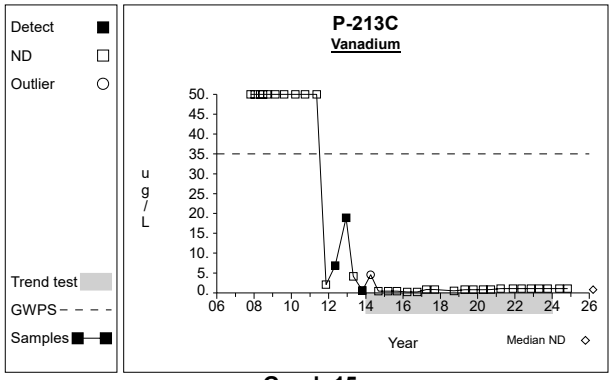


Graph 14



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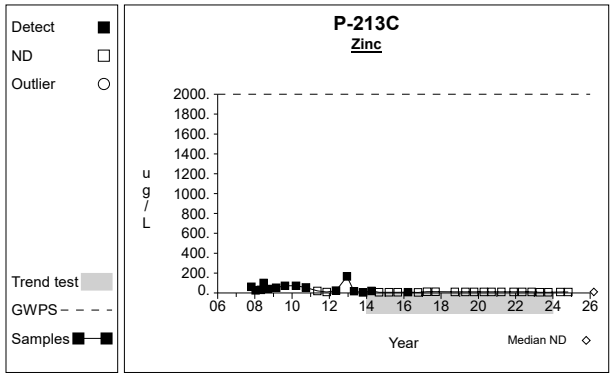

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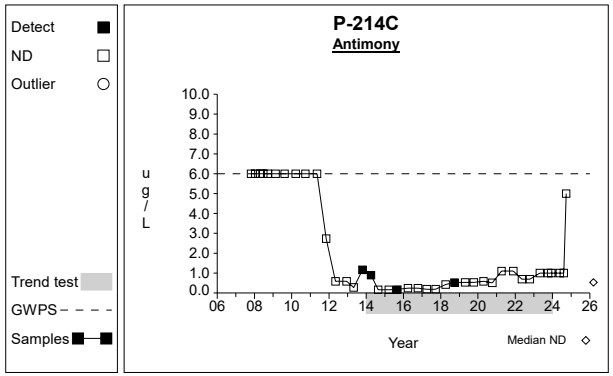

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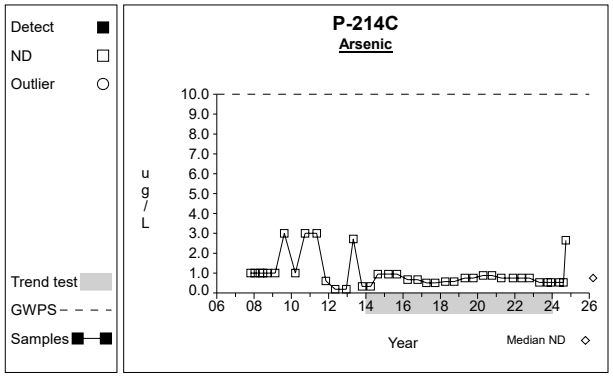
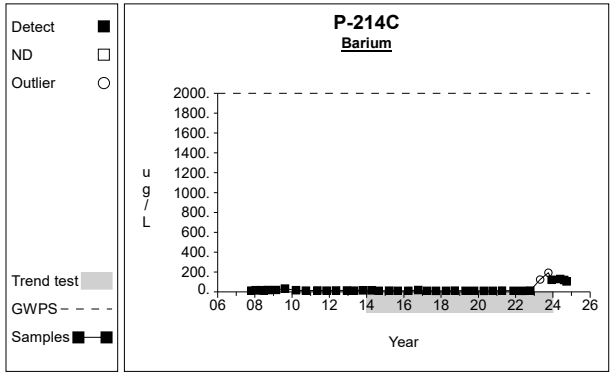
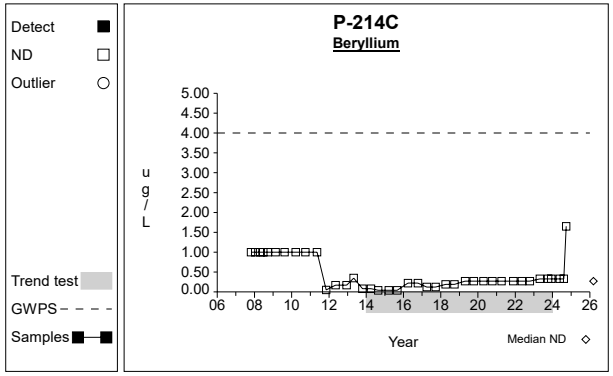


Graph 18

Time Series



Graph 19



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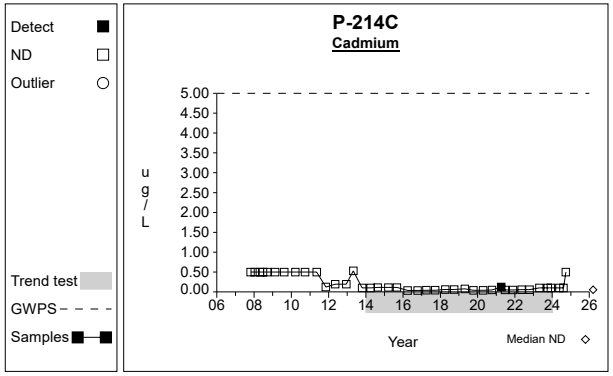

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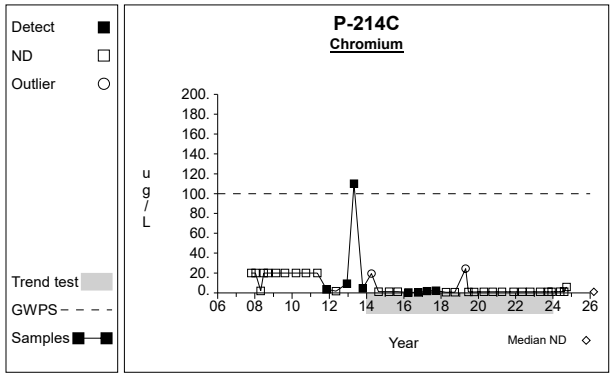
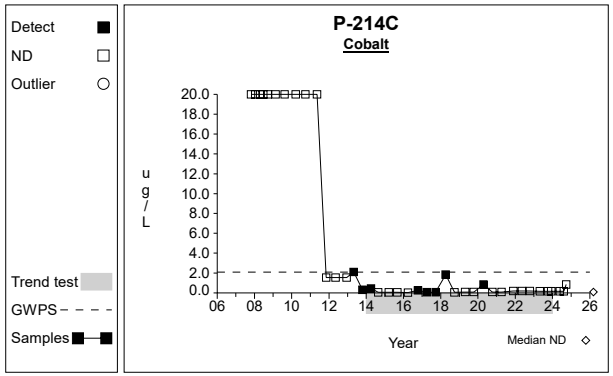
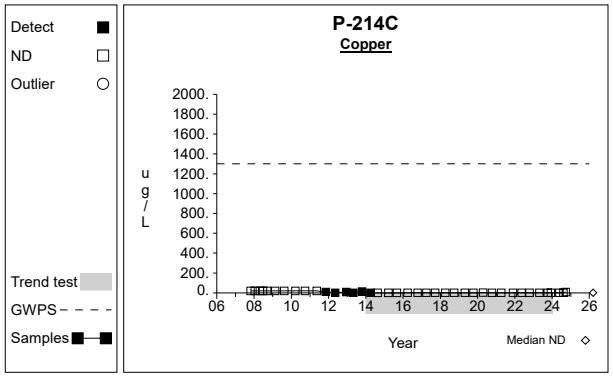


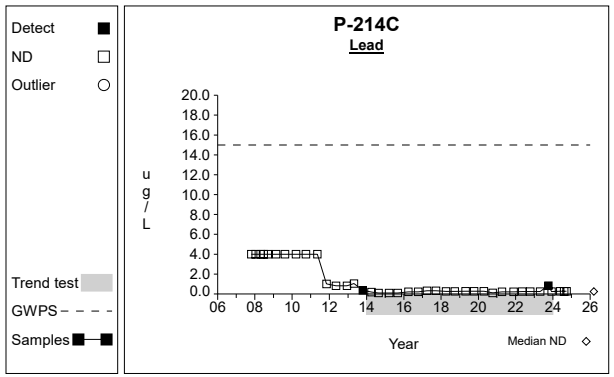
Graph 22



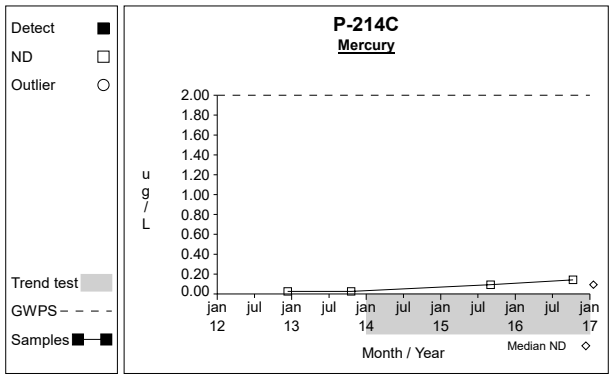
Graph 23



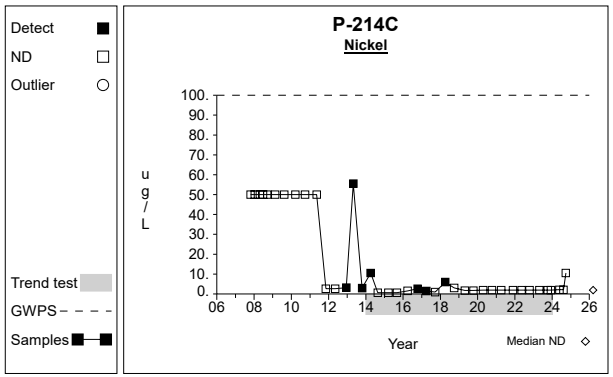
Graph 24



Graph 25

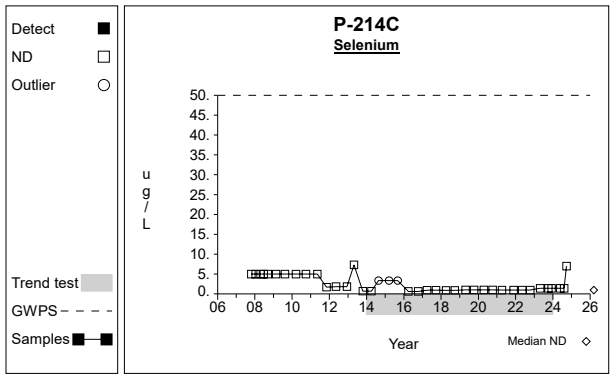


Graph 26

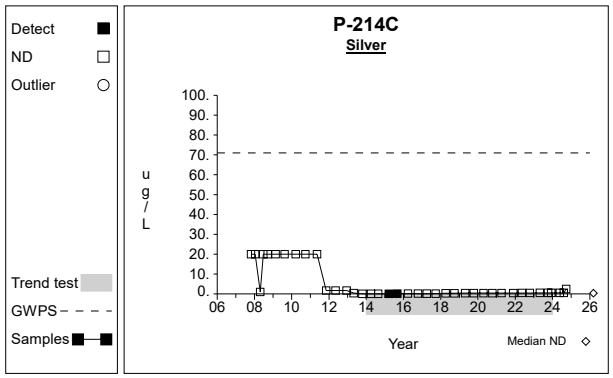


Graph 27

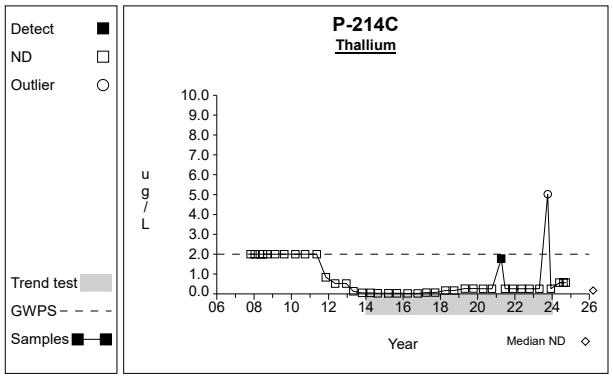
Time Series



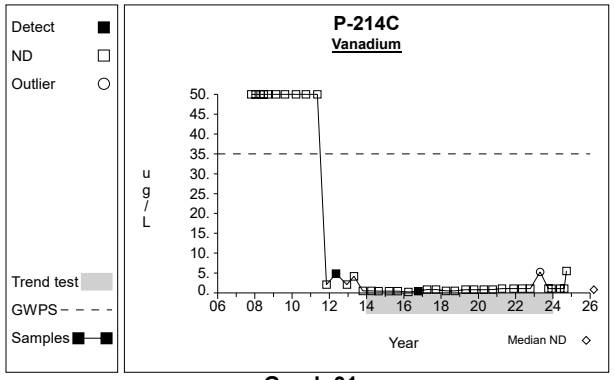
Graph 28



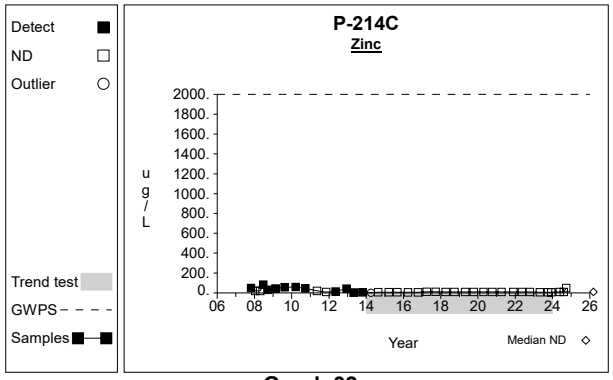
Graph 29



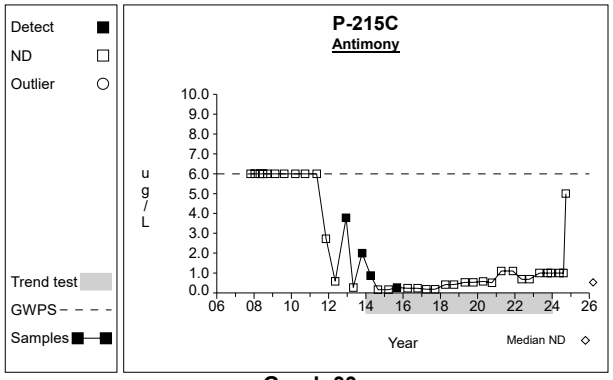
Graph 30



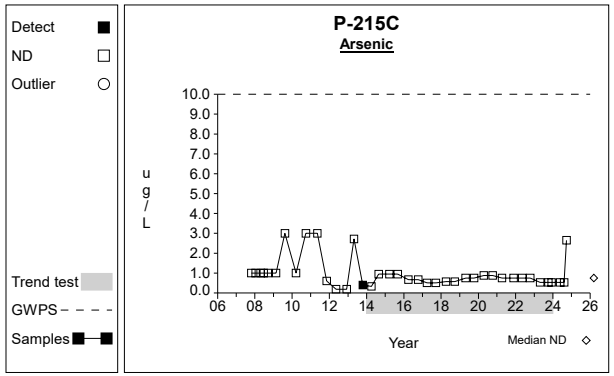
Graph 31



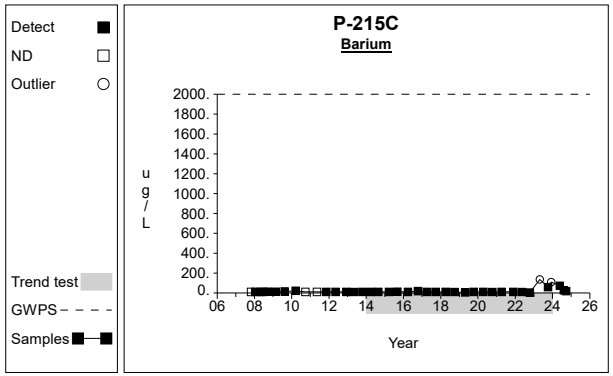
Graph 32



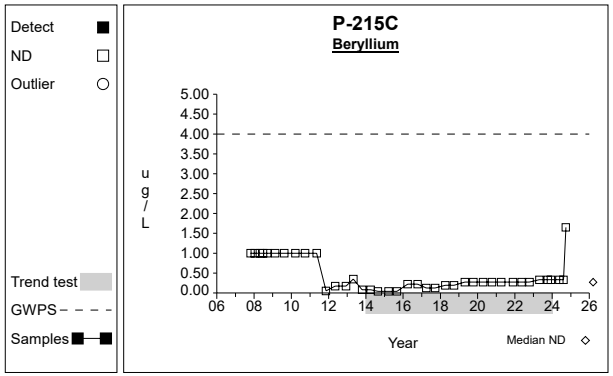
Graph 33



Graph 34

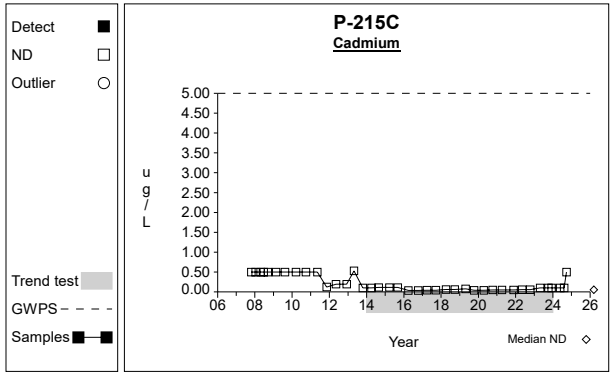


Graph 35

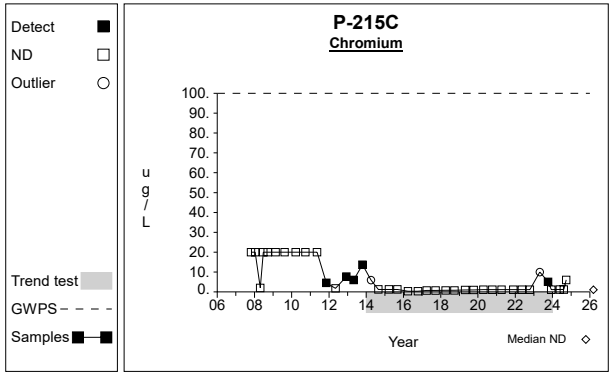


Graph 36

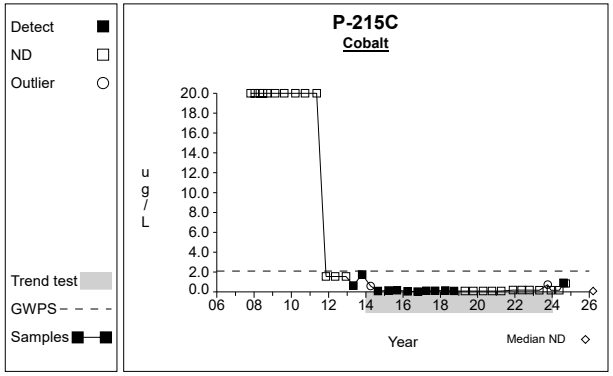
Time Series



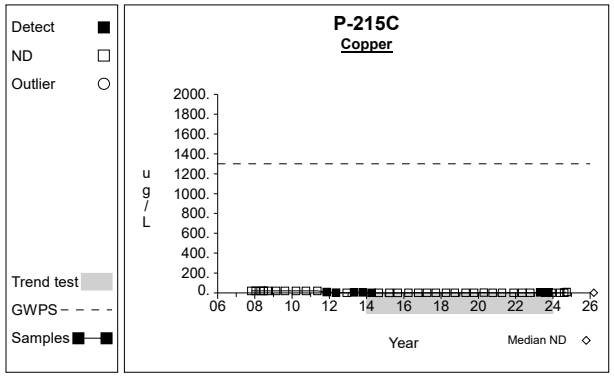
Graph 37



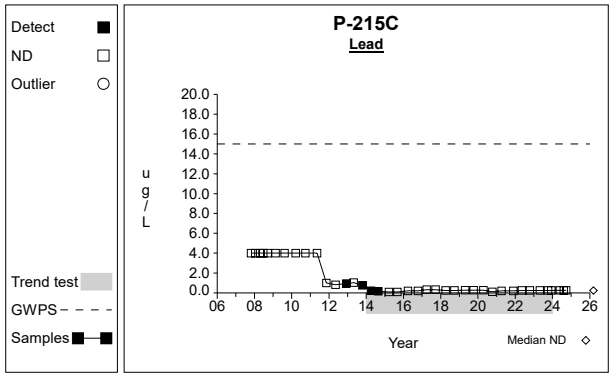
Graph 38



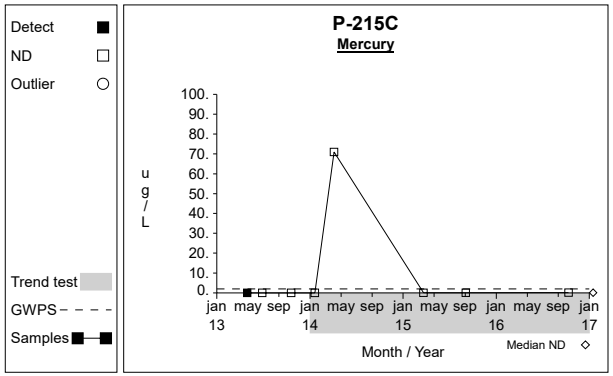
Graph 39



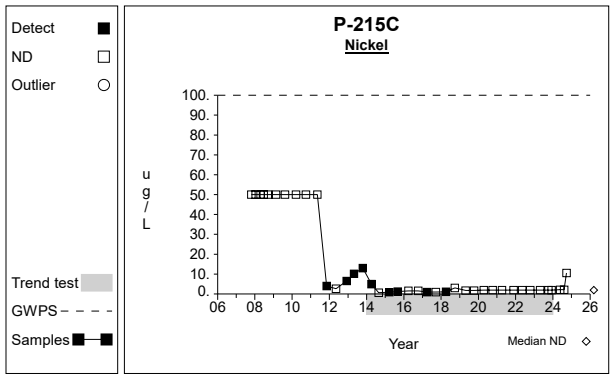
Graph 40



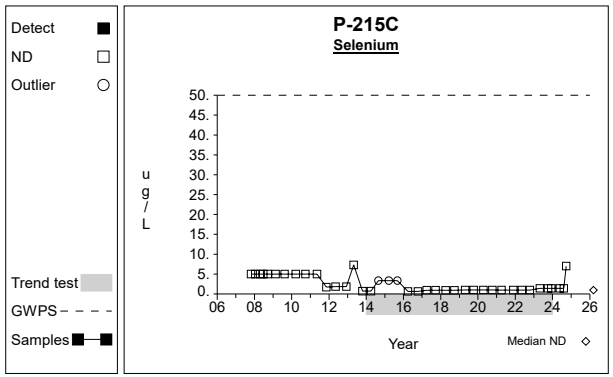
Graph 41



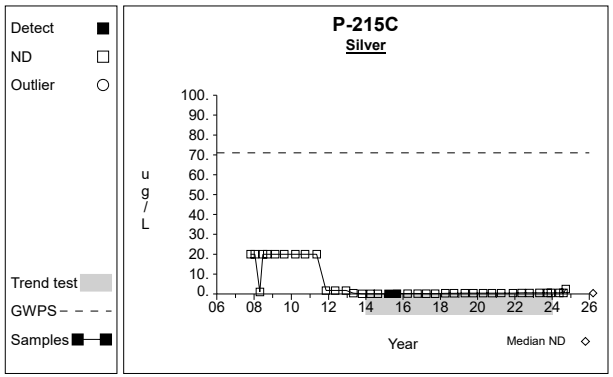
Graph 42



Graph 43

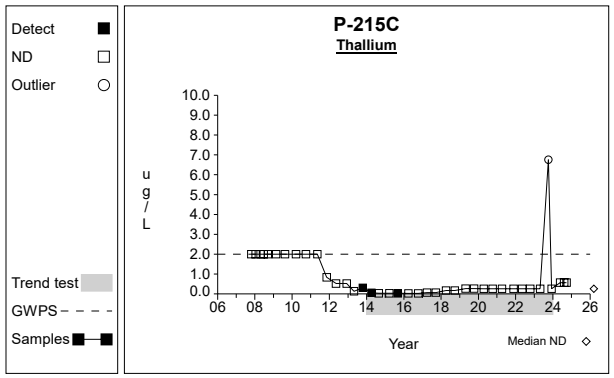


Graph 44

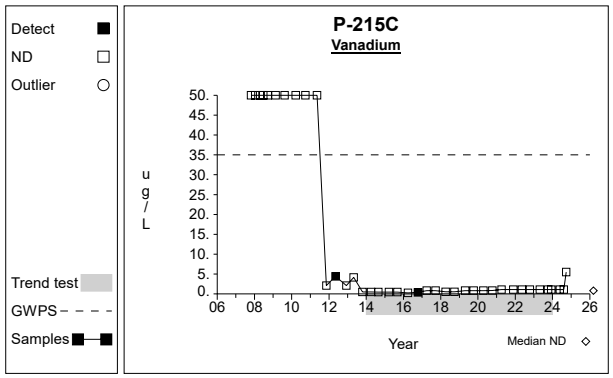


Graph 45

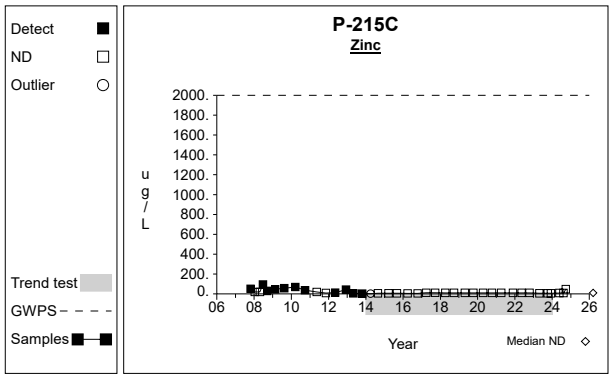
Time Series



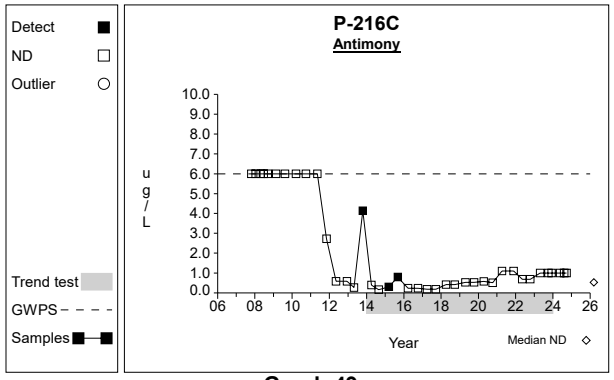
Graph 46



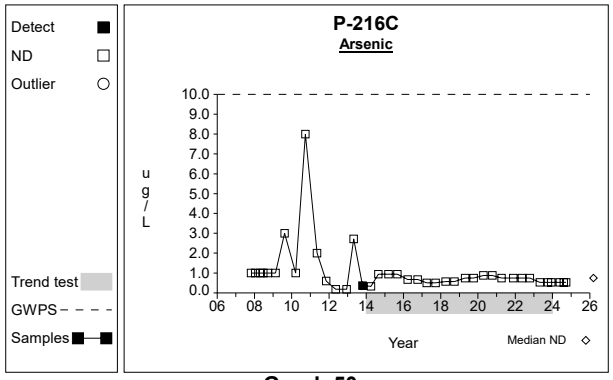
Graph 47



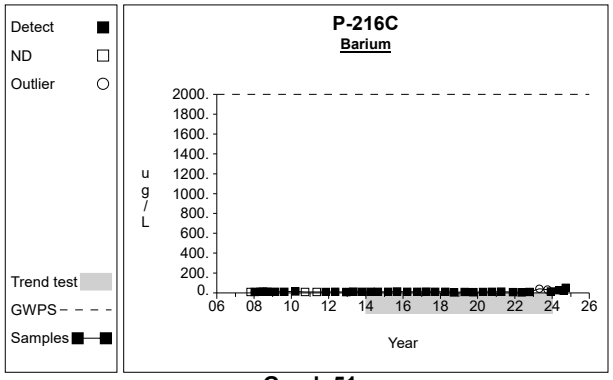
Graph 48



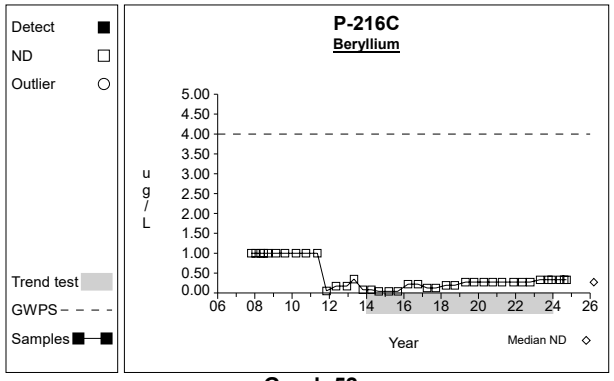
Graph 49



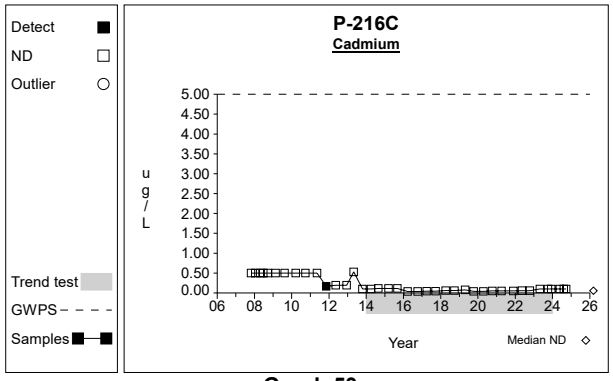
Graph 50



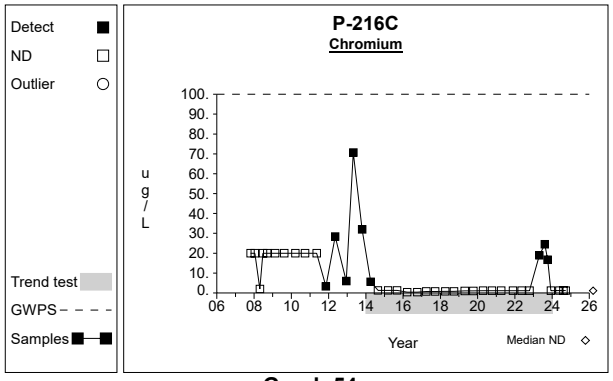
Graph 51



Graph 52

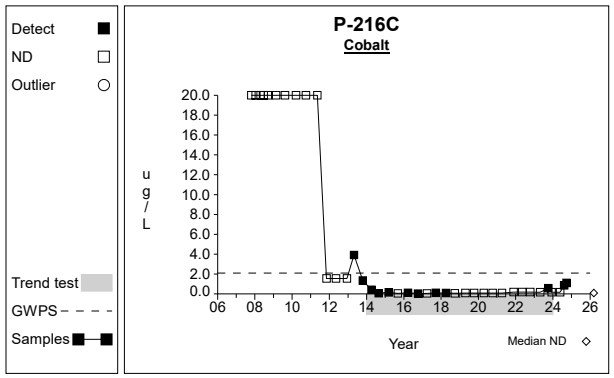


Graph 53

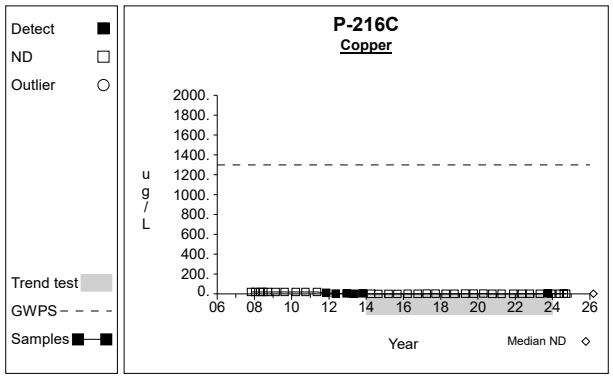


Graph 54

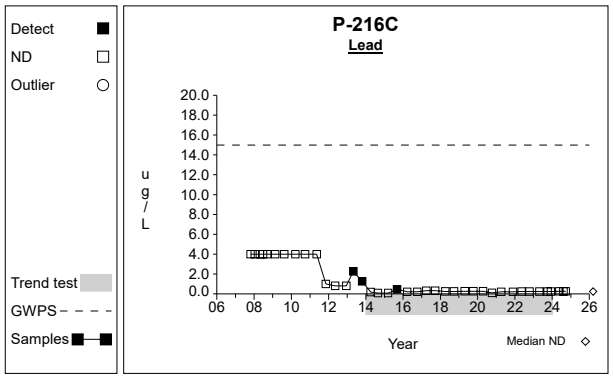
Time Series



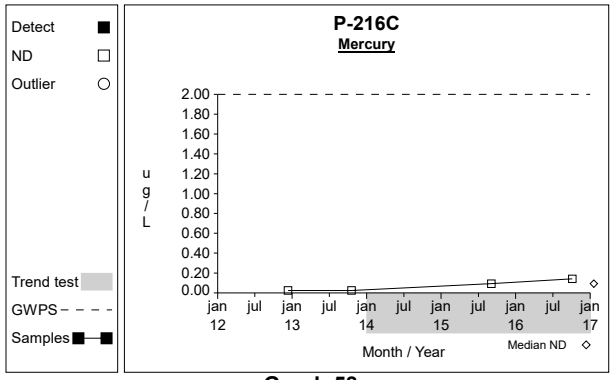
Graph 55



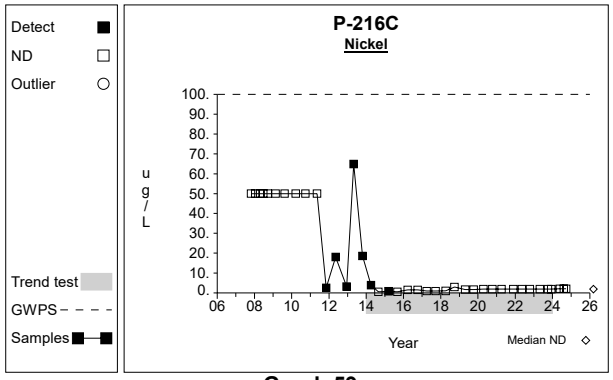
Graph 56



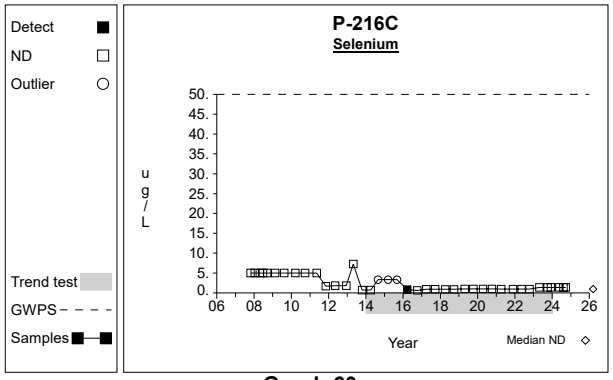
Graph 57



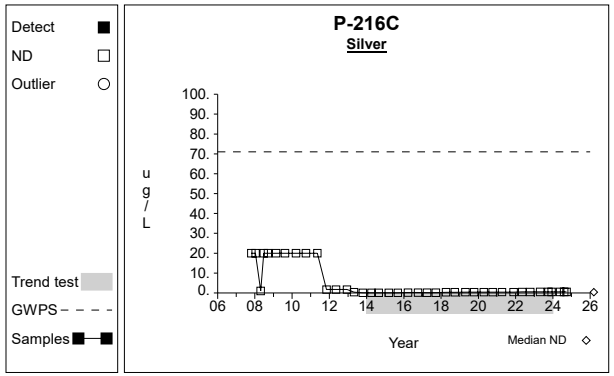
Graph 58



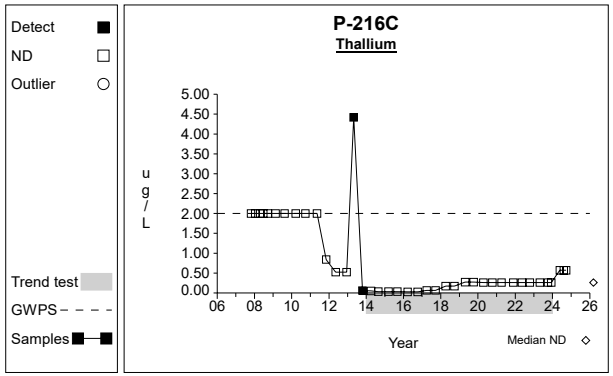
Graph 59



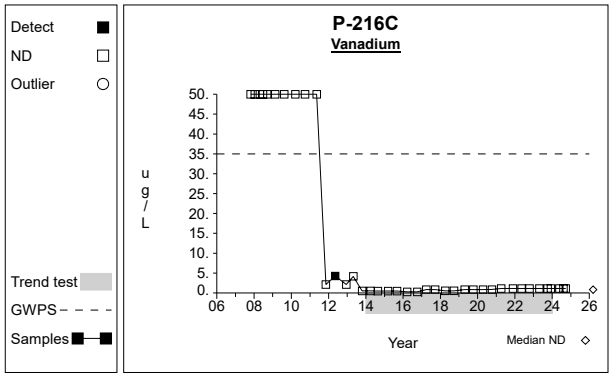
Graph 60



Graph 61

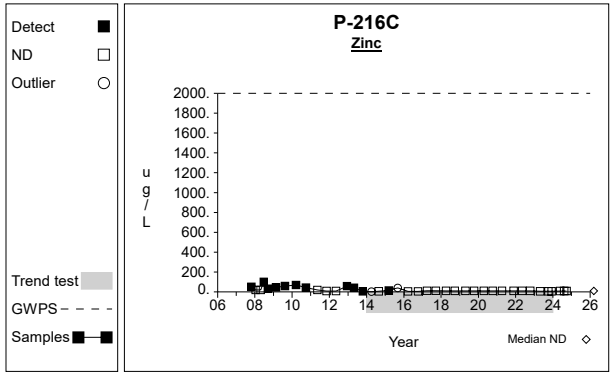


Graph 62



Graph 63

Time Series



Graph 64

Table 9

Historical Volatile Organic Compound Detections

Constituent	Well	Date	Identifier	Result	Limit	Units
1,2-dichlorobenzene	P-213C	4/29/2013		.178	.140	ug/L
Acetone	P-213C	3/30/2017		2.75	1.79	ug/L
Acetone	P-213C	9/13/2017		3.47	1.79	ug/L
Acetone	P-213C	5/10/2022		10.70	3.10	ug/L
Bromomethane	P-213C	9/13/2017		.305	.220	ug/L
Carbon disulfide	P-213C	5/09/2012		.16	.15	ug/L
Dichloromethane	P-213C	12/10/2012		.290	.170	ug/L
Dichloromethane	P-213C	4/03/2014		.516	.170	ug/L
Dichloromethane	P-213C	3/21/2016		.219	.170	ug/L
Dichloromethane	P-213C	3/21/2016		.219	.170	ug/L
Dichloromethane	P-213C	3/30/2017		.424	.170	ug/L
Toluene	P-213C	3/30/2017		.174	.150	ug/L
2,4-d	P-214C	10/18/2013		3.800	.498	ug/L
2,4-dimethylphenol	P-214C	10/18/2013		.405	.226	ug/L
2-butanone	P-214C	8/22/2014		4.43	.47	ug/L
2-methylphenol (o-cresol)	P-214C	10/18/2013		1.260	.194	ug/L
3/4-methylphenol	P-214C	10/18/2013		.951	.194	ug/L
4,4'-ddd	P-214C	9/01/2015		.00211	.00184	ug/L
Acetone	P-214C	11/07/2011		3.27	1.79	ug/L
Acetone	P-214C	3/31/2017		2.61	1.79	ug/L
Acetone	P-214C	9/22/2017		5.56	1.79	ug/L
Acetone	P-214C	4/05/2018		2.55	1.79	ug/L
Acetone	P-214C	4/05/2018		1.88	1.79	ug/L
Acetone	P-214C	9/27/2018		3.84	3.10	ug/L
Beta-bhc	P-214C	10/18/2013		.00955	.00495	ug/L
Bis(2-ethylhexyl)phthalate	P-214C	12/11/2012		.792	.390	ug/L
Bis(2-ethylhexyl)phthalate	P-214C	6/27/2013		.869	.390	ug/L
Bis(2-ethylhexyl)phthalate	P-214C	8/19/2013		1.460	.402	ug/L
Bis(2-ethylhexyl)phthalate	P-214C	10/10/2016		.852	.406	ug/L
Carbon disulfide	P-214C	11/07/2011		3.130	.150	ug/L
Carbon disulfide	P-214C	5/08/2012		2.920	.150	ug/L
Carbon disulfide	P-214C	12/11/2012		1.280	.150	ug/L
Carbon disulfide	P-214C	4/29/2013		.254	.150	ug/L
Carbon disulfide	P-214C	3/31/2017		.315	.150	ug/L
Carbon disulfide	P-214C	4/05/2018		.557	.150	ug/L
Delta-bhc	P-214C	10/18/2013		.00239	.00237	ug/L
Dichloromethane	P-214C	12/11/2012		.340	.170	ug/L
Dichloromethane	P-214C	4/03/2014		.522	.170	ug/L
Dichloromethane	P-214C	10/10/2016		.186	.170	ug/L
Dichloromethane	P-214C	3/31/2017		.294	.170	ug/L
Dichloromethane	P-214C	4/05/2018		.244	.170	ug/L
Dichloromethane	P-214C	4/05/2018		.313	.170	ug/L
Di-n-octyl phthalate	P-214C	10/10/2016		1.68	.24	ug/L
Heptachlor	P-214C	10/18/2013		.15200	.00268	ug/L
Pyrene	P-214C	12/11/2012		.234	.230	ug/L

Detections are shown for the constituents and sample points selected for the analysis
The Limit column refers to the laboratory reporting limit

Table 9

Historical Volatile Organic Compound Detections

Constituent	Well	Date	Identifier	Result	Limit	Units
Silvex (2,4,5-tp)	P-214C	10/18/2013		.384	.310	ug/L
Toluene	P-214C	8/22/2014		1.090	.150	ug/L
Toluene	P-214C	9/22/2017		.160	.150	ug/L
Toluene	P-214C	4/05/2018		.192	.150	ug/L
Tribromomethane	P-214C	10/18/2013		.147	.140	ug/L
Trichloroethylene	P-214C	10/05/2023		2.02	.43	ug/L
Xylenes	P-214C	8/22/2014		.907	.130	ug/L
2-butanone	P-215C	12/06/2012		.79	.47	ug/L
Acetone	P-215C	3/30/2017		2.89	1.79	ug/L
Acetone	P-215C	9/21/2017		5.77	1.79	ug/L
Acetone	P-215C	4/05/2018		2.90	1.79	ug/L
Acetone	P-215C	9/26/2018		3.93	3.10	ug/L
Acetone	P-215C	5/10/2022		18.30	3.10	ug/L
Beta-bhc	P-215C	4/03/2014		.01800	.00505	ug/L
Bis(2-ethylhexyl)phthalate	P-215C	10/10/2016		.652	.419	ug/L
Bromomethane	P-215C	9/21/2017		.356	.220	ug/L
Carbon disulfide	P-215C	5/08/2012		2.760	.150	ug/L
Carbon disulfide	P-215C	12/06/2012		5.340	.150	ug/L
Carbon disulfide	P-215C	3/30/2017		.267	.150	ug/L
Carbon disulfide	P-215C	9/21/2017		.584	.150	ug/L
Carbon disulfide	P-215C	4/05/2018		.187	.150	ug/L
Chloroethane	P-215C	1/14/2008		109	4	ug/L
Chloromethane	P-215C	5/08/2012		.56	.31	ug/L
Delta-bhc	P-215C	4/03/2014		.00295	.00242	ug/L
Delta-bhc	P-215C	6/10/2014		.00325	.00256	ug/L
Dichloromethane	P-215C	12/06/2012		.480	.170	ug/L
Dichloromethane	P-215C	4/03/2014		.306	.170	ug/L
Dichloromethane	P-215C	10/10/2016		.423	.170	ug/L
Dichloromethane	P-215C	3/30/2017		.286	.170	ug/L
Dichloromethane	P-215C	4/05/2018		.188	.170	ug/L
Di-n-octyl phthalate	P-215C	10/10/2016		1.790	.247	ug/L
Endosulfan i	P-215C	4/03/2014		.00508	.00211	ug/L
Endosulfan ii	P-215C	4/03/2014		.0122	.0020	ug/L
Gamma-bhc (lindane)	P-215C	4/03/2014		.00372	.00200	ug/L
Heptachlor	P-215C	4/29/2013		.00743	.00260	ug/L
Styrene	P-215C	3/20/2015		.108	.100	ug/L
Toluene	P-215C	8/25/2014		.346	.150	ug/L
Tribromomethane	P-215C	10/18/2013		.25	.14	ug/L
Xylenes	P-215C	8/25/2014		.289	.130	ug/L
1,2-dichlorobenzene	P-216C	4/29/2013		.23	.14	ug/L
1,4-dichlorobenzene	P-216C	9/03/2015		.592	.200	ug/L
2,4-d	P-216C	10/18/2013		3.760	.508	ug/L
2-butanone	P-216C	4/29/2013		.747	.470	ug/L
Acetone	P-216C	3/30/2017		3.18	1.79	ug/L
Acetone	P-216C	9/21/2017		5.64	1.79	ug/L

Detections are shown for the constituents and sample points selected for the analysis
The Limit column refers to the laboratory reporting limit

Table 9

Historical Volatile Organic Compound Detections

Constituent	Well	Date	Identifier	Result	Limit	Units
Acetone	P-216C	4/05/2018		2.89	1.79	ug/L
Acetone	P-216C	4/25/2023		56.90	3.10	ug/L
Acetone	P-216C	8/08/2023		61.90	3.10	ug/L
Acetone	P-216C	10/03/2023		54.70	3.10	ug/L
Acetone	P-216C	12/06/2023		29.70	3.10	ug/L
Benzene	P-216C	9/26/2018		.356	.220	ug/L
Bis(2-ethylhexyl)phthalate	P-216C	12/11/2012		.749	.390	ug/L
Bis(2-ethylhexyl)phthalate	P-216C	6/27/2013		2.390	.402	ug/L
Bis(2-ethylhexyl)phthalate	P-216C	10/18/2013		15.000	.429	ug/L
Bis(2-ethylhexyl)phthalate	P-216C	3/21/2016		11.000	.398	ug/L
Bis(2-ethylhexyl)phthalate	P-216C	3/21/2016		11.000	.398	ug/L
Bis(2-ethylhexyl)phthalate	P-216C	10/04/2016		.603	.433	ug/L
Bromomethane	P-216C	10/04/2016		.302	.220	ug/L
Bromomethane	P-216C	4/05/2018		.243	.220	ug/L
Carbon disulfide	P-216C	11/07/2011		1.760	.150	ug/L
Carbon disulfide	P-216C	5/09/2012		1.060	.150	ug/L
Carbon disulfide	P-216C	12/11/2012		.260	.150	ug/L
Carbon disulfide	P-216C	4/29/2013		10.900	.150	ug/L
Carbon disulfide	P-216C	10/18/2013		.153	.150	ug/L
Carbon disulfide	P-216C	3/30/2017		.209	.150	ug/L
Carbon disulfide	P-216C	9/21/2017		.233	.150	ug/L
Carbon disulfide	P-216C	4/05/2018		.150	.150	ug/L
Delta-bhc	P-216C	10/18/2013		.00394	.00261	ug/L
Delta-bhc	P-216C	3/10/2015		.00273	.00237	ug/L
Delta-bhc	P-216C	10/04/2016		.00824	.00256	ug/L
Dichloromethane	P-216C	12/11/2012		.220	.170	ug/L
Dichloromethane	P-216C	10/18/2013		.210	.170	ug/L
Dichloromethane	P-216C	4/03/2014		.661	.170	ug/L
Dichloromethane	P-216C	9/03/2015		.430	.170	ug/L
Dichloromethane	P-216C	3/21/2016		.215	.170	ug/L
Dichloromethane	P-216C	3/21/2016		.215	.170	ug/L
Dichloromethane	P-216C	10/04/2016		.403	.170	ug/L
Dichloromethane	P-216C	3/30/2017		.770	.170	ug/L
Di-n-octyl phthalate	P-216C	10/04/2016		1.760	.256	ug/L
Endosulfan i	P-216C	10/18/2013		.00911	.00227	ug/L
Endosulfan i	P-216C	4/03/2014		.00397	.00213	ug/L
Endosulfan sulfate	P-216C	12/11/2012		1.34	.25	ug/L
Endrin aldehyde	P-216C	9/03/2015		.00888	.00811	ug/L
Endrin aldehyde	P-216C	1/26/2016		.01010	.00737	ug/L
Heptachlor	P-216C	10/18/2013		.03130	.00295	ug/L
Pyrene	P-216C	12/11/2012		.232	.230	ug/L
Pyrene	P-216C	2/21/2013		.258	.235	ug/L
Styrene	P-216C	3/10/2015		.213	.100	ug/L
Tetrachloroethylene	P-216C	12/11/2012		.560	.180	ug/L
Tetrachloroethylene	P-216C	3/10/2015		.232	.180	ug/L

Detections are shown for the constituents and sample points selected for the analysis
The Limit column refers to the laboratory reporting limit

Table 9

Historical Volatile Organic Compound Detections

Constituent	Well	Date	Identifier	Result	Limit	Units
Toluene	P-216C	4/29/2013		.393	.150	ug/L
Toluene	P-216C	8/25/2014		.453	.150	ug/L
Toluene	P-216C	3/30/2017		.234	.150	ug/L
Xylenes	P-216C	4/29/2013		.697	.130	ug/L
Xylenes	P-216C	8/25/2014		.279	.130	ug/L

Detections are shown for the constituents and sample points selected for the analysis
The Limit column refers to the laboratory reporting limit

Appendix B - Laboratory Reports and Historical Data

APPENDIX B-1
HISTORICAL DATA

Appendix B-1-1
Shallow Wells

Black Hawk County Landfill
Appendix I Results
Monitoring Well OW-101B

Parameter Name	Units	GPS	Nov-22	Jan-23	Apr-23	Sep-23	Dec-23	May-24	Oct-24
Appendix I Inorganics									
Total Suspended Solids	mg/L	NS	***1.25 J***	***0.75 J***	<0.638	***4.13***	***1.75 J***	***2.25***	***3.38***
Turbidity, Field	NTU	NS	0	0	***0.73***	***4.47***	***0.78***	***3.5***	***5.83***
Turbidity, Lab	NTU	NS	--	--	--	--	--	--	--
Antimony	µg/L	6	<0.69	<0.69	<1	<1	<1	<1	<1
Antimony, Dissolved	µg/L	NS	--	--	--	--	--	--	--
Arsenic	µg/L	10	<0.75	<0.75	<0.53	<0.53	<0.53	<0.53	<0.53
Arsenic, Dissolved	µg/L	NS	--	--	--	--	--	--	--
Barium	µg/L	2000	***188***	***162***	***164***	***181***	***179***	***179***	***193***
Barium, Dissolved	µg/L	NS	--	--	--	--	--	--	--
Beryllium	µg/L	4	<0.27	<0.27	<0.33	<0.33	<0.33	<0.33	<0.33
Beryllium, Dissolved	µg/L	NS	--	--	--	--	--	--	--
Cadmium	µg/L	5	<0.055	<0.055	<0.1	<0.1	<0.1	<0.1	<0.1
Cadmium, Dissolved	µg/L	NS	--	--	--	--	--	--	--
Chromium	µg/L	100	***1.9 J***	***6.94***	***2.6 J***	***1.75 J***	***4.73 J***	***1.43 J***	***2.51 J***
Chromium, Dissolved	µg/L	NS	--	--	--	--	--	--	--
Cobalt	µg/L	9.83	<0.19	<0.19	<0.17	***0.275 J***	***0.311 J***	<0.17	***0.334 J***
Cobalt, Dissolved	µg/L	NS	--	--	--	--	--	--	--
Copper	µg/L	1300	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8
Copper, Dissolved	µg/L	NS	--	--	--	--	--	--	--
Lead	µg/L	15	<0.24	<0.24	<0.24	***0.469 J***	<0.24	<0.26	<0.26
Lead, Dissolved	µg/L	NS	--	--	--	--	--	--	--
Nickel	µg/L	722	<1.9	<1.9	<1.9	***4.14 J***	***4.15 J***	<2.1	***4.96 J***
Nickel, Dissolved	µg/L	NS	--	--	--	--	--	--	--
Selenium	µg/L	50	<0.96	<0.96	***1.74 J***	***1.51 J***	<1.4	***1.52 J***	<1.4
Selenium, Dissolved	µg/L	NS	--	--	--	--	--	--	--
Silver	µg/L	100	<0.49	<0.49	<0.5	<0.5	<0.5	<0.5	<0.5
Silver, Dissolved	µg/L	NS	--	--	--	--	--	--	--
Thallium	µg/L	2	<0.26	<0.26	***0.382 J***	***2.98***	<0.26	<0.57	<0.57
Thallium, Dissolved	µg/L	NS	--	--	--	--	--	--	--
Vanadium	µg/L	35	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Vanadium, Dissolved	µg/L	NS	--	--	--	--	--	--	--
Zinc	µg/L	2000	<10	<10	<6.4	<6.4	<6.4	<9.7	<9.7
Zinc, Dissolved	µg/L	NS	--	--	--	--	--	--	--
Appendix I Organics									
1,1,1,2-Tetrachloroethane	µg/L	70	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38
1,1,1-Trichloroethane	µg/L	200	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19
1,1,2,2-Tetrachloroethane	µg/L	0.3	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47
1,1,2-Trichloroethane	µg/L	5	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45
1,1-Dichloroethane	µg/L	140	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22
1,1-Dichloroethylene	µg/L	7	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56
1,2,3-Trichloropropane	µg/L	0.0058	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59
1,2-Dibromo-3-chloropropane	µg/L	0.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2
1,2-Dibromoethane	µg/L	0.05	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34
1,2-Dichlorobenzene	µg/L	600	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37
1,2-Dichloroethane	µg/L	5	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39
1,2-Dichloropropane	µg/L	5	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27
1,4-Dichlorobenzene	µg/L	75	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23
2-Butanone	µg/L	4000	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1
2-Hexanone	µg/L	NS	<2	<2	<2	<2	<2	<2	<2
4-Methyl-2-pentanone	µg/L	560	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1
Acetone	µg/L	6300	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1
Acrylonitrile	µg/L	0.32	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2
Benzene	µg/L	5	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22
Bromochloromethane	µg/L	90	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54
Bromodichloromethane	µg/L	80	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39
Bromomethane	µg/L	10	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Carbon disulfide	µg/L	700	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45
Carbon Tetrachloride	µg/L	5	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65
Chlorobenzene	µg/L	100	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Chloroethane	µg/L	2800	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79
Chloromethane	µg/L	NS	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61
cis-1,2-Dichloroethylene	µg/L	70	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21
cis-1,3-Dichloropropene	µg/L	NS	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Dibromochloromethane	µg/L	80	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75
Dibromomethane	µg/L	70	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Dichloromethane	µg/L	5	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7
Ethylbenzene	µg/L	700	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31
Iodomethane	µg/L	NS	<7	<7	<7	<7	<7	<7	<7
Styrene	µg/L	100	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37
Tetrachloroethylene	µg/L	5	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48
Toluene	µg/L	1000	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43
Trans-1,2-dichloroethylene	µg/L	100	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27
trans-1,3-Dichloropropene	µg/L	NS	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56
trans-1,4-Dichloro-2-butene	µg/L	1.8	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Tribromomethane	µg/L	80	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78
Trichloroethylene	µg/L	5	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43
Trichlorofluoromethane	µg/L	2000	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38
Trichloromethane	µg/L	80	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3
Vinyl Acetate	µg/L	NS	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Vinyl Chloride	µg/L	2	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18
Xylenes	µg/L	10000	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Detections at or above the RL are shown in bold italics on gray background.

Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.

NS = No standard

Black Hawk County Landfill
Appendix I Results
Monitoring Well OW-105B

Parameter Name	Units	GPS	Mar-20	Sep-20	Dec-20	Mar-21	Jun-21	Nov-21	Feb-22	Apr-22	Nov-22	Apr-23	Sep-23	May-24	Oct-24
Appendix I Inorganics															
Total Suspended Solids	mg/L	NS	<0.638	***1.13 J***	<0.638	<0.638	***1.5 J***	***1 J***	<1.7	***1.25 J***	***1.13 J***	<1.7	<1.7	<1.39	<1.39
Turbidity, Field	NTU	NS	***0.59***	***1.44***	***0.26***	***0.25***	***3.67***	0	***1.12***	0	0	***0.84***	***1.27***	***4.15***	***5.38***
Turbidity, Lab	NTU	NS	***0.73 J***	--	--	--	--	--	--	--	--	--	--	--	--
Antimony	µg/L	6	<0.58	<0.51	<0.51	<1.1	<1.1	<1.1	--	<0.69	<0.69	<1	<1	<1	<1
Antimony, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	<0.88	<0.88	<0.88	<0.75	<0.75	<0.75	--	<0.75	<0.75	<0.53	<0.53	<0.53	<0.53
Arsenic, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	***88.5***	***82.6***	***91.4***	***93.9***	***87***	***89.4***	--	***81.9***	***88.7***	***90.5***	***84.4***	***79.9***	***89***
Barium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	--	<0.27	<0.27	<0.33	<0.33	<0.33	<0.33
Beryllium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	<0.039	<0.049	<0.049	<0.051	<0.051	***0.107***	<0.051	<0.055	***0.088 J***	<0.1	<0.1	<0.1	<0.1
Cadmium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	***10.5***	***4.86 J***	***10.6***	***8.44***	***8.57***	***3.59 J***	--	***5.31***	***1.67 J***	***4.48 J***	***2.6 J***	***4.38 J***	***2.1 J***
Chromium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	9.83	***0.136 J***	<0.091	***0.099 J***	<0.091	<0.091	***0.282 J***	--	<0.19	***0.282 J***	***0.217 J***	<0.17	<0.17	<0.17
Cobalt, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	1300	<3.2	<1.5	<1.5	<1.4	<1.4	<1.4	--	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8
Copper, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	<0.27	<0.11	<0.11	<0.21	<0.21	<0.21	--	<0.24	<0.24	<0.24	<0.24	<0.26	<0.26
Lead, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	µg/L	722	***4.75 J***	***5.82***	***5.81***	***4.73 J***	***4.3 J***	***15***	--	***3.04 J***	***9.39***	***2.71 J***	***7.04***	<2.1	***3.61 J***
Nickel, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	<1	<1	<1	<0.96	<0.96	<0.96	--	<0.96	<0.96	<1.4	<1.4	<1.4	<1.4
Selenium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	µg/L	100	<0.37	<0.37	<0.37	<0.42	<0.42	<0.42	--	<0.49	<0.49	<0.5	<0.5	<0.5	<0.5
Silver, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	--	<0.26	<0.26	<0.26	<0.26	<0.57	<0.57
Thallium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium	µg/L	35	<0.82	<0.85	<0.85	<1.1	<1.1	<1.1	--	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Vanadium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	2000	<10	<10	<10	<10	<10	<10	--	<10	<10	<6.4	<6.4	<9.7	<9.7
Zinc, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Appendix I Organics															
1,1,1,2-Tetrachloroethane	µg/L	70	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	--	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38
1,1,1-Trichloroethane	µg/L	200	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	--	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19
1,1,2,2-Tetrachloroethane	µg/L	0.3	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	--	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47
1,1,2-Trichloroethane	µg/L	5	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	--	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45
1,1-Dichloroethane	µg/L	140	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22
1,1-Dichloroethylene	µg/L	7	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	--	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56
1,2,3-Trichloropropane	µg/L	0.0058	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	--	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59
1,2-Dibromo-3-chloropropane	µg/L	0.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	--	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2
1,2-Dibromoethane	µg/L	0.05	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	--	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34
1,2-Dichlorobenzene	µg/L	600	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	--	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37
1,2-Dichloroethane	µg/L	5	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	--	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39
1,2-Dichloropropane	µg/L	5	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	--	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27
1,4-Dichlorobenzene	µg/L	75	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	--	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23
2-Butanone	µg/L	4000	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	--	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1
2-Hexanone	µg/L	NS	<2	<2	<2	<2	<2	<2	--	<2	<2	<2	<2	<2	<2
4-Methyl-2-pentanone	µg/L	560	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	--	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1
Acetone	µg/L	6300	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	--	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1
Acrylonitrile	µg/L	0.32	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	--	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2
Benzene	µg/L	5	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22
Bromochloromethane	µg/L	90	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	--	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54
Bromodichloromethane	µg/L	80	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	--	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39
Bromomethane	µg/L	10	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	--	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Carbon disulfide	µg/L	700	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	--	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45
Carbon Tetrachloride	µg/L	5	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	--	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65
Chlorobenzene	µg/L	100	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Chloroethane	µg/L	2800	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	--	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79
Chloromethane	µg/L	NS	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	--	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61
cis-1,2-Dichloroethylene	µg/L	70	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	--	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21
cis-1,3-Dichloropropene	µg/L	NS	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	--	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Dibromochloromethane	µg/L	80	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	--	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75
Dibromomethane	µg/L	70	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	--	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Dichloromethane	µg/L	5	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	--	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7
Ethylbenzene	µg/L	700	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	--	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31
Iodomethane	µg/L	NS	<7	<7	<7	<7	<7	<7	--	<7	<7	<7	<7	<7	<7
Styrene	µg/L	100	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	--	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37
Tetrachloroethylene	µg/L	5	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	--	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48
Toluene	µg/L	1000	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	--	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43
Trans-1,2-dichloroethylene	µg/L	100	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	--	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27
trans-1,3-Dichloropropene	µg/L	NS	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	--	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56
trans-1,4-Dichloro-2-butene	µg/L	1.8	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	--	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Tribromomethane	µg/L	80	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	--	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78
Trichloroethylene	µg/L	5	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	--	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43
Trichlorofluoromethane	µg/L	2000	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	--	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38
Trichloromethane	µg/L	80	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	--	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3
Vinyl Acetate	µg/L	NS	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	--	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Vinyl Chloride	µg/L	2	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	--	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18
Xylenes	µg/L	10000	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Detections at or above the RL are shown in bold italics on gray background.

Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.

NS = No standard

Black Hawk County Landfill
Appendix I Results
Monitoring Well OW-113B

Parameter Name	Units	GPS	Oct-07	Jan-08	Apr-08	Jun-08	Sep-08	Feb-09	Aug-09	Mar-10	Sep-10	May-11	Nov-11	May-12	Dec-12	May-13	Oct-13	Mar-14	Sep-14	Mar-15	Aug-15	Mar-16	Sep-16	Mar-17	Sep-17	Mar-18	Sep-18	Dec-18	Apr-19	Jun-19	Sep-19	Apr-20	Aug-20	Oct-20	Mar-21	Jun-21	Nov-21	Apr-22	Nov-22	Apr-23	Sep-23	May-24	Oct-24
Appendix I Inorganics																																											
Total Suspended Solids	mg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<1.82	<1.13	***1.38 J***	***1.63 J***	***3.87***	***2.88***	***4.88***	***2.25***	***7.5***	***3.13***	***4.5***	--	***2.63***	***8.33***	***9***	***3.63***	***1.38 J***	--	***2.33 J***	***2.67 J***	***6.5***	***3.63***	***5.67***	***33***	***11.3***
Turbidity, Field	NTU	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	***1.349***	-1.059	***1.324***	***4.027***	***10.36***	***50.64***	***2.817***	***7.532***	***6.252***	***9.84***	***13.23***	***27.47***	***13.16***	***28.54***	***27.38***	***13.77***	***0.08***	***21.63***	***0.89***	***10.8***	***2.92***	***19.39***	***2.96***	***135.6***	***29.25***
Turbidity, Lab	NTU	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	***1.5***	<0.7	***7.4***	***2.4***	***4.6***	***5.3***	***6***	***2.4***	***34.6***	***10.1***	***7.6***	--	***5.46***	***18.3***	--	--	--	--	--	--	--	--	--	--	--
Antimony	µg/L	6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<2.73	***3.39 J***	<0.584	<0.271	<0.4	***0.456 J***	<0.161	<0.161	<0.161	<0.161	<0.237	<0.237	<0.185	<0.185	<0.42	<0.42	--	<0.53	***0.599 J***	--	<0.51	<1.1	--	<1.1	<0.69	<0.69	<1	<1	<1	<1
Antimony, Dissolved	µg/L	NS	--	--	--	--	--	<6	<6	<6	<6	<6	<2.73	***2.13 J***	<0.584	<0.271	<0.4	<0.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	***1.29***	***9.87***	***1.87***	***2.24***	***14.4***	***7.12***	***3.24***	<3	<6	***2.26***	<0.6	<0.185	<0.185	<2.72	***0.756 J***	***0.657 J***	<0.945	<0.945	<0.945	<0.672	***3.27***	<0.505	<0.505	<0.57	<0.57	--	<0.75	<0.88	--	<0.88	<0.75	--	<0.75	<0.75	<0.53	***0.994 J***	***2.19***	***1.52 J***
Arsenic, Dissolved	µg/L	NS	--	--	--	--	--	***1.04***	<1	<3	<1	<15	***6.91***	<0.185	<0.185	<2.72	***0.695 J***	<0.33	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	***23.8***	***132***	***25.4***	***31.4***	***209***	***133***	***31.3***	***13.3***	***17.2***	***14.9***	***16.4***	***14.3***	***15.4***	***20.8***	***15.6***	***20.6***	***14.7***	***13***	***14.8***	***12.2***	***11.3***	***11.6***	***11.3***	***12.5***	***14.2***	--	***13.5***	--	***15.5***	***14***	--	***13.7***	***10.3***	--	***12.4***	***11.1***	***14.5***	***15.7***	***13.8***	***14.1***	***15.8***
Barium, Dissolved	µg/L	NS	--	--	--	--	--	***16.2***	***23.8***	***14.9***	***13.2***	***12.9***	***16.2***	***12.9***	***15.2***	***16***	***17.2***	***13.2***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	<1	<1	<1	<1	***1.29***	<2	<1	<1	<1	<1	***0.059 J***	<0.169	<0.169	<0.348	<0.08	<0.08	<0.039	<0.039	<0.039	<0.221	<0.221	<0.125	<0.125	<0.19	<0.19	--	<0.27	--	<0.27	<0.27	--	<0.27	<0.27	--	<0.27	<0.27	<0.27	<0.33	<0.33	<0.33	<0.33
Beryllium, Dissolved	µg/L	NS	--	--	--	--	--	<1	<1	<1	<1	<1	***0.099 J***	<0.169	<0.169	<0.348	<0.08	<0.08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	<0.5	***0.824***	<0.5	<0.5	***0.679***	***1.94***	<0.5	<0.5	<0.5	<0.5	***0.124 J***	<0.195	<0.195	<0.53	<0.1	<0.1	<0.112	<0.112	<0.112	***0.096 J***	<0.0351	***0.068 J***	***0.083 J***	<0.06	<0.06	--	***0.128 J***	--	***0.113***	***0.083 J***	--	***0.062 J***	***0.094 J***	--	<0.051	***0.064 J***	<0.055	<0.1	<0.1	<0.1	<0.1
Cadmium, Dissolved	µg/L	NS	--	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	***0.221 J***	***0.197 J***	<0.195	<0.53	<0.1	<0.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	<20	***182***	***11.2***	<20	***78.5***	***135***	<20	<20	<20	<20	<1.81	<1.81	<1.81	***2.56 J***	***0.863 J***	***9.02***	<1.24	***6.29***	<1.24	***0.536 J***	<0.355	<0.729	<0.729	***9.55***	***1.29 J***	--	***2.94 J***	--	<0.98	***1.84 J***	--	<1.1	<1.1	--	<1.1	<1.1	<1.1	<1.1	<1.1	***1.27 J***
Chromium, Dissolved	µg/L	NS	--	--	--	--	--	<20	<20	<20	<20	<20	<1.81	<1.81	<1.81	<2.09	<0.5	***1.56 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	9.83	<20	<20	<20	<20	***28.3***	***37.7***	<20	<20	<20	<20	***4.99 J***	***8.72 J***	<1.55	***9.25***	***5.02***	***2.17***	***5.74***	***0.885***	***7.09***	***2.37***	***1.93***	***3.25***	***4.18***	***0.526***	***10.9***	***0.941***	***4.01***	***13.2***	***13***	***15.7***	***21.8***	***8.55***	***1.71***	--	***5.41***	***4.73***	***26.1***	***2.62***	***18.9***	***14.4***	***12.6***
Cobalt, Dissolved	µg/L	NS	--	--	--	--	--	***26.3***	<20	<20	<20	<20	<1.55	***8.77 J***	***4.21 J***	***9.04***	***5.42***	***0.328 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	1300	<20	***27.7***	<20	<20	***33.6***	***37.9***	<20	<20	<20	***25.1***	***11.3 J***	***2.81 J***	<1.51	***5.76***	***1.4 J***	***1.75 J***	<0.485	<0.485	<0.485	<1.22	<1.22	<2.19	<2.19	<1.6	<1.6	--	<2	--	<2	<3.2	--	<1.5	<1.4	--	<1.4	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8
Copper, Dissolved	µg/L	NS	--	--	--	--	--	<20	<20	<20	<20	***23.2***	<1.51	<1.51	***2.02 J***	***4.64***	***1.52 J***	***0.934 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	<4	***6.48***	<4	<4	<4	***7.92***	<4	<4	<4	<4	***1.49 J***	<0.821	<0.821	<1.04	<0.18	***0.618 J***	<0.0967	<0.0967	<0.0967	<0.211	<0.211	<0.324	<0.324	<0.25	<0.25	--	<0.27	--	<0.27	<0.27	--	<0.11	<0.21	--	<0.21	<0.24	<0.24	<0.24	<0.24	<0.26	<0.26
Lead, Dissolved	µg/L	NS	--	--	--	--	--	<4	<4	<4	<4	<4	<1	<0.821	<0.821	<1.04	<0.18	<0.18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	µg/L	722	<50	***89.8***	<50	<50	***73.8***	***90.6***	<50	<50	<50	<50	***11.8 J***	***17.3 J***	***4.26 J***	***19.3***	***8.89***	***13.6***	***8.45***	***9.52***	***12.3***	***8.26***	***3.26 J***	***9.32***	***9.34***	***17.4***	***14.4***	***15.6***	--	***22.7***	--	***17.6***	***19.3***	***17.4***	***14.4***	***15.6***	--	***12.6***	***21.2***	***26.2***	***19.1***	***20.6***	***20.9***	***15.9***
Nickel, Dissolved	µg/L	NS	--	--	--	--	--	<50	<50	<50	<50	<50	<2.58	***16.4 J***	***6.25 J***	***21.9***	***9.4***	***11.7***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	<5	<5	<5	<5	<5	<5	<5	<10	<5	<5	<1.69	<1.83	<1.83	<7.3	<0.7	<0.7	<3.34	<3.34	<3.34	<0.63	<0.63	<0.928	<0.928	<0.9	<0.9	--	<1	--	<1	<1	--	<1	<0.96	--	<0.96	<0.96	<0.96	<1.4	<1.4	<1.4	<1.4
Selenium, Dissolved	µg/L	NS	--	--	--	--	--	<5	<5	<10	<5	<5	<1.69	<1.83	<1.83	<7.3	<0.7	<0.7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	µg/L	100	<20	<20	<1	<20	<20	<20	<20	<20	<20	<20	<1.7	<1.7	<1.7	<0.395	<0.033	<0.033	<0.042	<0.042	<0.042	<0.153	<0.153	<0.14	<0.14	<0.3	<0.3	--	<0.37	--	<0.37	<0.37	--	<0.37	<0.42	--	<0.42	<0.49	<0.49	<0.5	<0.5	<0.5	<0.5
Silver, Dissolved	µg/L	NS	--	--	--	--	--	<20	<20	<20	<20	<20	<1.7	<1.7	<1.7	<0.395	<0.033	<0.033	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<0.84	<0.523	<0.523	<0.134	***0.0834 J***	<0.05	<0.0325	<0.0325	***0.044 J***	<0.0255	<0.0255	<0.0644	<0.0644	<0.17	<0.17	--	<0.27	--	<0.27	<0.26	--	<0.26	<0.26	--	<0.26	<0.26	<0.26	<0.26	<0.26	<0.57	<0.57
Thallium, Dissolved	µg/L	NS	--	--	--	--	--	<2	<2	<2	<2	<2	<0.84	<0.523	<0.523	<0.134	<0.05	***0.052 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium	µg/L	35	<50	<50	<50	<50	***61.3***	<50	<50	<50	<50	<50	<2.1	***4.46 J***	<2.1	<4.17	<0.5	***1.47 J***	<0.449	<0.449	<0.449	<0.255	<0.255	<0.84	<0.84	<0.52	<0.52	--	<0.82	--	<0.82	<0.82	--	<0.85	<1.1	--	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Vanadium, Dissolved	µg/L	NS	--	--	--	--	--	<50	<50	<50	<50	<50	<2.1	***4.49 J***	<2.1	<4.17	<0.5	<0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	2000	***153***	***73.8***	***53.1***	***289***	***136***	***186***	***164***	***151***	***56.4***	<20	<9.11	***12.8 J***	***39.9***	***16.1 J***	***3.13 J***	***3.36 J***	<6.95	<6.95	<6.95	<5.21	<5.21	<11.5	<11.5	<10	<10	--	<10	--	<10	<10	--	<10	<10	--	<10	<10	<10	<6.4	<6.4	<9.7	<9.7
Zinc, Dissolved	µg/L	NS	--	--	--	--	--	***134***	***148***	***140***	***60.5***	<20	<9.11	<9.11	***62.6***	***10.7 J***	***4.93 J***	<2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Appendix I Organics																																											
1,1,1,2-Tetrachloroethane	µg/L	70	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.38	--	<0.38	--	<0.38	<0.38	--	<0.38	<0.38	--	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38
1,1,1-Trichloroethane	µg/L	200	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.19	--	<0.19	--	<0.19	<0.19	--	<0.19	<0.19	--	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19
1,1,2,2-Tetrachloroethane	µg/L	0.3	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.47	--	<0.47	--	<0.47	<0.47	--	<0.47	<0.47	--	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47
1,1,2-Trichloroethane	µg/L	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.45	--	<0.45	--	<0.45	<0.45	--	<0.45	<0.45	--	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45
1,1-Dichloroethane	µg/L	140	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.22	--	<0.22	--	<0.22	<0.22	--	<0.22	<0.22	--	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22
1,1-Dichloroethylene	µg/L	7	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.56	--	<0.56	--	<0.56	<0.56	--	<0.56	<0.56	--	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56
1,2,3-Trichloropropane	µg/L	0.0058	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.59	--	<0.59	--	<0.59	<0.59	--	<0.59	<0.59	--	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59
1,2-Dibromo-3-chloropropane	µg/L	0.2	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.2	--	<1.2	--	<1.2	<1.2	--	<1.2	<1.2	--	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2
1,2-Dibromoethane	µg/L	0.05	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.34	--	<0.34	--	<0.34	<0.34	--	<0.34	<0.34	--	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34
1,2-Dichlorobenzene	µg/L	600	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.37	--	<0.37	--	<0.37	<0.37	--	<0.37	<0.37	--	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37
1,2-Dichloroethane	µg/L	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.39	--	<0.39	--	<0.39	<0.39	--	<0.39	<0.39	--	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39
1,2-Dichloropropane	µg/L	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.27	--	<0.27	--	<0.27	<0.27	--	<0.27	<0.27	--	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27
1,4-Dichlorobenzene	µg/L	75	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.23	--	<0.23	--	<0.23	<0.23	--	<0.23	<0.23	--	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23
2-Butanone	µg/L	4000	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	***0.76 J***	***0.62 J***	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	***1.04***	<1.04	<1.04	<1	--	<2.1	--	<2.1	<2.1	--	<2.1	<2.1	--	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1
2-Hexanone	µg/L	NS	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	--	<2	--	<2	<2	--	<2	<2	--	<2	<2	<2	<2	<2	<2	<2
4-Methyl-2-pentanone	µg/L	560	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<2.1	--	<2.1	--	<2.1	<2.1	--	<2.1	<2.1	--	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1
Acetone	µg/L	6300	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<1.79	<1.79	<1.79	<1.79	<1.79	<1.79	<1.79	<1.79	<1.79	<1.79	<1.79	***2.13 J***	***3.62 J***	***1.98 J***	<3.1	--	***3.17 J***	--	<3.1	<3.1	--	<3.1	<3.1	--	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1
Acrylonitrile	µg/L	0.32	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<2.2	--	<2.2	--	<2.2	<2.2	--	<2.2	<2.2	--	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2
Benzene	µg/L	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.22	--	<0.22	--	<0.22	<0.22	--	<0.22	<0.22	--	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22
Bromochloromethane	µg/L	90	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.54	--	<0.54	--	<0.54	<0.54	--	<0.54	<0.54	--	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54
Bromodichloromethane	µg/L	80	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.39	--	<0.39	--	<0.39	<0.39	--	<0.39	<0.39	--	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39
Bromomethane	µg/L	10	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<1.1	--	<1.1	--	<1.1	<1.1	--	<1.1	<1.1	--	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Carbon disulfide	µg/L	700	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.15	<0.15	<0.15	***0.181 J***	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.45	--	<0.45	--	<0.45	<0.45	--	<0.45	<0.45	--	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45
Carbon Tetrachloride	µg/L	5	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.65	--	<0.65	--	<0.65	<0.65	--	<0.65	<0.65	--	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65
Chlorobenzene	µg/L	100	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.4	--	<0.4	--	<0.4	<0.4	--	<0.4	<0.4	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Chloroethane	µg/L	2800	<4	***130***	<4	<4	<4	<4	<4	<4	<4	<4	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.79	--	<0.79	--	<0.79	<0.79	--	<0.79	<0.79	--	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79
Chloromethane	µg/L	NS	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.61	--	<0.61	--	<0.61	<0.61	--	<0.61	<0.61	--	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61
cis-1,2-Dichloroethylene	µg/L	70	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.21	--	<0.21	--	<0.21	<0.21	--	<0.21	<0.21	--	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21
cis-1,3-Dichloropropene	µg/L	NS	<5	<5	<5	<5	<5	<5	<5	<5	<10	<5	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.25	--	<0.25	--	<0.25	<0.25	--	<0.25	<0.25	--	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Dibromochloromethane	µg/L	80	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.75	--	<0.75	--	<0.75	<0.75	--	<0.75	<0.75	--	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75
Dibromomethane	µg/L	70	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.33	--	<0.33	--	<0.33	<0.33	--	<0.33	<0.33	--	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Dichloromethane	µg/L	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<0.17	<0.17	***0.23 J***	<0.17	<0.17	***0.954 J***	<0.17	<0.17	<0.17	<0.17	<0.17	***0.468 J***	<0.17	<0.17	<1.7	--	<1.7	--	<1.7	<1.7	--	<1.7	<1.7	--	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7
Ethylbenzene	µg/L	700	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.31	--	<0.31	--	<0.31	<0.31	--	<0.31	<0.31	--	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31
Iodomethane	µg/L	NS	<10	<10	<10	<10	<10	<10	<10	<10	<20	<10	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<7	--	<7	--	<7	<7	--	<7	<7	--	<7	<7	<7	<7	<7	<7	<7
Styrene	µg/L	100	<1	<1	<1	<1

Black Hawk County Landfill
Appendix II Results
Monitoring Well OW-113B

Parameter Name	Units	GPS	Oct-20	Mar-21	Jun-21	Nov-21	Apr-22	Nov-22	Apr-23	Sep-23	May-24	Oct-24
Alcohols/Gycols by GC												
Acetonitrile	µg/L	NS	<404	--	--	<404	--	<404	--	--	--	--
Isobutanol	µg/L	2100	<553	--	--	<553	--	<553	--	--	--	--
Herbicides (GC)												
2,4,5-T	µg/L	70	***0.0533 J***	--	--	<0.153	--	Sample Lost	--	--	--	--
2,4-D	µg/L	70	<0.0197	--	--	<0.599	--	Sample Lost	--	--	--	--
Silvex (2,4,5-TP)	µg/L	50	<0.0331	--	--	<0.141	--	Sample Lost	--	--	--	--
Inorganics												
Cyanide	µg/L	200	<5	--	--	<5.3	--	<4.3	--	--	--	--
Mercury	µg/L	2	<0.1	--	--	<0.15	--	<0.11	--	--	--	--
Sulfide	µg/L	NS	***13000***	<10000	<231	<231	<231	<231	<231	<231	<1410	<1.41
Tin	µg/L	4200	<2.4	--	--	<3	--	<3	--	--	--	--
PCBs (EPA Method 8082)												
PCB-1016	µg/L	NS	<0.295	--	--	<0.299	--	<0.198	--	--	--	--
PCB-1221	µg/L	NS	<0.295	--	--	<0.299	--	<0.198	--	--	--	--
PCB-1232	µg/L	NS	<0.295	--	--	<0.299	--	<0.198	--	--	--	--
PCB-1242	µg/L	NS	<0.295	--	--	<0.299	--	<0.198	--	--	--	--
PCB-1248	µg/L	NS	<0.239	--	--	<0.241	--	<0.128	--	--	--	--
PCB-1254	µg/L	NS	<0.239	--	--	<0.241	--	<0.128	--	--	--	--
PCB-1260	µg/L	NS	<0.239	--	--	<0.241	--	<0.128	--	--	--	--
Pesticides (EPA Method 8081A)												
4,4'-DDD	µg/L	0.73	<0.00205	--	--	<0.00966	--	<0.0314	--	--	--	--
4,4'-DDE	µg/L	0.51	<0.00239	--	--	<0.00977	--	<0.0314	--	--	--	--
4,4'-DDT	µg/L	0.51	***0.0046 J***	--	--	<0.0138	--	<0.0488	--	--	--	--
Aldrin	µg/L	0.01	<0.00511	--	--	<0.0138	--	<0.0372	--	--	--	--
alpha-BHC	µg/L	0.028	<0.00193	--	--	<0.0115	--	<0.0337	--	--	--	--
beta-BHC	µg/L	0.042	<0.00545	--	--	<0.0149	--	<0.043	--	--	--	--
Chlordane	µg/L	2	<0.0727	--	--	<0.253	--	<0.942	--	--	--	--
delta-BHC	µg/L	2.1	<0.00261	--	--	<0.0172	--	<0.0314	--	--	--	--
Dieldrin	µg/L	0.011	<0.00227	--	--	<0.0138	--	<0.0302	--	--	--	--
Endosulfan I	µg/L	42	<0.00227	--	--	<0.0126	--	<0.0384	--	--	--	--
Endosulfan II	µg/L	42	<0.00216	--	--	<0.00931	--	<0.0337	--	--	--	--
Endosulfan sulfate	µg/L	NS	<0.00284	--	--	<0.00966	--	<0.0349	--	--	--	--
Endrin	µg/L	2	<0.00216	--	--	<0.0115	--	<0.0302	--	--	--	--
Endrin aldehyde	µg/L	2.1	<0.0083	--	--	<0.011	--	<0.0337	--	--	--	--
gamma-BHC (Lindane)	µg/L	0.2	<0.00216	--	--	<0.0161	--	<0.0419	--	--	--	--
Heptachlor	µg/L	0.4	<0.00295	--	--	<0.0138	--	<0.0384	--	--	--	--
Heptachlor epoxide	µg/L	0.2	<0.00693	--	--	<0.0105	--	<0.0337	--	--	--	--
Methoxychlor	µg/L	40	***0.00353 J***	--	--	<0.0161	--	<0.0477	--	--	--	--
Toxaphene	µg/L	3	<0.0659	--	--	<0.471	--	<0.802	--	--	--	--
Semivolatile Organics by GC/MS												
1,2,4,5-Tetrachlorobenzene	µg/L	2.1	<1.84	--	--	<1.7	--	<0.54	--	--	--	--
1,3,5-Trinitrobenzene	µg/L	NS	<1.49	--	--	<1.38	--	<2.3	--	--	--	--
1,3-Dinitrobenzene	µg/L	1	<1.15	--	--	<1.06	--	<3.2	--	--	--	--
1,4-Naphthoquinone	µg/L	NS	<1.13	--	--	<1.04	--	<3.6	--	--	--	--
1,4-Phenylenediamine	µg/L	NS	<0.575	--	--	<0.532	--	<1.9	--	--	--	--
1-Naphthylamine	µg/L	NS	<1.01	--	--	<0.936	--	<2.5	--	--	--	--
2,3,4,6-Tetrachlorophenol	µg/L	NS	<1.14	--	--	<1.05	--	<5.3	--	--	--	--
2,4,5-Trichlorophenol	µg/L	700	<1.26	--	--	<1.17	--	<5.3	--	--	--	--
2,4,6-Trichlorophenol	µg/L	16	<1.38	--	--	<1.28	--	<5	--	--	--	--
2,4-Dichlorophenol	µg/L	20	<1.26	--	--	<1.17	--	<0.85	--	--	--	--
2,4-Dimethylphenol	µg/L	100	<1.15	--	--	<1.06	--	<0.58	--	--	--	--
2,4-Dinitrophenol	µg/L	14	<6.55	--	--	<6.06	--	<13	--	--	--	--
2,4-Dinitrotoluene	µg/L	0.25	<1.26	--	--	<1.17	--	<6.4	--	--	--	--
2,6-Dichlorophenol	µg/L	NS	<1.26	--	--	<1.17	--	<0.69	--	--	--	--
2,6-Dinitrotoluene	µg/L	0.26	<1.26	--	--	<1.17	--	<0.52	--	--	--	--
2-Acetylaminofluorene	µg/L	NS	<1.38	--	--	<1.28	--	<2.7	--	--	--	--
2-Chloronaphthalene	µg/L	560	<1.49	--	--	<1.38	--	<0.64	--	--	--	--
2-Chlorophenol	µg/L	40	<1.26	--	--	<1.17	--	<0.54	--	--	--	--
2-Methylnaphthalene	µg/L	28	<1.49	--	--	<1.38	--	<0.59	--	--	--	--
2-Methylphenol (o-Cresol)	µg/L	35	<1.15	--	--	<1.06	--	<0.65	--	--	--	--
2-Naphthylamine	µg/L	0.097	<0.989	--	--	<0.915	--	<2.1	--	--	--	--
2-Nitroaniline	µg/L	NS	<1.38	--	--	<1.28	--	<5.9	--	--	--	--
2-Nitrophenol	µg/L	NS	<1.84	--	--	<1.7	--	<6.8	--	--	--	--
3,3'-Dichlorobenzidine	µg/L	0.39	<2.07	--	--	<1.91	--	<1.4	--	--	--	--
3,3'-Dimethylbenzidine	µg/L	NS	<2.3	--	--	<2.13	--	<1.5	--	--	--	--
3/4-Methylphenol	µg/L	70	<0.874	--	--	<0.809	--	<0.7	--	--	--	--
3-Methylcholanthrene	µg/L	NS	<2.87	--	--	<2.66	--	<0.32	--	--	--	--
3-Nitroaniline	µg/L	NS	<1.15	--	--	<1.06	--	<2.7	--	--	--	--
4,6-Dinitro-2-methylphenol	µg/L	NS	<2.87	--	--	<2.66	--	<6.9	--	--	--	--
4-Aminobiphenyl	µg/L	0.0083	<1.1	--	--	<1.02	--	<2.2	--	--	--	--
4-Bromophenyl phenyl ether	µg/L	NS	<2.18	--	--	<2.02	--	<0.7	--	--	--	--
4-Chloro-3-methylphenol	µg/L	700	<1.09	--	--	<1.01	--	<0.84	--	--	--	--
4-Chloroaniline	µg/L	28	<1.38	--	--	<1.28	--	<0.62	--	--	--	--
4-Chlorophenyl phenyl ether	µg/L	NS	<1.49	--	--	<1.38	--	<0.69	--	--	--	--
4-Nitroaniline	µg/L	NS	<1.95	--	--	<1.81	--	<1.3	--	--	--	--
4-Nitrophenol	µg/L	60	<2.87	--	--	<2.66	--	<7.6	--	--	--	--
5-Nitro-o-toluidine	µg/L	NS	<3.56	--	--	<3.3	--	<2.8	--	--	--	--
7,12-Dimethylbenz (a) anthracene	µg/L	NS	<1.06	--	--	<0.979	--	<1.9	--	--	--	--
Acenaphthene	µg/L	420	<1.49	--	--	<1.38	--	<0.64	--	--	--	--
Acenaphthylene	µg/L	210	<1.49	--	--	<1.38	--	<0.72	--	--	--	--
Acetophenone	µg/L	NS	<3.45	--	--	<3.19	--	<0.69	--	--	--	--
Anthracene	µg/L	2100	<1.26	--	--	<1.17	--	<0.87	--	--	--	--
Benzo (a) anthracene	µg/L	0.24	<1.26	--	--	<1.17	--	<0.85	--	--	--	--
Benzo (a) pyrene	µg/L	0.2	<1.72	--	--	<1.6	--	<8.1	--	--	--	--
Benzo (b) fluoranthene	µg/L	0.24	<1.38	--	--	<1.28	--	<4.9	--	--	--	--
Benzo (g,h,i) perylene	µg/L	21	<1.84	--	--	<1.7	--	<6.3	--	--	--	--
Benzo (k) fluoranthene	µg/L	2.4	<1.38	--	--	<1.28	--	<2.2	--	--	--	--
Benzyl alcohol	µg/L	700	<1.26	--	--	<1.17	--	<1.3	--	--	--	--
Bis(2-chloroethoxy)methane	µg/L	NS	<1.26	--	--	<1.17	--	<0.76	--	--	--	--
Bis(2-chloroethyl)ether	µg/L	0.16	<1.26	--	--	<1.17	--	<0.82	--	--	--	--
Bis(2-chloroisopropyl) ether	µg/L	300	<1.38	--	--	<1.28	--	<0.54	--	--	--	--
Bis(2-ethylhexyl)phthalate	µg/L	6	<2.99	--	--	<2.77	--	<5.5	--	--	--	--
Butyl benzyl phthalate	µg/L	140	<1.72	--	--	<1.6	--	<5.4	--	--	--	--
Chlorobenzilate	µg/L	NS	<3.33	--	--	<3.09	--	<3.6	--	--	--	--
Chrysene	µg/L	24	<1.26	--	--	<1.17	--	<0.87	--	--	--	--
Diallate (cis or trans)	µg/L	NS	<1.49	--	--	<1.38	--	<4	--	--	--	--
Dibenzo (a,h) anthracene	µg/L	0.024	<2.18	--	--	<2.02	--	<3.9	--	--	--	--
Dibenzofuran	µg/L	7	<1.38	--	--	<1.28	--	<0.74	--	--	--	--
Diethyl phthalate	µg/L	5600	<1.26	--	--	<1.17	--	<1.7	--	--	--	--
Dimethoate	µg/L	1.4	<1.15	--	--	<1.06	--	<3.6	--	--	--	--
Dimethyl phthalate	µg/L	NS	<2.87	--	--	<2.66	--	<1	--	--	--	--
Di-n-butyl phthalate	µg/L	700	<1.38	--	--	<1.28	--	<5.6	--	--	--	--
Di-n-octyl phthalate	µg/L	140	<3.45	--	--	<3.19	--	<7	--	--	--	--
Dinoseb	µg/L	7	<0.575	--	--	<0.532	--	<2.4	--	--	--	--
Diphenylamine	µg/L	180	<1.01	--	--	<0.936	--	<6	--	--	--	--
Disulfoton	µg/L	0.7	<0.736	--	--	<0.681	--	<2.4	--	--	--	--
Ethyl Methanesulfonate	µg/L	NS	<0.575	--	--	<0.532	--	<3.6	--	--	--	--
Famphur	µg/L	NS	<0.736	--	--	<0.681	--	<3.8	--	--	--	--
Fluoranthene	µg/L	280	<1.08	--	--	<1	--	<1.7	--	--	--	--
Fluorene	µg/L	280	<1.49	--	--	<1.38	--	<0.79	--	--	--	--
Hexachlorobenzene	µg/L	1	<1.61	--	--	<1.49	--	<0.7	--	--	--	--
Hexachlorobutadiene	µg/L	1	<1.38	--	--	<1.28	--	<0.86	--	--	--	--
Hexachlorocyclopentadiene	µg/L	50	<2.41	--	--	<2.23	--	<5.1	--	--	--	--
Hexachloroethane	µg/L	1	<1.49	--	--	<1.38	--	<0.97	--	--	--	--
Hexachloropropene	µg/L	NS	<1.84	--	--	<1.7	--	<2.6	--	--	--	--
Indeno (1,2,3-cd) pyrene	µg/L	0.24	<2.3	--	--	<2.13	--	<4.2	--	--	--	--
Isodrin	µg/L	NS	<0.667	--	--	<0.617	--	<4.7	--	--	--	--
Isophorone	µg/L	100	<1.14	--	--	<1.05	--	<0.93	--	--	--	--
Isosafrole	µg/L	NS	<0.575	--	--	<0.532	--	<2.3	--	--	--	--
Kepone	µg/L	NS	<2.07	--	--	<1.91	--	<1	--	--	--	--
Methapyrilene	µg/L	NS	<2.18	--	--	<2.02	--	<0.76	--	--	--	--
Methyl Methanesulfonate	µg/L	1.8	<0.575	--	--	<0.532	--	<3.3	--	--	--	--
Nitrobenzene	µg/L	14	<1.26	--	--	<1.17	--	<0.8	--	--	--	--
N-Nitrosodiethylamine	µg/L	NS	<0.575	--	--	<0.532	--	<3.4	--	--	--	--
N-Nitrosodimethylamine	µg/L	0.0034	<1.05	--	--	<0.968	--	<0.72	--	--	--	--
N-Nitrosodi-n-butylamine	µg/L	0.032	<0.575	--	--	<0.532	--	<3.9	--	--	--	--
N-Nitrosodi-n-propylamine	µg/L	NS	<1.15	--	--	<1.06	--	<0.92	--	--	--	--
N-Nitrosodiphenylamine	µg/L	36	<1.09	--	--	<1.01	--	<0.75	--	--	--	--
N-Nitrosomethylethylamine	µg/L	0.008	<1.49	--	--	<1.38	--	<4.9	--	--	--	--
N-Nitrosopiperidine	µg/L	NS	<0.575	--	--	<0.532	--	<2.7	--	--	--	--
N-Nitrosopyrrolidine	µg/L	0.083	<0.575	--	--	<0.532	--	<3.6	--	--	--	--
O,O,O-Triethyl phosphorothioate	µg/L	NS	<0.575	--	--	<0.532	--	<3.2	--	--	--	--
o-Toluidine	µg/L	11	<0.77	--	--	<0.713	--	<2.9	--	--	--	--
p-(Dimethylamino)azobenzene	µg/L	NS	<0.897	--	--	<0.83	--	<2.2	--	--	--	--
Parathion-ethyl	µg/L	NS	<1.84	--	--	<1.7	--	<2.2	--	--	--	--
Parathion-methyl	µg/L	1	<0.862	--	--	<0.798	--	<2.3	--	--	--	--
Pentachlorobenzene	µg/L	NS	<0.667	--	--	<0.617	--	<2.8	--	--	--	--
Pentachloronitrobenzene	µg/L	NS	<0.575	--	--	<0.532	--	<5.8	--	--	--	--
Pentachlorophenol	µg/L	1	<2.64	--	--	<2.45	--	<9.6	--	--	--	--
Phenacetin	µg/L	NS	<2.07	--	--	<1.91	--	<1.9	--	--	--	--
Phenanthrene	µg/L	210	<1.26	--	--	<1.17	--	<0.79	--	--	--	--
Phenol	µg/L	2000	<2.76	--	--	<2.55	--	<1.1	--	--	--	--
Phorate	µg/L	1.4	<0.575	--	--	<0.532	--	<3.2	--	--	--	--
Pronamide	µg/L	5	<0.575	--	--	<0.532	--	<2.7	--	--	--	--
Pyrene	µg/L	210	<1.61	--	--	<1.49	--	<0.79	--	--	--	--
Safrole	µg/L	NS	<0.575	--	--	<0.532	--	<2.8	--	--	--	--
Thionazin	µg/L	NS	<0.874	--	--	<0.809	--	<3.5	--	--	--	--
Volatile Organic Compounds												
1,1-Dichloropropene	µg/L	NS	<0.43	--	--	<0.43	--	<0.43	--	--	--	--
1,2,4-Trichlorobenzene	µg/L	70	<0.75	--	--	<0.75	--	<0.75	--	--	--	--
1,3-Dichlorobenzene	µg/L	600	<0.3	--	--	<0.3	--	<0.3	--	--	--	--
1,3-Dichloropropane	µg/L	NS	<0.4	--	--	<0.4	--	<0.4	--	--	--	--
2,2-Dichloropropane	µg/L	NS	<0.69	--	--	<0.69	--	<0.69	--	--	--	--
Acrolein	µg/L	NS	<3.6	--	--	<3.6	--	<3.6	--	--	--	--
Allyl chloride	µg/L	NS	<0.7	--	--	<0.7	--	<0.7	--	--	--	--
Chloroprene	µg/L	NS	<0.23	--	--	<0.23	--	<0.23	--	--	--	--
Dichlorodifluoromethane	µg/L	1000	<0.25	--	--	<0.25	--	<0.25	--	--	--	--
Ethyl Methacrylate	µg/L	NS	<0.68	--	--	<0.68	--	<0.68	--	--	--	--
Methacrylonitrile	µg/L	NS	<3.3	--	--	<3.3	--	<3.3	--	--	--	--
Methyl Methacrylate	µg/L	NS	<0.76	--	--	<0.76	--	<0.76	--	--	--	--
Naphthalene	µg/L	100	<3	--	--	<3	--	<3	--	--	--	--
Propionitrile	µg/L	NS	<3.4	--	--	<3.4	--	<3.4	--	--	--	--

Detections at or above the RL are shown in bold italics on gray background.

Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.

NS = No standard

Black Hawk County Landfill
Appendix I Results
Monitoring Well OW-114B

Parameter Name	Units	GPS	Oct-07	Jan-08	Apr-08	Jun-08	Sep-08	Feb-09	May-09	Aug-09	Mar-10	Sep-10	May-11	Nov-11	May-12	Dec-12	Apr-13	Oct-13	Mar-14	Aug-14	Mar-15	Aug-15	Mar-16	Oct-16	Dec-16	Apr-17	Sep-17	Mar-18	Sep-18	Mar-19	Sep-19	Mar-20	Oct-20	Mar-21	Nov-21	May-22	Nov-22	Apr-23	Oct-23	May-24	Oct-24
Appendix I Inorganics																																									
Total Suspended Solids	mg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<3.77	***2.5***	<1.2	***4.6***	<0.581	***1 J***	***5.37***	***2.25***	***2.5***	***1 J***	***0.875 J***	***1.25 J***	***1.75 J***	<0.638	<0.638	***1 J***	***0.875 J***	***0.75 J***	<1.7	<1.7	***1.88***	<1.39
Turbidity, Field	NTU	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	***10.35***	***0.853***	***0.9563***	***6.833***	***0.0031***	***18.64***	***3.01***	***8.165***	***1.861***	***0.43***	***3.46***	***0.69***	***0.43***	***0.09***	0	***1.15***	0	***2.76***	***2.01***	***19.11***	***1.55***
Turbidity, Lab	NTU	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.6	***4.9***	<0.7	***5.1***	<0.4	<0.4	***13.4***	***6.9***	***4.9***	<0.4	<0.4	***0.69 J***	***3.97***	--	--	--	--	--	--	--	--	--
Antimony	µg/L	6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<2.73	***5.18 J***	<0.584	<0.271	<0.4	***0.501 J***	<0.161	<0.161	<0.161	<0.237	<0.237	<0.237	<0.185	<0.185	***0.272 J***	<0.42	<0.53	<0.53	<0.58	<0.51	<1.1	<0.69	<0.69	<1	<1	<1	<1
Antimony, Dissolved	µg/L	NS	--	--	--	--	--	<6	<6	<6	<6	<6	<6	<6	<2.73	***6.25***	<0.584	<0.271	<0.4	<0.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	***45.7***	***48.2***	***11.8***	***14.1***	***14.1***	***12.5***	***3.38***	***3.22***	***1.21***	<1	<2	<0.6	<0.185	***0.757 J***	***6.27***	***0.897 J***	***2.55 J***	<0.945	***1.3 J***	<0.945	***0.823 J***	***1.84 J***	<0.672	***1.58 J***	***2.26***	***2.14***	<0.57	<0.75	***0.924 J***	<0.88	<0.88	<0.75	<0.75	<0.75	***0.681 J***	***0.929 J***	<0.53	***0.697 J***
Arsenic, Dissolved	µg/L	NS	--	--	--	--	--	***14.5***	***3.62***	***2.21***	<3	***3.29***	<2	<0.47	<0.185	<0.185	<2.72	***0.688 J***	***2.15 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	***185***	***313***	***72.5***	***70.7***	***125***	***141***	***101***	***109***	***84.8***	***56.8***	***51.9***	***62.9***	***58.5***	***88.7***	***61.2***	***54.4***	***66.7***	***62***	***63.6***	***71.3***	***51.7***	***18.6***	***51.3***	***45.3***	***45.2***	***49.6***	***47.1***	***36.7***	***51.7***	***48.5***	***47.2***	***42.7***	***46.4***	***55.9***	***54.8***	***62.7***	***62.1***	***55.8***	***56.6***
Barium, Dissolved	µg/L	NS	--	--	--	--	--	***142***	***88.6***	***107***	***79.9***	***56.5***	***60.2***	***58.1***	***59.8***	***81.9***	***56.6***	***63.1***	***66.6***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.051	<0.169	<0.169	<0.348	<0.08	<0.08	<0.039	***0.041 J***	<0.039	<0.221	<0.221	<0.221	<0.125	<0.125	<0.125	<0.19	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<2.7	<0.33	<0.33	<0.33	<0.33
Beryllium, Dissolved	µg/L	NS	--	--	--	--	--	<1	<1	<1	<1	<1	<1	<0.051	<0.169	<0.169	<0.348	<0.08	<0.08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	<0.5	***0.501***	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.195	<0.195	***0.171 J***	<0.195	<0.53	<0.1	<0.1	***0.213 J***	<0.112	***0.142 J***	***0.142 J***	<0.0351	***0.065 J***	<0.0441	<0.0441	***0.174 J***	***0.086 J***	***0.087 J***	***0.061 J***	***0.066 J***	***0.051 J***	<0.051	<0.051	<0.0555	<0.055	***0.107 J***	***0.109 J***	<0.1	<0.1
Cadmium, Dissolved	µg/L	NS	--	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.195	<0.195	***0.172 J***	<0.195	<0.53	<0.1	<0.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	<20	***22.6***	***2.89***	<20	<20	<20	<20	<20	<2	<20	<20	<1.81	<1.81	***192***	<2.09	***0.963 J***	***1.88 J***	<1.24	<1.24	<1.24	<0.355	***2.02 J***	<0.355	<0.729	<0.729	<0.729	<0.76	<0.98	<0.98	<1.1	<1.1	<1.1	***1.81 J***	<1.1	***1.51 J***	<1.1	<1.1	***1.93 J***	***1.69 J***
Chromium, Dissolved	µg/L	NS	--	--	--	--	--	<20	<20	<20	<2	<20	<20	<1.81	<1.81	<1.81	<2.09	<0.5	<0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	9.83	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	***4.37 J***	***2.25 J***	***5.1 J***	***4.37***	***3.91***	***6.15***	***1.24***	***4.5***	***2.65***	***2.82***	***1.21***	***2.9***	***2.86***	***3.38***	***3.53***	***0.447 J***	***1.45***	***1.87***	***1.94***	***1.43***	***0.842***	***2.85***	***1.34***	***1.95***	***0.753***	***2.92***	***0.83***	***1.92***
Cobalt, Dissolved	µg/L	NS	--	--	--	--	--	<20	<20	<20	<20	<20	<20	<1.55	***2.23 J***	***4.63 J***	***3.83***	***4.97***	***5.1***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	1300	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	***12.7 J***	***4.39 J***	***3.64 J***	***3.19***	***2.39***	***2.79***	***2.74***	<0.485	***1.36 J***	***2.51 J***	<1.22	***2 J***	<2.19	<2.19	<2.19	***4.3 J***	<2	<2	<3.2	<1.5	***3.8 J***	<1.4	***3.14 J***	<1.8	***4.23 J***	<1.8	***2.93 J***	<1.8
Copper, Dissolved	µg/L	NS	--	--	--	--	--	<20	<20	<20	<20	<20	<20	***8.69 J***	***4.5 J***	***3.37 J***	***1.41 J***	***0.718 J***	***1.08 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<1	<0.821	<0.821	<1.04	<0.18	***0.271 J***	***0.176 J***	***0.146 J***	<0.0967	<0.211	<0.211	<0.211	<0.324	***0.979***	<0.324	<0.25	<0.27	<0.27	<0.27	<0.11	<0.21	<0.21	<0.24	<0.24	<0.24	<0.24	<0.26	<0.26
Lead, Dissolved	µg/L	NS	--	--	--	--	--	<4	<4	<4	<4	<4	<4	<1	***0.956 J***	<0.821	<1.04	<0.18	<0.18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	µg/L	722	***50.4***	***65***	<50	<50	<50	<50	<50	<50	<50	<50	<50	***54.7***	***58.2***	***59***	***29.4***	***25.3***	***29.8***	***11.6***	***23.2***	***13.8***	***9.25***	***1.99 J***	***22.1***	***12.2***	***15.3***	***17***	<3	***7.17***	***10.5***	***8.69***	***9.32***	***6.85***	***12.8***	***10.3***	***19.9***	***12***	***16.2***	***13***	***14***
Nickel, Dissolved	µg/L	NS	--	--	--	--	--	<50	<50	<50	<50	<50	<50	***48.2 J***	***56.1***	***48.5 J***	***25***	***28***	***22.3***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<1.69	<1.83	<1.83	<7.3	<0.7	<0.7	<3.34	<3.34	<3.34	<0.63	<0.63	<0.63	<0.928	<0.928	<0.928	***0.989 J***	<1	<1	<1	<1	<0.96	<0.96	<0.96	<0.96	<1.4	<1.4	<1.4	<1.4
Selenium, Dissolved	µg/L	NS	--	--	--	--	--	<5	<5	<5	<5	<5	<5	<1.69	<1.83	<1.83	<7.3	<0.7	<0.7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	µg/L	100	<20	<20	<1	<20	<20	<20	<20	<20	<20	<20	<20	<1.7	<1.7	<1.7	<1.7	<0.395	<0.033	<0.033	<0.042	<0.042	<0.042	<0.042	***0.19 J***	<0.153	<0.153	<0.14	<0.14	<0.14	<0.3	<0.37	<0.37	<0.37	<0.37	<0.42	<0.42	<0.49	<0.49	<0.5	<0.5	<0.5
Silver, Dissolved	µg/L	NS	--	--	--	--	--	<20	<20	<20	<20	<20	<20	<1.7	<1.7	<1.7	<1.7	<0.395	<0.033	<0.033	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<0.84	<0.523	<0.523	<0.134	<0.05	***0.0513 J***	<0.0325	<0.0325	<0.0325	***0.036 J***	***0.151 J***	<0.0255	<0.0644	<0.0644	***0.129 J***	<0.17	<0.27	<0.27	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.57	***1.5***
Thallium, Dissolved	µg/L	NS	--	--	--	--	--	<2	<2	<2	<2	<2	<10	<0.84	<0.523	<0.523	<0.134	<0.05	***0.157 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium	µg/L	35	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<2.1	***4.57 J***	<2.1	<4.17	<0.5	<0.5	<0.449	<0.449	<0.449	<0.255	<0.255	<0.255	<0.84	<0.84	<0.84	<0.52	<0.82	<0.82	<0.82	<0.85	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Vanadium, Dissolved	µg/L	NS	--	--	--	--	--	<50	<50	<50	<50	<50	<50	<2.1	***2.59 J***	<2.1	<4.17	<0.5	<0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	2000	***87.5***	<20	***23.8***	***103***	***30.1***	***53.3***	<20	***76.2***	***79.3***	***29.4***	<20	<9.11	***84.4***	***74.5***	<3.13	***4.18 J***	***12.2***	<6.95	<6.95	<6.95	***28.4***	***6.03 J***	<5.21	<11.5	<11.5	<13.5	<10	<10	<10	<10	<10	<10	<10	<10	<10	<6.4	***10.2 J***	<9.7	<9.7
Zinc, Dissolved	µg/L	NS	--	--	--	--	--	***54***	<20	***72***	***157***	***34.6***	<20	<9.11	***24***	***72.9***	***6.04 J***	***4.49 J***	***12.7***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Appendix I Organics																																									
1,1,1,2-Tetrachloroethane	µg/L	70	<10	<1	<10	<1	<1	<1	<1	<1	<2	<5	<1	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38
1,1,1-Trichloroethane	µg/L	200	<10	<1	<10	<1	<1	<1	<1	<1	<1	<1	<1	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19
1,1,2,2-Tetrachloroethane	µg/L	0.3	<10	<1	<10	<1	<1	<1	<1	<1	<1	<2	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47
1,1,2-Trichloroethane	µg/L	5	<10	<1	<10	<1	<1	<1	<1	<1	<1	<2	<1	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45
1,1-Dichloroethane	µg/L	140	<10	<1	<10	<1	<1	<1	<1	<1	<1	<2	<1	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22
1,1-Dichloroethylene	µg/L	7	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56
1,2,3-Trichloropropane	µg/L	0.0058	<10	<1	<10	<1	<1	<1	<1	<1	<2	<1	<1	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59
1,2-Dibromo-3-chloropropane	µg/L	0.2	<100	<10	<100	<10	<10	<10	<10	<10	<10	<10	<10	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2
1,2-Dibromoethane	µg/L	0.05	<100	<10	<100	<10	<10	<10	<10	<10	<10	<10	<10	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34
1,2-Dichlorobenzene	µg/L	600	<10	<1	<10	<1	<1	<1	<1	<1	<1	<1	<1	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37
1,2-Dichloroethane	µg/L	5	<10	<1	<10	<1	<1	<1	<1	<1	<1	<1	<1	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39
1,2-Dichloropropane	µg/L	5	<10	<1	<10	<1	<1	<1	<1	<1	<1	<1	<1	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27
1,4-Dichlorobenzene	µg/L	75	<10	<1	<10	<1	<1	<1	<1	<1	<1	<2	<1	***0.32 J***	<0.2	***0.43 J***	<0.2	<0.2	***0.353 J***	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23
2-Butanone	µg/L	4000	<100	<10	<100	<10	<10	<10	<10	<10	<10	<10	<10	***0.73 J***	***0.56 J***	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<1.04	<1.04	<1.04	<1.04	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1
2-Hexanone	µg/L	NS	<100	<10	<100	<10	<10	<10	<10	<10	<10	<10	<10	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
4-Methyl-2-pentanone	µg/L	560	<100	<10	<100	<10	<10	<10	<10	<10	<10	<10	<10	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1
Acetone	µg/L	6300	<100	<10	<100	<10	<10	<10	<10	<10	<10	<10	<10	<1.79	<1.79	***2.02 J***	<1.79	<1.79	<1.79	<1.79	***2.36 J***	<1.79	***2.46 J***	<1.79	<1.79	***2.74 J***	***2.54 J***	***5.14 J***	***12.2***	***3.84 J***	<3.1	<3.1	<3.1	<3.1	<3.1	***8.08 J***	<3.1	<3.1	<3.1	<3.1	<3.1
Acrylonitrile	µg/L	0.32	<100	<10	<100	<10	<10	<10	<10	<10	<10	<10	<10	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2
Benzene	µg/L	5	<5	***3.93***	<5	<0.5	***2.55***	***0.77***	***0.97***	***0.53***	<0.5	<0.5	<0.5	<0.11	<0.11	***0.16 J***	<0.11	<0.11	***0.229 J***	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	***3.58***	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22
Bromochloromethane	µg/L	90	<50	<5	<50	<5	<5	<5	<5	<5	<5	<5	<5	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54
Bromodichloromethane	µg/L	80	<10	<1	<10	<1	<1	<1	<1	<1	<1	<1	<1	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	***1.84***	<0.39	<0.39	<0.39	<0.39	<0.39
Bromomethane	µg/L	10	<40	<4	<40	<4	<4	<4	<4	<4	<4	<4	<4	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Carbon disulfide	µg/L	700	<10	<1	<10	<1	<1	<1	<1	<1	<1	<1	<1	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45
Carbon Tetrachloride	µg/L	5	<20	<2	<20	<2	<2	<2	<2	<2	<2	<5	<2	***0.24 J***	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65
Chlorobenzene	µg/L	100	<10	<1	<10	<1	<1	<1	<1	<1	<1	<1	<1	***0.54 J***	***0.21 J***	***0.73 J***	<0.19	***0.396 J***	<0.19	***0.458 J***	***1.16***	<0.19	<0.19	<0.19	<0.19	<0.19	***0.3 J***	***0.313 J***	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Chloroethane	µg/L	2800	<40	***9.71***	<40	<4	<4	<4	<4	***4.86***	<4	<4	***1.62 J***	<0.15	***1.66 J***	***3.66 J***	***2.66 J***	***2.42 J***	<0.15	***1.51 J***	<0.15	***1.17 J***	<0.15	***1.15 J***	***1.37 J***	***0.658 J***	<0.15	***1.85 J***	***0.79***	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79
Chloromethane	µg/L	NS	<30	<3	<30	<3	<3	<3	<3	<3	<3	<3	<3	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61
cis-1,2-Dichloroethylene	µg/L	70	<10	<1	<10	<1	<1	<1	<1	<1	<1	<1	<1	<0.13	<0.13	***0.14 J***	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	***0.153 J***	<0.13	***0.296 J***	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21
cis-1,3-Dichloropropene	µg/L	NS	<50	<5	<50	<5	<5	<5	<5	<5	<5	<10	<5	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Dibromochloromethane	µg/L	80	<50	<5	<50	<5	<5	<5	<5	<5	<5	<5	<5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	***0.888 J***	<0.75	<0.75	<0.75	<0.75	<0.75
Dibromomethane	µg/L	70	<10	<1	<10	<1	<1	<1	<1	<1	<1	<1	<1	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Dichloromethane	µg/L	5	<50	<5	<50	<5	<5	<5	<5	<5	<5	<5	<5	<0.17	<0.17	***0.31 J***	<0.17	<0.17	***0.6 J***	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7
Ethylbenzene	µg/L	700	<10	<1	<10	<1	<1	<1	<1	<1	<1	<1	<1	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31
Iodomethane	µg/L	NS	<100	<10	<100	<10	<10	<10	<20	<10	<10	<20	<10	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7
Styrene	µg/L	100	<10	<1	<10	<1	<1	<1	<1	<1	<2

Black Hawk County Landfill
Appendix II Results
Monitoring Well OW-114R

Parameter Name	Units	GPS	May-2009	Mar.-2010	Mar.-2014	Jun.-2014	Aug.-2014	Mar.-2015	Aug.-2015	Jan.-2016	Mar.-2016	Oct.-2016	Apr.-2017	Sep.-2017	Nov.-2017	Jan.-2018	Mar.-2018	Jul-18	Sep-18	Mar-19	Sep-19	Mar-20	Oct-20	Mar-21
Alcohols/Glycols by GC																								
Acetonitrile	ug/L	NS	<10000	<10000	<126	--	--	--	<126	--	--	<126	--	<126	--	--	--	--	<126	--	<126	--	<404	--
Isobutanol	ug/L	4300	<16000	<16000	<737	--	--	--	<737	--	--	<737	--	<737	--	--	--	--	<737	--	<737	--	<931	--
Herbicides (GC)																								
2,4,5-T	ug/L	70	<0.21	<0.5	<0.481	--	--	--	<0.515	--	--	<0.506	--	<0.519	--	--	--	--	<0.505	--	<0.563	--	<0.0377	--
2,4-D	ug/L	70	<1	<1	<0.516	--	--	--	<0.553	--	--	<0.543	--	<0.557	--	--	--	--	<0.543	--	<0.604	--	<0.0225	--
Silvex (2,4,5-TP)	ug/L	50	<0.21	<0.5	<0.321	--	--	--	<0.344	--	--	<0.337	--	<0.346	--	--	--	--	<0.337	--	<0.376	--	<0.0377	--
Inorganics																								
Cyanide	ug/L	200	<10	<10	<3.1	--	--	--	<3.04	--	--	4.13 J	--	<3.46	--	--	--	--	<4.2	--	<5	--	<5	--
Mercury	ug/L	2	<0.2	<0.2	<0.071	--	--	--	<0.0939	--	--	<0.142	--	<0.112	--	--	--	--	<0.15	--	<0.1	--	<0.1	--
Sulfide	ug/L	NS	<1000	<1000	<219	--	--	--	<219	--	--	<219	--	<219	--	--	--	--	<219	--	<281	--	<10000	--
Tin	ug/L	4200	<100	<100	<121	--	--	--	<1.8	--	--	<0.832	--	<1.62	--	--	--	--	<0.73	--	<1.8	--	<2.4	--
PCBs (EPA Method 8082)																								
PCB-1016	ug/L	NS	<0.8	<0.8	<0.0489	--	--	--	<0.0604	--	--	<0.0482	--	<0.105	--	--	--	--	<0.0487	--	<0.0484	--	<0.295	--
PCB-1221	ug/L	NS	<0.8	<0.8	<0.184	--	--	--	<0.16	--	--	<0.178	--	<0.386	--	--	--	--	<0.172	--	<0.17	--	<0.295	--
PCB-1232	ug/L	NS	<0.8	<0.8	<0.126	--	--	--	<0.13	--	--	<0.122	--	<0.265	--	--	--	--	<0.118	--	<0.117	--	<0.295	--
PCB-1242	ug/L	NS	<0.8	<0.8	<0.149	--	--	--	<0.13	--	--	<0.144	--	<0.313	--	--	--	--	<0.14	--	<0.138	--	<0.295	--
PCB-1248	ug/L	NS	<0.8	<0.8	<0.126	--	--	--	<0.11	--	--	<0.122	--	<0.265	--	--	--	--	<0.118	--	<0.117	--	<0.239	--
PCB-1254	ug/L	NS	<0.8	<0.8	<0.186	--	--	--	<0.092	--	--	<0.102	--	<0.222	--	--	--	--	<0.0988	--	<0.0979	--	<0.239	--
PCB-1260	ug/L	NS	<0.8	<0.8	<0.0508	--	--	--	<0.044	--	--	<0.0489	--	<0.106	--	--	--	--	<0.0473	--	<0.0468	--	<0.239	--
Pesticides (EPA Method 8081A)																								
4,4'-DDD	ug/L	0.73	<0.032	<0.032	<0.00297	--	--	--	<0.002	--	--	<0.00198	--	<0.00214	--	--	--	--	<0.00198	--	0.00342 J	--	<0.00205	<0.00209
4,4'-DDE	ug/L	0.51	<0.032	<0.032	<0.00248	--	--	--	0.00646 J	--	--	<0.00231	--	0.00334 J	--	--	--	--	<0.00228	--	0.00286 J	--	<0.00239	--
4,4'-DDT	ug/L	0.51	<0.032	<0.032	<0.00407	--	--	--	<0.00432	--	--	<0.00418	--	*0.0161*	*0.0202 J*	--	<0.00432	*0.00779 J*	<0.00413	<0.00432	<0.00408	*0.00468 J*	<0.00432	--
Aldrin	ug/L	0.01	<0.032	<0.032	<0.00157	--	--	--	0.000857 J	--	--	<0.00405	--	0.00314 J	--	--	--	--	<0.00488	--	<0.00484	--	<0.00511	--
alpha-BHC	ug/L	0.028	<0.032	<0.032	*0.00147 J*	<0.00187	*0.0033 J*	*0.00539 J*	<0.00188	--	--	<0.00187	--	*0.0186 J*	--	--	--	--	<0.00185	--	*0.00493 J*	--	<0.00193	--
beta-BHC	ug/L	0.042	<0.032	<0.032	*0.00841 J*	<0.00527	<0.00505	<0.005	*0.0307*	--	<0.00539	<0.00527	*0.00645 J*	*0.057*	--	<0.00533	<0.00545	*0.0177 J*	<0.00522	<0.00545	<0.00516	<0.00505	<0.00545	<0.00558
Chlordane	ug/L	2	<2	<2	<0.0736	--	--	--	<0.0711	--	--	<0.0765	--	<0.0762	--	--	--	--	<0.0698	--	<0.0698	--	<0.0747	--
delta-BHC	ug/L	2.1	<0.032	<0.032	<0.00268	--	--	--	<0.00278	--	--	<0.00253	--	<0.00274	--	--	--	--	<0.00325	--	<0.00247	--	<0.00261	--
Dieldrin	ug/L	0.011	<0.032	<0.032	<0.00323	--	--	--	<0.00222	--	--	<0.0022	--	*0.0153 J*	--	--	--	--	<0.00217	--	<0.00235	--	<0.00227	--
Endosulfan I	ug/L	42	<0.032	<0.032	<0.00221	--	--	--	<0.00222	--	--	<0.0022	--	*0.00844 J*	--	--	--	--	<0.00217	--	*0.00422 J*	--	*0.00311 J*	--
Endosulfan II	ug/L	42	<0.032	<0.032	<0.00219	--	--	--	<0.00211	--	--	<0.00209	--	<0.00229	--	--	--	--	<0.00207	--	<0.00209	--	<0.00216	--
Endosulfan sulfate	ug/L	NS	<0.032	<0.032	<0.00249	--	--	--	*0.00421 J*	*0.00361 J*	--	<0.00275	--	<0.00298	--	--	--	--	<0.00272	--	<0.00269	--	<0.00284	--
Endrin	ug/L	2	<0.032	<0.032	<0.00218	--	--	--	*0.00414 J*	<0.00194	--	<0.00209	--	*0.0114 J*	--	--	--	--	<0.00207	--	*0.00298 J*	--	<0.00216	--
Endrin aldehyde	ug/L	2.1	<0.032	<0.032	<0.00859	--	--	--	*0.0115 J*	<0.00745	--	<0.00802	--	*0.0574*	<0.0076	--	<0.00851	<0.00851	<0.00793	<0.00851	<0.00785	<0.00859	<0.00801	<0.00849
gamma-BHC (Lindane)	ug/L	0.2	<0.032	<0.032	*0.00768 J*	<0.00289	*0.0027 J*	*0.00441 J*	<0.00231	*0.00441 J*	--	<0.00289	--	*0.0265 J*	--	--	--	--	<0.00287	--	*0.00231 J*	--	<0.00298	--
Heptachlor	ug/L	0.4	<0.032	<0.032	<0.00299	--	--	--	*0.00726 J*	<0.00205	--	<0.00286	--	<0.00303	--	--	--	--	<0.00285	--	<0.00268	--	<0.00295	--
Heptachlor epoxide	ug/L	0.2	<0.032	<0.032	<0.00703	--	--	--	<0.00678	--	--	<0.00827	--	*0.0213 J*	--	--	--	--	<0.00659	--	<0.00659	--	<0.00693	--
Methoxychlor	ug/L	40	<0.032	<0.032	*0.0199 J*	*0.00479 J*	*0.0116 J*	*0.0111 J*	<0.00239	--	--	<0.00221	--	<0.0925	--	--	--	--	<0.00228	--	*0.00333 J*	--	*0.0157 J*	--
Toxaphene	ug/L	3	<2	<2	<0.0665	--	--	--	<0.0644	--	--	<0.0637	--	<0.089	--	--	--	--	<0.063	--	<0.0624	--	<0.0659	--
Semivolatile Organics by GC/MS																								
1,2,4,5-Tetrachlorobenzene	ug/L	2.1	<10	<10	<0.133	--	--	--	<0.121	--	--	<0.135	--	<0.125	--	--	--	--	<0.157	--	<0.153	--	<1.84	--
1,3,5-Trinitrobenzene	ug/L	NS	<10	<10	<1.42	--	--	--	<1.29	--	--	<1.48	--	<1.33	--	--	--	--	<1.4	--	<1.4	--	<1.49	--
1,3-Dinitrobenzene	ug/L	1	<10	<10	<0.189	--	--	--	<0.172	--	--	<0.191	--	<0.177	--	--	--	--	<1.13	--	<1.1	--	<1.15	--
1,4-Naphthoquinone	ug/L	NS	<10	<10	<0.158	--	--	--	<0.143	--	--	<0.157	--	<0.146	--	--	--	--	<0.464	--	<0.393	--	<2.13	--
1,4-Phenylenediamine	ug/L	NS	<10	<10	<3.33	--	--	--	<8.48	--	--	<9.44	--	<8.75	--	--	--	--	<9.44	--	<9.18	--	<9.575	--
1-Naphthylamine	ug/L	NS	<10	<10	<0.202	--	--	--	<0.184	--	--	<0.2	--	<0.25	--	--	--	--	<0.27	--	<0.262	--	<1.01	--
2,3,4,6-Tetrachlorophenol	ug/L	NS	<10	<10	<0.222	--	--	--	<0.202	--	--	<0.225	--	<0.208	--	--	--	--	<0.562	--	<0.546	--	<1.14	--
2,4,5-Trichlorophenol	ug/L	700	<10	<10	<0.304	--	--	--	<0.323	--	--	<0.36	--	<0.333	--	--	--	--	<0.787	--	<0.765	--	<1.26	--
2,4,6-Trichlorophenol	ug/L	16	<10	<10	<0.244	--	--	--	<0.222	--	--	<0.247	--	<0.229	--	--	--	--	<0.787	--	<0.765	--	<1.38	--
2,4-Dichlorophenol	ug/L	20	<10	<10	<0.307	--	--	--	<0.172	--	--	<0.169	--	<0.156	--	--	--	--	<0.346	--	<0.339	--	<1.26	--
2,4-Dimethylphenol	ug/L	100	<10	<10	<0.233	--	--	--	<0.214	--	--	<0.236	--	<0.219	--	--	--	--	<0.236	--	<0.23	--	<1.15	--
2,4-Dinitrophenol	ug/L	14	<20	<20	<1.89	--	--	--	<1.56	--	--	<1.8	--	<1.4	--	--	--	--	<2.9	--	<2.82	--	<8.55	--
2,4-Dinitrotoluene	ug/L	0.25	<10	<10	<0.211	--	--	--	<0.192	--	--	<0.213	--	<0.198	--	--	--	--	<0.517	--	<0.503	--	<1.26	--
2,6-Dichlorophenol	ug/L	NS	<10	<10	<0.244	--	--	--	<0.222	--	--	<0.247	--	<0.229	--	--	--	--	<0.247	--	<0.24	--	<1.26	--
2,6-Dinitrotoluene	ug/L	0.26	<10	<10	<0.307	--	--	--	<0.242	--	--	<0.27	--	<0.25	--	--	--	--	<0.27	--	<0.262	--	<1.26	--
2-Acetylaminofluorene	ug/L	NS	<10	<10	*0.112 J*	<0.292	<0.295	<0.304	<0.283	--	--	<0.315	--	<0.292	--	--	--	--	<0.38	--	<0.385	--	<1.38	--
2-Chloronaphthalene	ug/L	560	<10	<10	<0.256	--	--	--	<0.233	--	--	<0.258	--	<0.24	--	--	--	--	<0.258	--	<0.251	--	<1.49	--
2-Chlorophenol	ug/L	40	<10	<10	<0.167	--	--	--	<0.152	--	--	<0.169	--	<0.156	--	--	--	--	<0.169	--	<0.164	--	<1.26	--
2-Methylnaphthalene	ug/L	28	<10	<10	<0.211	--	--	--	<0.192	--	--	<0.213	--	<0.198	--	--	--	--	<0.213	--	<0.208	--	<1.49	--
2-Methylphenol (o-Cresol)	ug/L	35	<10	<10	<0.2	--	--	--	<0.182	--	--	<0.202	--	<0.188	--	--	--	--	<0.202	--	<0.197	--	<1.15	--
2-Naphthylamine	ug/L	0.057	<10	<10	<0.244	--	--	--	<0.222	--	--	<0.247	--	<0.229	--	--	--	--	<0.247	--	<0.24	--	<0.989	--
2-Nitroaniline	ug/L	NS	<10	<10	<0.256	--	--	--	<0.232	--	--	<0.258	--	<0.24	--	--	--	--	<1.38	--	<1.36	--	<1.38	--
2-Nitrophenol	ug/L	NS	<10	<10	<0.178	--	--	--	<0.162	--	--	<0.18	--	<0.167	--	--	--	--	<1.08	--	<1.06	--	<1.84	--
3,3'-Dichlorobenzidine	ug/L	0.39	<10	<10	<0.511	--	--	--	<0.465	--	--	<0.517	--	*0.479*	--	--	--	--	<0.93	--	<0.885	--	<2.07	--
3,3'-Dimethylbenzidine	ug/L	NS	<10	<10	<0.233	--	--	--	<0.212	--	--	<0.236	--	*0.295 J*	--	--	--	--	<0.236	--	<0.225	--	<2.3	--
3/4-Methylphenol	ug/L	70	<10	<10	<0.2	--	--	--	<0.182	--	--	<0.202	--	<0.188	--	--	--	--	<0.202	--	<0.197	--	<0.874	--
3-Methylcholanthrene	ug/L	NS	<10	<10	<0.344	--	--	--	<0.313	--	--	<0.348	--	<0.323	--	--	--	--	<1	--	<0.973	--	<2.07	--
3-Nitroaniline	ug/L	NS	<10	<10	<0.244	--	--	--	<0.222	--	--	<0.247	--	<0.229	--	--	--	--	<0.652	--	<0.634	--	<1.15	--
3,4-Dimeiy-2-methylphenol	ug/L	NS	<20	<20	<2.47	--	--	--	<2.24	--	--	<2.49	--	<2.31	--	--	--	--	<2.49	--	<2.43	--	<2.07	--
4-Aminobiphenyl	ug/L	0.0083	<20	<10	<0.353	--	--	--	<0.303	--	--	<0.337	--	<0.313	--	--	--	--	<0.337	--	<0.329	--	<1.1	--
4-Bromophenyl phenyl ether	ug/L	NS	<10	<10	<0.322	--	--	--	<0.293	--	--	<0.326	--	<0.302	--	--	--	--	<0.326	--	<0.317	--	<2.18	--
4-Chloro-3-methylphenol	ug/L	700	<10	<10	<0.211	--	--	--	<0.192	--	--	<0.213	--	<0.198	--	--	--	--	<0.262	--	<0.284	--	<1.09	--
4-Chloroaniline	ug/L	20	<10	<10	<0.167	--	--	--	<0.143	--	--	<0.157	--	*0.169 J*	--	--	--	--	<0.169	--	<0.164	--	<1.38	--
4-Chlorophenyl phenyl ether	ug/L	NS	<10	<10	<0.478	--	--	--	<0.253	--	--	<0.281	--	<0.26	--	--	--	--	<0.281	--	<0.273	--	<1.49	--
4-Nitroaniline	ug/L	NS	<10	<10	<0.256	--	--	--	<0.323	--	--	<0.36	--	<0.333	--	--	--	--	<0.36	--	<0.35	--	<1.95	--
4-Nitrophenol	ug/L	60	<10	<10	<0.133	--	--	--	<0.121	--	--	<0.135	--	<0.125	--	--	--	--	<1.55	--	<1.54	--	<2.07	--
5-Nitro-o-toluidine	ug/L	8.7	<10	<10	<0.189	--	--	--	<0.172	--	--	<0.191	--	<0.177	--	--	--	--	<0.191	--	<0.188	--	<3.06	--
7,12-Dimethylbenz (a) anthracene	ug/L	NS	<10	<10	<0.278	--	--	--	<0.253	--	--	<0.281	--	<0.26	--	--	--	--	<0.281	--	<0.273	--	<1.66	--
Acenaphthene	ug/L	420	<10	<10	<0.333	--	--	--	<0.303	--	--	<0.337	--	<0.313	--	--	--	--	<0.337	--	<0.328	--	<1.49	--
Acenaphthylene	ug/L	210	<10	<10	<0.233	--	--	--	<0.212	--	--	<0.236	--	<0.219	--	--	--	--	<0.652	--	<0.634	--	<1.49	--
Acetophenone	ug/L	NS	<10	<10	<0.244	--	--	--	<0.222	--	--	<0.247	--	<0.229	--	--	--	--	<0.393	--	<0.383	--	<3.45	--
Anthracene	ug/L	2100	<10	<10	<0.189	--	--	--	<0.172	--	--	<0.191	--	<0.177	--	--	--	--	<0.191	--	<0.188	--	<1.26	--
Benzo (a) anthracene	ug/L	0.24	<10	<10	<0.267	--	--	--	<0.242	--	--	<0.27	--	<0.25	--	--	--	--	<0.382	--	<0.372	--	<1.26	--
Benzo (a) pyrene	ug/L	0.2	<10	<10	<0.278	--	--	--	<0.253	--	--	<0.281	--	<0.26	--	--	--	--	<1.43	--	<1.39	--	<1.72	--
Benzo (b) fluoranthene	ug/L	0.24	<10	<10	<0.344	--	--	--	<0.313	--	--	<0.348	--	<0.323	--	--	--	--	<1.12	--	<1.09	--	<1.38	--
Benzo (g,h,i) perylene	ug/L	21	<10	<10	<0.256	--	--	--	<0.232	--	--	<0.258	--	<0.24	--	--	--	--	<1.48	--	<1.44	--	<1.84	--
Benzo (k) fluoranthene	ug/L	2.4	<10	<10	<0.222	--	--	--	<0.202	--	--	<0.225	--	<0.208	--	--	--	--	<0.64	--	<0.623	--	<1.38	--
Benzyl alcohol	ug/L	700	<10	<10	<0.2	--	--	--	<0.182	--	--	<0.202	--	<0.188	--	--	--	--	<0.674	--	<0.656	--	<1.26	--
Bis(2-chloroethoxy)methane	ug/L	NS	<10	<10	<0.389	--	--	--	<0.263	--	--	<0.292	--	<0.271	--	--	--	--	<0.292	--	<0.284	--	<1.26	--
Bis(2-chloroethyl)ether	ug/L	0.16	<10	<10	<0.2	--	--	--	<0.182	--	--	<0.202	--	<0.188	--	--	--	--	<0.211	--	<0.208	--	<1.26	--
Bis(2-chloroisopropyl) ether	ug/L	300	<10	<10	<0.2	--	--	--	<0.182	--	--	<0.202	--	<0.188	--	--	--	--	<0.202	--	<0.197	--	<1.38	--
Bis(2-ethylhexyl)phthalate	ug/L	6	<10	<10	<0.433	--	--	--	*1.6*	<0.39	*5.85 J+*	<0.438	<0.438	*0.914 J*	--	--	<0.424	--	<2.63	<2.73	<2.54	<2.74	<2.99	<2.77
Butyl benzyl phthalate	ug/L	140	<10	<10	<0.378	--	--	--	<0.343	--	--	<0.382	--	*0.946 J*	--	--	--	--	<1.72	--	<1.67	--	<1.72	--
Chlorobenzilate	ug/L	NS	<10	<10	<0.233	--	--	--	<0.212	--	--	<0.236	--	<0.219	--	--	--	--	<0.236	--	<0.23	--	<2.33	--
Chrysene	ug/L	24	<10	<10	<0.322	--	--	--	<0.293	--	--	<0.326	--	<0.302	--	--	--	--	<0.348	--	<0.339	--	<1.26	--
Dalkon (cis or trans)	ug/L	NS	<10	<10	<0.256	--	--	--	<0.232	--	--	<0.258	--	<0.24	--	--	--	--	<0.258	--	<0.251	--	<1.49	--
Dibenzo (a,h) anthracene	ug/L	0.024	<10	<10	<0.278	--	--	--	<0.253	--	--	<0.281	--	<0.26	--	--	--	--	<2.08	--	<2	--	<2.18	--
Dibenzofuran	ug/L	7	<10	<10	<0.267	--	--	--	<0.242	--	--	<0.27	--	<0.25	--	--	--	--	<0.27	--	<0.262	--	<1.38	--
Diethyl phthalate	ug/L	5600	<10	<10	*0.438 J*	<0.271	<0.274	*0.337 J*	<0.262	--	--	<0.292	--	<0.271	--	--	--	--	<0.974	--	<0.956	--	<1.26	--
Dimethoate	ug/L	1.4	<10	<10	<0.3	--	--	--	<0.273	--	--	<0.303	--	<0.281	--	--	--	--	<0.303	--	<0.295	--	<1.15	--
Dimethyl phthalate	ug/L	NS	<10	<10	<0.256	--	--	--	<0.232	--	--	<0.258	--	<0.24	--	--	--	--	<0.258	--	<0.251	--	<2.46	--
Di-n-butyl phthalate	ug/L	700	<10	<10	<0.367	--	--	--	<0.515	--	--	<0.573	--	<0.534	--	--	--	--	<1.29	--	<1.26	--	<1.38	--
Di-n-octyl phthalate	ug/L	140	<10	<10	<0.256	--	--	--	<0.232	--	--	*1.78 J*	--	<0.24	--	--	--	--	<2.58	--	<2.51	--	<2.45	--
Dinoseb	ug/L	7	<10	<10	<0.478	--	--	--	<0.434	--	--	<0.493	--	<0.448	--	--	--	--	<0.493	--	<0.47	--	<0.575	--
Diphenylamine	ug/L	180	<10	<10	<0.733	--	--	--	<0.667	--	--	<0.742	--	<0.688	--	--	--	--	<0.742	--	<0.723	--	<1.01	--
Disulfoton	ug/L	0.7	<70	<10	<0.322	--	--	--	<0.293	--	--	<0.326	--	<0.302	--	--	--	--	<0.326	--	<0.317	--	<0.736	--
Ethyl Methanesulfonate	ug/L	NS	<10	<10	<0.367	--	--	--	<0.152	--	--	<0.169	--	<0.156	--	--	--	--	<0.169	--	<0.164	--	<0.575	--
Famphur	ug/L	NS	<20	<20	<0.522	--	--	--	<0.475	--	--	<0.528	--	<0.49	--	--	--	--	<0.528	--	<0.514	--	<0.736	--
Fluoranthene	ug/L	280	<10	<10	<0.367	--	--	--	<0.333	--	--	<0.371	--	<0.344	--	--	--	--	<0.764	--	<0.743	--	<1.08	--
Fluorene	ug/L	280	<10	<10	<0.302	--	--	--	<0.293	--	--	<0.326	--	<0.302	--	--	--	--	<0.326	--	<0.317	--	<1.49	--
Hexachlorobenzene	ug/L	1	<10	<10	<0.3	--	--	--	<0.273	--	--	<0.303	--	<0.281	--	--	--	--	<0.303	--	<0.295	--	<1.61	--
Hexachlorobutadiene	ug/L	1	<10	<10	<0.144	--	--	--	<0.131	--	--	<0.146	--	<0.135	--	--	--	--	<0.191	--	<0.186	--	<1.38	--
Hexachlorocyclopentadiene	ug/L	50	<10	<10	<0.144	--	--	--	<0.131	--	--	<0.146	--	<0.135	--	--	--	--	<2.11	--	<2.07	--	<2.41	--
Hexachloroethane	ug/L	1	<10	<10	<0.144	--	--	--	<0.131	--	--	<0.146	--	<0.135	--	--	--	--	<0.157	--	<0.153	--	<1.49	--
Hexachloropropene	ug/L	NS	<10	<10	<1.82	--	--	--	<1.66	--	--	<1.84	--	<1.71	--	--	--	--	<1.84	--	<1.79	--	<1.84	--
Indeno (1,2,3-cd) pyrene	ug/L	0.24	<10	<10	<0.367	--	--	--	<0.293	--	--	<0.37	--	<0.35	--	--	--	--	<1.48	--	<1.43	--	<2.3	--
Isodrin	ug/L	NS	<10	<10	<0.422	--	--	--	<0.384	--	--	<0.427	--	*0.324 J*	--	--	--	--	<0.427	--	<0.415	--	<0.667	--
Isophorone	ug/L	100	<10	<10	<0.244	--	--	--	<0.222	--	--	<0.247	--	<0.229	--	--	--	--	<0.247	--	<0.24	--	<1.14	--
Isosafrole	ug/L	NS	<10	<10	<0.2	--	--	--	<0.182	--	--	<0.202	--	<0.188	--	--	--	--	<0.202	--	<0.197	--	<0.575	--
Kepone	ug/L	NS	<20	<20	<0.367	--	--	--	<0.242	--	--	<0.27	--	<0.25	--	--	--	--	<0.27	--	<0.262	--	<2.07	--
Methapyrilene	ug/L	NS	<10	<10	<0.322	--	--	--	<0.293	--	--	<0.326	--	<0.302	--	--	--	--	<1.53	--	<1.49	--	<2.18	--
Methyl Methanesulfonate	ug/L	1.8	<10	<10	<0.156	--	--	--	<0.141	--	--	<0.157	--	<0.146	--	--	--	--	<0.157	--	<0.153	--	<0.575	--
Nitrobenzene	ug/L	14	<10	<10	<0.244	--	--	--	<0.222	--	--	<0.247	--	*0.254 J*	--	--	--	--	<0.337	--	<0.328	--	<1.26	--
N-Nitrosodiethylamine	ug/L	NS	<10	<10	<0.311	--	--	--	<0.303	--	--	<0.337	--	<0.313	--	--	--	--	<0.337	--	<0.328	--	<0.575	--
N-Nitrosodimethylamine	ug/L	0.0034	<10	<10	<0.156	--	--	--	<0.141	--	--	<0.157	--	<0.146	--	--	--	--	<0.213	--	<0.208	--	<1.05	--
N-Nitrosodi-n-butylamine	ug/L	0.032	<10	<10	<0.322	--	--	--	<0.303	--	--	<0.326	--	<0.302	--	--	--	--	<0.337	--	<0.328	--	<0.575	--
N-Nitrosodi-n-propylamine	ug/L	NS	<10	<10	<0.389	--	--	--	<0.263	--	--	<0.292	--	<0.271	--	--	--	--	<0.292	--	<0.284	--	<1.15	--
N-Nitrosodiphenylamine	ug/L	36	<10	<10	<0.733	--	--	--	<0.667	--	--	<0.742	--	<0.688	--	--	--	--	<0.742	--	<0.723	--	<1.09	--
N-Nitrosomethylethylamine	ug/L	0.008	<10	<10	<0.222	--	--	--	<0.202	--	--	<0.225	--	<0.208	--	--	--	--	<0.225	--	<0.219	--	<1.49	--
N-Nitrosopiperidine	ug/L	NS	<10	<10	<0.167	--	--	--	<0.152	--	--	<0.169	--	<0.156	--	--	--	--	<0.169	--	<0.164	--	<0.575	--
N-Nitrosopyrrolidine	ug/L	0.183	<10	<10	<0.256	--	--	--	<0.232	--	--	<0.258	--	<0.24	--	--	--	--	<0.258	--	<0.251	--	<0.575	--
O,O,O-Triethyl phosphorothioate	ug/L	NS	<20	<20	<0.367	--	--	--	<0.242	--	--	<0.27	--	<0.25	--	--	--	--	<0.27	--	<0.262	--	<0.575	--
o-Toluidine	ug/L	11	<10	<10	<0.2	--	--	--	<0.182	--	--	<0.202	--	<0.188	--	--	--	--	<0.202	--	<0.197	--	<0.77	--
p-Dimethylaminoazobenzene	ug/L	NS	<10	<10	<0.267	--	--	--	<0.242	--	--	<0.27	--	<0.25	--	--	--	--	<0.27	--	<0.262	--	<0.897	--
Parathion-ethyl	ug/L	NS	<10	<10	<0.2	--	--	--	<0.182	--	--	<0.202	--	<0.188	--	--	--	--	<0.202	--	<0.197	--	<1.84	--
Parathion-methyl	ug/L	7	<10	<10	<0.367	--	--	--	<0.333	--	--	<0.169	--	<0.156	--	--	--	--	<0.169	--	<0.164	--	<0.862	--
Pentachlorobenzene	ug/L	NS	<10	<10	<0.244	--	--	--	<0.222	--	--	<0.247	--	<0.229	--	--	--	--	<0.247	--	<0.24	--	<0.667	--
Pentachloronitrobenzene	ug/L	NS	<10	<10	<0.367	--	--	--	<0.333	--	--	<0.371	--	<0.344	--	--	--	--	<0.371	--	<0.361	--	<0.575	--
Pentachlorophenol	ug/L	1	<10	<10	<0.267	--	--	--	<0.242	--	--	<0.27	--	<0.25	--	--	--	--	<2.61	--	<2.54	--	<2.68	--

Black Hawk County Landfill
Appendix I Results
Monitoring Well OW-205B

Parameter Name	Units	GPS	Mar-16	Dec-16	Mar-17	Jun-17	Sep-17	Nov-17	Dec-17	Mar-18	Jul-18	Sep-18	Mar-19	Oct-19	Nov-19	Mar-20	Sep-20	Mar-21	Jun-21	Nov-21	Apr-22	Nov-22	Apr-23	Sep-23	Apr-24	Oct-24
Appendix I Inorganics																										
Total Suspended Solids	mg/L	NS	***20.8***	***7***	***26.6***	***14***	***9***	***9.12***	***3.87***	***22.9***	***13.3***	***7.25***	***21.9***	***5.25***	--	***48***	***6***	***20.3***	--	***7 J***	***34***	***14***	***18.8***	***16.5***	***10***	Not Accessible
Turbidity, Field	NTU	NS	***108***	***12.47***	***39.53***	***3.316***	***6.944***	***2.733***	***8.172***	***98.7***	***6.709***	***10.48***	***152.17***	***0.53***	***10.69***	***136.35***	***1.67***	***289.85***	***2.45***	***3.13***	***65.53***	0	***144.3***	***0.81***	***59.73***	--
Turbidity, Lab	NTU	NS	***76.8***	***24.7***	***155***	***95***	***10.8***	***20.9***	***13.4***	***39.7***	***84.5***	***34.6***	***127***	***10.6***	--	***98.9***	--	--	--	--	--	--	--	--	--	--
Antimony	µg/L	6	<0.237	<0.237	<0.185	<0.185	<0.185	***0.956 J***	<0.185	<0.185	<8.4	<0.42	<0.53	<0.53	--	<0.58	<0.51	<1.1	--	<1.1	<0.69	<0.69	<1	<1	<1	--
Antimony, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	***14.8***	***13.9***	***12.9***	***7.5***	***6.55***	***6.4***	***2.63***	***7.25***	<11.4	***5.31***	***11.9***	***18.8***	--	***13.4***	***6.85***	***17.5***	--	***12.4***	***10.2***	***11.1***	***18.3***	***9.14***	***9.06***	--
Arsenic, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	***112***	***177***	***186***	***115***	***108***	***106***	***107***	***125***	***189***	***190***	***151***	***350***	--	***307***	***250***	***376***	--	***307***	***237***	***240***	***273***	***177***	***171***	--
Barium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	<0.221	<0.221	<0.125	<0.125	<0.125	<0.125	<0.125	<0.125	<3.8	<0.19	<0.27	<0.27	--	<0.27	<0.27	<0.27	--	<0.27	<0.27	<0.27	<0.33	<0.33	<0.33	--
Beryllium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	***0.042 J***	<0.0351	<0.0441	<0.0441	<0.0441	***0.052 J***	<0.0441	<0.0441	<1.2	***0.092 J***	<0.077	<0.039	--	<0.039	***0.152***	<0.051	--	<0.051	<0.055	<0.055	<0.1	<0.1	<0.1	--
Cadmium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	***2.33 J***	***0.68 J***	***3.03 J***	***1.06 J***	***1.32 J***	***2.86 J***	<0.729	***0.94 J***	<15.2	<0.76	***2.73 J***	<0.98	--	***2.04 J***	<1.1	***1.81 J***	--	<1.1	***1.87 J***	<1.1	***1.87 J***	<1.1	***1.98 J***	--
Chromium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	9.83	***3.62***	***2.27***	***2.9***	***3.6***	***3.07***	***2.85***	***3.16***	***3.48***	***4.62 J***	***3.77***	***4.12***	***3***	--	***5.14***	***4.43***	***6.19***	--	***4.35***	***5.01***	***3.49***	***5.28***	***3.37***	***3.69***	--
Cobalt, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	1300	<1.22	<1.22	<2.19	<2.19	<2.19	<2.19	<2.19	<2.19	***45.8 J***	<1.6	<2	<2	--	<3.2	<1.5	<1.4	--	<1.4	<1.8	<1.8	<1.8	<1.8	<1.8	--
Copper, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	***0.269 J***	<0.211	<0.324	<0.324	<0.324	<0.324	<0.324	<0.324	***16.2***	<0.25	<0.27	<0.27	--	<0.27	<0.11	<0.21	--	<0.21	<0.24	<0.24	<0.24	<0.24	<0.26	--
Lead, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	µg/L	722	***7.66***	***5.57***	***7.27***	***8.67***	***6.65***	***6.69***	***8.12***	***7.62***	<20	***9.79 J***	***10.7***	***11.5***	--	***15.9***	***12.3***	***18.8***	--	***12.3***	***14.6***	***10.7***	***16.2***	***9.57***	***12.6***	--
Nickel, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	<0.63	<0.63	<0.928	<0.928	<0.928	<0.928	<0.928	<0.928	<18	<0.9	<1	<1	--	<1	<1	<0.96	--	<0.96	<0.96	<0.96	<1.4	<1.4	<1.4	--
Selenium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	µg/L	100	<0.153	<0.153	<0.14	<0.14	<0.14	***0.171 J***	<0.14	***0.167 J***	<6	<0.3	<0.37	<0.37	--	<0.37	<0.37	<0.42	--	<0.42	<0.49	<0.49	<0.5	<0.5	<0.5	--
Silver, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	<0.0255	<0.0255	<0.0644	<0.0644	<0.0644	<0.0644	<0.0644	<0.0644	<3.4	<0.17	<0.27	<0.27	--	<0.26	<0.26	<0.26	--	<0.26	<0.26	<0.26	<0.26	***0.415 J***	<0.57	--
Thallium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium	µg/L	35	<0.255	<0.255	<0.84	<0.84	<0.84	<0.84	<0.84	<0.84	<10.4	<0.52	<0.82	<0.82	--	<0.82	<0.85	<1.1	--	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	--
Vanadium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	2000	<5.21	<5.21	<11.5	<11.5	<11.5	<11.5	<11.5	<11.5	<200	<10	<10	<10	--	<10	<10	<10	--	<10	<10	<10	<6.4	<6.4	<9.7	--
Zinc, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Appendix I Organics																										
1,1,1,2-Tetrachloroethane	µg/L	70	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	--	<0.38	<0.38	<0.38	--	<0.38	<0.38	<0.38	--	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	--
1,1,1-Trichloroethane	µg/L	200	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	--	<0.19	<0.19	<0.19	--	<0.19	<0.19	<0.19	--	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	--
1,1,2,2-Tetrachloroethane	µg/L	0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	--	<0.47	<0.47	<0.47	--	<0.47	<0.47	<0.47	--	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	--
1,1,2-Trichloroethane	µg/L	5	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	--	<0.45	<0.45	<0.45	--	<0.45	<0.45	<0.45	--	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	--
1,1-Dichloroethane	µg/L	140	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	--	<0.22	<0.22	<0.22	--	<0.22	<0.22	<0.22	--	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--
1,1-Dichloroethylene	µg/L	7	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	--	<0.56	<0.56	<0.56	--	<0.56	<0.56	<0.56	--	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	--
1,2,3-Trichloropropane	µg/L	0.0058	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	--	<0.59	<0.59	<0.59	--	<0.59	<0.59	<0.59	--	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	--
1,2-Dibromo-3-chloropropane	µg/L	0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	<1.2	<1.2	<1.2	--	<1.2	<1.2	<1.2	--	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	--
1,2-Dibromoethane	µg/L	0.05	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	--	<0.34	<0.34	<0.34	--	<0.34	<0.34	<0.34	--	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	--
1,2-Dichlorobenzene	µg/L	600	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	--	<0.37	<0.37	<0.37	--	<0.37	<0.37	<0.37	--	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	--
1,2-Dichloroethane	µg/L	5	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	--	<0.39	<0.39	<0.39	--	<0.39	<0.39	<0.39	--	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	--
1,2-Dichloropropane	µg/L	5	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	--	<0.27	<0.27	<0.27	--	<0.27	<0.27	<0.27	--	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	--
1,4-Dichlorobenzene	µg/L	75	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	--	<0.23	<0.23	***0.373 J***	--	***0.317 J***	<0.23	<0.23	--	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	--
2-Butanone	µg/L	4000	<0.47	<1.04	***18.2***	***1.36 J***	<1.04	<1.04	<1.04	<1.04	--	<2.1	<2.1	<2.1	--	<2.1	<2.1	<2.1	--	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	--
2-Hexanone	µg/L	NS	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	--	<2	<2	<2	--	<2	<2	<2	--	<2	<2	<2	<2	<2	<2	--
4-Methyl-2-pentanone	µg/L	560	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--	<2.1	<2.1	<2.1	--	<2.1	<2.1	<2.1	--	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	--
Acetone	µg/L	6300	<1.79	<1.79	***298***	***6.02 J***	***3.33 J***	<1.79	<1.79	***7.47 J***	--	<3.1	***3.9 J***	<3.1	--	<3.1	<3.1	<3.1	--	<3.1	<3.1	<3.1	***6.7 J***	<3.1	***71.2***	--
Acrylonitrile	µg/L	0.32	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	--	<2.2	<2.2	<2.2	--	<2.2	<2.2	<2.2	--	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	--
Benzene	µg/L	5	***0.225 J***	***0.387 J***	***0.482 J***	***0.207 J***	***0.138 J***	***0.173 J***	***0.235 J***	***0.264 J***	--	***0.374 J***	***0.225 J***	***0.898***	--	***0.446 J***	***0.242 J***	***0.471 J***	--	***0.493 J***	***0.256 J***	***0.354 J***	***0.334 J***	***0.464 J***	<0.22	--
Bromochloromethane	µg/L	90	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	--	<0.54	<0.54	<0.54	--	<0.54	<0.54	<0.54	--	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	--
Bromodichloromethane	µg/L	80	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	--	<0.39	<0.39	<0.39	--	<0.39	<0.39	<0.39	--	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	--
Bromomethane	µg/L	10	<0.22	<0.22	<0.22	<0.22	<0.22	***0.48 J***	<0.22	<0.22	--	<1.1	<1.1	***3.38 J***	--	<1.1	<1.1	<1.1	--	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	--
Carbon disulfide	µg/L	700	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	--	<0.45	<0.45	<0.45	--	<0.45	<0.45	<0.45	--	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	--
Carbon Tetrachloride	µg/L	5	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	--	<0.65	<0.65	<0.65	--	<0.65	<0.65	<0.65	--	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	--
Chlorobenzene	µg/L	100	***0.409 J***	<0.19	***0.647 J***	***0.323 J***	***0.232 J***	***0.239 J***	***0.275 J***	***0.464 J***	--	***0.707 J***	***0.471 J***	***1.53***	--	***1.04***	***0.571 J***	<0.4	--	***0.897 J***	***0.489 J***	***0.52 J***	***0.61 J***	<0.4	<0.4	--
Chloroethane	µg/L	2800	***1.35 J***	***0.863 J***	<0.15	***0.604 J***	***0.312 J***	***0.547 J***	***0.288 J***	<0.15	--	<0.79	<0.79	***0.998 J***	--	<0.79	<0.79	***0.997 J***	--	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	--
Chloromethane	µg/L	NS	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	--	<0.61	<0.61	<0.61	--	***0.614 J***	<0.61	<0.61	--	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	--
cis-1,2-Dichloroethylene	µg/L	70	***0.243 J***	***0.74 J***	***0.371 J***	***0.304 J***	***0.217 J***	***0.259 J***	***0.261 J***	***0.454 J***	--	***0.855 J***	***0.498 J***	***1.17***	--	***1.02***	***0.224 J***	***0.685 J***	--	***0.571 J***	***0.52 J***	***0.44 J***	***0.366 J***	<0.21	<0.21	--
cis-1,3-Dichloropropene	µg/L	NS	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	--	<0.25	<0.25	<0.25	--	<0.25	<0.25	<0.25	--	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	--
Dibromochloromethane	µg/L	80	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	--	<0.75	<0.75	<0.75	--	<0.75	<0.75	<0.75	--	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	--
Dibromomethane	µg/L	70	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	--	<0.33	<0.33	<0.33	--	<0.33	<0.33	<0.33	--	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	--
Dichloromethane	µg/L	5	<0.17	***0.275 J***	***0.258 J***	***0.19 J***	***0.236 J***	<0.17	***15.5***	***1.28 J***	--	<1.7	<1.7	<1.7	--	<1.7	<1.7	<1.7	--	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	--
Ethylbenzene	µg/L	700	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	--	<0.31	<0.31	<0.31	--	<0.31	<0.31	<0.31	--	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	--
Iodomethane	µg/L	NS	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	--	<7	<7	<7	--	<7	<7	<7	--	<7	<7	<7	<7	<7	<7	--
Styrene	µg/L	100	<0.1	<0.1	<0.1	***0.137 J***	<0.1	<0.1	<0.1	<0.1	--	<0.37	<0.37	<0.37	--	<0.37	<0.37	<0.37	--	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	--
Tetrachloroethylene	µg/L	5	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	--	<0.48	<0.48	<0.48	--	<0.48	<0.48	<0.48	--	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	--
Toluene	µg/L	1000	<0.15	<0.15	<0.15	***0.276 J***	<0.15	<0.15	***1.15***	<0.15	--	<0.43	<0.43	<0.43	--	<0.43	<0.43	<0.43	--	<0.43	<0.43	<0.43	***0.499 J***	<0.43	<0.43	--
Trans-1,2-dichloroethylene	µg/L	100	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	--	<0.27	<0.27	<0.27	--	<0.27	<0.27	<0.27	--	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	--
trans-1,3-Dichloropropene	µg/L	NS	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--	<0.56	<0.56	<0.56	--	<0.56	<0.56	<0.56	--	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	--
trans-1,4-Dichloro-2-butene	µg/L	1.8	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	--	<1.1	<1.1	<1.1	--	<1.1	<1.1	<1.1	--	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	--
Tribromomethane	µg/L	80	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	--	<0.78	<0.78	<0.78	--	<0.78	<0.78	<0.78	--	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	--
Trichloroethylene	µg/L	5	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	--	<0.43	<0.43	<0.43	--	<0.43	<0.43	<0.43	--	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	--
Trichlorofluoromethane	µg/L	2000	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	--	<0.38	<0.38	<0.38	--	<0.38	<0.38	<0.38	--	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	--
Trichloromethane	µg/L	80	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	--	<1.3	<1.3	<1.3	--	<1.3	<1.3	<1.3	--	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	--
Vinyl Acetate	µg/L	NS	<0.74	<0.74	<0.74	<0.74	<0.74	<0.74	<0.74	<0.74	--	<2.5	<2.5	<2.5	--	<2.5	<2.5	<2.5	--	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	--
Vinyl Chloride	µg/L	2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	--	<0.6	<0.6	<0.18	--	<0.18	<0.18	<0.18	--	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	--
Xylenes	µg/L	10000	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	--	<0.4	<0.4	<0.4	--	<0.4	<0.4	<0.4	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	--

Detections at or above the RL are shown in bold italics on gray background.

Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.

NS = No standard

Black Hawk County Landfill
Appendix II Results
Monitoring Well OW-205B

Parameter Name	Units	GPS	Dec-17	Jan-18	Mar-18	Jul-18	Sep-18	Mar-19	Oct-19	Nov-19	Mar-20	Sep-20	Mar-21	Jun-21	Nov-21	Apr-22	Nov-22	Apr-23	Sep-23	Apr-24
Alcohols/Gycols by GC																				
Acetonitrile	µg/L	NS	<126	--	--	--	<126	--	<126	--	--	<404	--	--	<404	--	<404	--	--	--
Isobutanol	µg/L	2100	<177	--	--	--	<177	--	<177	--	--	<553	--	--	<553	--	<553	--	--	--
Herbicides (GC)																				
2,4,5-T	µg/L	70	<0.493	--	--	--	<0.532	--	<0.5	--	--	<0.038	--	--	<0.158	--	<0.07	--	--	--
2,4-D	µg/L	70	<0.53	--	--	--	<0.572	--	<0.537	--	--	<0.0227	--	--	<0.62	--	<0.2	--	--	--
Silvex (2,4,5-TP)	µg/L	50	<0.329	--	--	--	<0.355	--	<0.333	--	--	<0.038	--	--	<0.146	--	<0.07	--	--	--
Inorganics																				
Cyanide	µg/L	200	<3.46	--	--	--	<4.2	--	<5	--	--	<5	--	--	<5.3	--	<4.3	--	--	--
Mercury	µg/L	2	<0.112	--	--	--	<0.15	--	<0.1	--	--	<0.1	--	--	<0.15	--	<0.11	--	--	--
Sulfide	µg/L	NS	***10300***	***6590***	***6750***	<231	<231	<231	***1700***	--	<231	<10000	--	--	<231	<231	<231	<231	<231	<1410
Tin	µg/L	4200	<1.62	--	--	--	***0.79 J***	--	<1.8	--	--	<2.4	--	--	<3	--	<3	--	--	--
PCBs (EPA Method 8082)																				
PCB-1016	µg/L	NS	<0.0472	--	--	--	<0.0493	--	<0.0472	--	--	<0.289	--	--	<0.292	--	<0.198	--	--	--
PCB-1221	µg/L	NS	<0.174	--	--	--	<0.182	--	<0.174	--	--	<0.289	--	--	<0.292	--	<0.198	--	--	--
PCB-1232	µg/L	NS	<0.12	--	--	--	<0.125	--	<0.12	--	--	<0.289	--	--	<0.292	--	<0.198	--	--	--
PCB-1242	µg/L	NS	<0.141	--	--	--	<0.148	--	<0.141	--	--	<0.289	--	--	<0.292	--	<0.198	--	--	--
PCB-1248	µg/L	NS	<0.12	--	--	--	<0.125	--	<0.12	--	--	<0.233	--	--	<0.236	--	<0.128	--	--	--
PCB-1254	µg/L	NS	<0.1	--	--	--	<0.105	--	<0.1	--	--	<0.233	--	--	<0.236	--	<0.128	--	--	--
PCB-1260	µg/L	NS	<0.0478	--	--	--	<0.05	--	<0.0478	--	--	<0.233	--	--	<0.236	--	<0.128	--	--	--
Pesticides (EPA Method 8081A)																				
4,4'-DDD	µg/L	0.73	<0.00202	--	--	--	<0.00205	--	***0.00299***	--	<0.002	<0.002	<0.00207	<0.00988	<0.00944	<0.0307	<0.0314	<0.0287	<0.027	<0.0276
4,4'-DDE	µg/L	0.51	***0.00348 J***	--	--	--	<0.00239	--	<0.00226	--	--	<0.00233	--	--	<0.00955	--	<0.0314	--	--	--
4,4'-DDT	µg/L	0.51	***0.00447 J***	--	--	--	<0.00432	--	***0.00619 J***	<0.00394	--	<0.00422	--	--	<0.0135	--	<0.0488	--	--	--
Aldrin	µg/L	0.01	<0.00506	--	--	--	<0.00511	--	<0.00484	--	--	<0.005	--	--	<0.0135	--	<0.0372	--	--	--
alpha-BHC	µg/L	0.028	<0.00191	--	--	--	<0.00193	--	<0.00183	--	--	<0.00189	--	--	<0.0112	--	<0.0337	--	--	--
beta-BHC	µg/L	0.042	<0.00539	--	<0.00511	--	<0.00545	--	<0.00516	--	--	<0.00533	--	--	<0.0146	--	<0.043	--	--	--
Chlordane	µg/L	2	<0.0719	--	--	--	<0.0727	--	<0.0688	--	--	<0.0711	--	--	<0.247	--	<0.942	--	--	--
delta-BHC	µg/L	2.1	<0.00258	--	--	--	***0.00303 J***	--	<0.00247	--	--	<0.00256	--	--	<0.0169	--	<0.0314	--	--	--
Dieldrin	µg/L	0.011	***0.00236 J***	--	--	--	<0.00227	--	<0.00215	--	--	***0.00282 J***	--	--	<0.0135	--	<0.0302	--	--	--
Endosulfan I	µg/L	42	<0.00225	--	--	--	<0.00227	--	***0.00228***	<0.00207	<0.00222	<0.00222	<0.0023	--	<0.0124	<0.0375	<0.0384	<0.0351	<0.033	<0.0337
Endosulfan II	µg/L	42	<0.00213	--	--	--	<0.00216	--	<0.00204	--	--	<0.00211	--	--	<0.0091	--	<0.0337	--	--	--
Endosulfan sulfate	µg/L	NS	<0.00281	--	<0.00266	--	<0.00284	--	<0.00269	--	--	<0.00278	--	--	<0.00944	--	<0.0349	--	--	--
Endrin	µg/L	2	***0.0066 J***	--	--	--	<0.00216	--	***0.00484 J***	--	--	<0.00211	--	--	<0.0112	--	<0.0302	--	--	--
Endrin aldehyde	µg/L	2.1	***0.0123 J***	--	--	--	<0.0083	--	<0.00785	--	--	<0.00811	--	--	<0.0108	--	<0.0337	--	--	--
gamma-BHC (Lindane)	µg/L	0.2	<0.00213	--	--	--	<0.00216	--	<0.00204	--	--	<0.00211	--	--	<0.0157	--	<0.0419	--	--	--
Heptachlor	µg/L	0.4	<0.00292	--	--	--	<0.00295	--	<0.0028	--	--	<0.00289	--	--	<0.0135	--	<0.0384	--	--	--
Heptachlor epoxide	µg/L	0.2	<0.00685	--	--	--	<0.00693	--	<0.00656	--	--	<0.00678	--	--	<0.0102	--	<0.0337	--	--	--
Methoxychlor	µg/L	40	<0.00236	--	--	--	<0.00239	--	<0.00226	--	--	***0.00483 J***	--	--	<0.0157	--	<0.0477	--	--	--
Toxaphene	µg/L	3	<0.0652	--	--	--	<0.0659	--	<0.0624	--	--	<0.0644	--	--	<0.461	--	<0.802	--	--	--
Semivolatile Organics by GC/MS																				
1,2,4,5-Tetrachlorobenzene	µg/L	2.1	<0.533	--	--	--	<1.61	--	<0.15	--	--	<1.74	--	--	<1.82	--	<0.574	--	--	--
1,3,5-Trinitrobenzene	µg/L	NS	<5.69	--	--	--	<14.7	--	<1.37	--	--	<1.41	--	--	<1.48	--	<2.45	--	--	--
1,3-Dinitrobenzene	µg/L	1	<0.756	--	--	--	<11.6	--	<1.08	--	--	<1.09	--	--	<1.14	--	<3.4	--	--	--
1,4-Naphthoquinone	µg/L	NS	<0.622	--	--	--	<4.14	--	<0.385	--	--	<1.07	--	--	<1.11	--	<3.83	--	--	--
1,4-Phenylenediamine	µg/L	NS	<37.3	--	--	--	<96.6	--	<8.98	--	--	<0.543	--	--	<0.568	--	<2.02	--	--	--
1-Naphthylamine	µg/L	NS	<1.07	--	--	--	<2.76	--	<0.257	--	--	<0.957	--	--	<1	--	<2.66	--	--	--
2,3,4,6-Tetrachlorophenol	µg/L	NS	<0.889	--	--	--	<5.75	--	<0.535	--	--	<1.08	--	--	<1.13	--	<5.64	--	--	--
2,4,5-Trichlorophenol	µg/L	700	<1.42	--	--	--	<8.05	--	<0.749	--	--	<1.2	--	--	<1.25	--	<5.64	--	--	--
2,4,6-Trichlorophenol	µg/L	16	<0.978	--	--	--	<8.05	--	<0.749	--	--	<1.3	--	--	<1.36	--	<5.32	--	--	--
2,4-Dichlorophenol	µg/L	20	<0.667	--	--	--	<3.56	--	<0.332	--	--	<1.2	--	--	<1.25	--	<0.904	--	--	--
2,4-Dimethylphenol	µg/L	100	<0.933	--	--	--	<2.41	--	<0.225	--	--	<1.09	--	--	<1.14	--	<0.617	--	--	--
2,4-Dinitrophenol	µg/L	14	<5.96	--	--	--	<29.7	--	<2.76	--	--	<6.2	--	--	<6.48	--	<13.8	--	--	--
2,4-Dinitrotoluene	µg/L	0.25	<0.844	--	--	--	<5.29	--	<0.492	--	--	<1.2	--	--	<1.25	--	<6.81	--	--	--
2,6-Dichlorophenol	µg/L	NS	<0.978	--	--	--	<2.53	--	<0.235	--	--	<1.2	--	--	<1.25	--	<0.734	--	--	--
2,6-Dinitrotoluene	µg/L	0.26	<1.07	--	--	--	<2.76	--	<0.257	--	--	<1.2	--	--	<1.25	--	<0.553	--	--	--
2-Acetylaminofluorene	µg/L	NS	<1.24	--	--	--	<14.3	--	<1.33	--	--	<1.3	--	--	<1.36	--	<2.87	--	--	--
2-Chloronaphthalene	µg/L	560	<1.02	--	--	--	<2.64	--	<0.246	--	--	<1.41	--	--	<1.48	--	<0.681	--	--	--
2-Chlorophenol	µg/L	40	<0.667	--	--	--	<1.72	--	<0.16	--	--	<1.2	--	--	<1.25	--	<0.574	--	--	--
2-Methylnaphthalene	µg/L	28	<0.844	--	--	--	<2.18	--	<0.203	--	--	<1.41	--	--	<1.48	--	<0.628	--	--	--
2-Methylphenol (o-Cresol)	µg/L	35	<0.8	--	--	--	<2.07	--	<0.193	--	--	<1.09	--	--	<1.14	--	<0.691	--	--	--
2-Naphthylamine	µg/L	0.097	<0.978	--	--	--	<2.53	--	<0.235	--	--	<0.935	--	--	<0.977	--	<2.23	--	--	--
2-Nitroaniline	µg/L	NS	<1.02	--	--	--	<14.3	--	<1.33	--	--	<1.3	--	--	<1.36	--	<6.28	--	--	--
2-Nitrophenol	µg/L	NS	<0.711	--	--	--	<11	--	<1.03	--	--	<1.74	--	--	<1.82	--	<7.23	--	--	--
3,3'-Dichlorobenzidine	µg/L	0.39	<2.04	--	--	--	<9.31	--	<0.866	--	--	<1.96	--	--	<2.05	--	<1.49	--	--	--
3,3'-Dimethylbenzidine	µg/L	NS	<0.933	--	--	--	<2.41	--	<0.225	--	--	<2.17	--	--	<2.27	--	<1.6	--	--	--
3/4-Methylphenol	µg/L	70	***1.45 J***	--	--	--	<2.07	--	<0.193	--	--	<0.826	--	--	<0.864	--	<0.745	--	--	--
3-Methylcholanthrene	µg/L	NS	<1.38	--	--	--	<10.2	--	<0.952	--	--	<2.72	--	--	<2.84	--	<0.34	--	--	--
3-Nitroaniline	µg/L	NS	<0.978	--	--	--	<6.67	--	<0.62	--	--	<1.09	--	--	<1.14	--	<2.87	--	--	--
4,6-Dinitro-2-methylphenol	µg/L	NS	<9.87	--	--	--	<25.5	--	<2.37	--	--	<2.72	--	--	<2.84	--	<7.34	--	--	--
4-Aminobiphenyl	µg/L	0.0083	<1.33	--	--	--	<3.45	--	<0.321	--	--	<1.04	--	--	<1.09	--	<2.34	--	--	--
4-Bromophenyl phenyl ether	µg/L	NS	<1.29	--	--	--	<3.33	--	<0.31	--	--	<2.07	--	--	<2.16	--	<0.745	--	--	--
4-Chloro-3-methylphenol	µg/L	700	<0.844	--	--	--	<2.99	--	<0.278	--	--	<1.03	--	--	<1.08	--	<0.894	--	--	--
4-Chloroaniline	µg/L	28	<0.622	--	--	--	<1.72	--	<0.16	--	--	<1.3	--	--	<1.36	--	<0.66	--	--	--
4-Chlorophenyl phenyl ether	µg/L	NS	<1.11	--	--	--	<2.87	--	<0.267	--	--	<1.41	--	--	<1.48	--	<0.734	--	--	--
4-Nitroaniline	µg/L	NS	<1.42	--	--	--	<3.68	--	<0.342	--	--	<1.85	--	--	<1.93	--	<1.38	--	--	--
4-Nitrophenol	µg/L	60	<0.533	--	--	--	<15.9	--	<1.48	--	--	<2.72	--	--	<2.84	--	<8.09	--	--	--
5-Nitro-o-toluidine	µg/L	NS	<0.756	--	--	--	<1.95	--	<0.182	--	--	<3.37	--	--	<3.52	--	<2.98	--	--	--
7,12-Dimethylbenz (a) anthracene	µg/L	NS	<1.11	--	--	--	<2.87	--	<0.267	--	--	<1	--	--	<1.05	--	<2.02	--	--	--
Acenaphthene	µg/L	420	<1.33	--	--	--	<3.45	--	<0.321	--	--	<1.41	--	--	<1.48	--	<0.681	--	--	--
Acenaphthylene	µg/L	210	<0.933	--	--	--	<6.67	--	<0.62	--	--	<1.41	--	--	<1.48	--	<0.766	--	--	--
Acetophenone	µg/L	NS	<0.978	--	--	--	<4.02	--	<0.374	--	--	<3.26	--	--	<3.41	--	<0.734	--	--	--
Anthracene	µg/L	2100	<0.756	--	--	--	<1.95	--	<0.182	--	--	<1.2	--	--	<1.25	--	<0.926	--	--	--
Benzo (a) anthracene	µg/L	0.24	<1.07	--	--	--	<3.91	--	<0.364	--	--	<1.2	--	--	<1.25	--	<0.904	--	--	--
Benzo (a) pyrene	µg/L	0.2	<1.11	--	--	--	<14.6	--	<1.36	--	--	<1.63	--	--	<1.7	--	<8.62	--	--	--
Benzo (b) fluoranthene	µg/L	0.24	<1.38	--	--	--	<11.5	--	<1.07	--	--	<1.3	--	--	<1.36	--	<5.21	--	--	--
Benzo (g,h,i) perylene	µg/L	21	<1.02	--	--	--	<15.2	--	<1.41	--	--	<1.74	--	--	<1.82	--	<6.7	--	--	--
Benzo (k) fluoranthene	µg/L	2.4	<0.889	--	--	--	<6.55	--	<0.61	--	--	<1.3	--	--	<1.36	--	<2.34	--	--	--
Benzyl alcohol	µg/L	700	<0.8	--	--	--	<6.9	--	<0.642	--	--	<1.2	--	--	<1.25	--	<1.38	--	--	--
Bis(2-chloroethoxy)methane	µg/L	NS	<1.16	--	--	--	<2.99	--	<0.278	--	--	<1.2	--	--	<1.25	--	<0.809	--	--	--
Bis(2-chloroethyl)ether	µg/L	0.16	<0.8	--	--	--	<2.18	--	<0.203	--	--	<1.2	--	--	<1.25	--	<0.872	--	--	--
Bis(2-chloroisopropyl) ether	µg/L	300	<0.8	--	--	--	<2.07	--	<0.193	--	--	<1.3	--	--	<1.36	--	<0.574	--	--	--
Bis(2-ethylhexyl)phthalate	µg/L	6	<1.73	--	--	--	<26.7	--	<2.48	--	--	<2.83	--	--	<2.95	--	<5.85	--	--	--
Butyl benzyl phthalate	µg/L	140	<1.51	--	--	--	<17.6	--	<1.64	--	--	<1.63	--	--	<1.7	--	<5.74	--	--	--
Chlorobenzilate	µg/L	NS	<0.933	--	--	--	<2.41	--	<0.225	--	--	<3.15	--	--	<3.3	--	<3.83	--	--	--
Chrysene	µg/L	24	<1.29	--	--	--	<3.56	--	<0.332	--	--	<1.2	--	--	<1.25	--	<0.926	--	--	--
Diallate (cis or trans)	µg/L	NS	<1.02	--	--	--	<2.64	--	<0.246	--	--	<1.41	--	--	<1.48	--	<4.26	--	--	--
Dibenzo (a,h) anthracene	µg/L	0.024	<1.11	--	--	--	<21	--	<1.96	--	--	<2.07	--	--	<2.16	--	<4.15	--	--	--
Dibenzofuran	µg/L	7	<1.07	--	--	--	<2.76	--	<0.257	--	--	<1.3	--	--	<1.36	--	<0.787	--	--	--
Diethyl phthalate	µg/L	5600	<1.16	--	--	--	<3.1	--	<0.289	--	--	<1.2	--	--	<1.25	--	<1.81	--	--	--
Dimethoate	µg/L	1.4	<1.2	--	--	--	<3.1	--	<0.289	--	--	<1.09	--	--	<1.14	--	<3.83	--	--	--
Dimethyl phthalate	µg/L	NS	<1.02	--	--	--	<25.2	--	<2.34	--	--	<2.72	--	--	<2.84	--	<1.06	--	--	--
Di-n-butyl phthalate	µg/L	700	<2.27	--	--	--	<13.2	--	<1.23	--	--	<1.3	--	--	<1.36	--	<5.96	--	--	--
Di-n-octyl phthalate	µg/L	140	<1.02	--	--	--	<30.5	--	<2.83	--	--	<3.26	--	--	<3.41	--	<7.45	--	--	--
Dinoseb	µg/L	7	<1.91	--	--	--	<4.94	--	<0.46	--	--	<0.543	--	--	<0.568	--	<2.55	--	--	--
Diphenylamine	µg/L	180	<2.93	--	--	--	<7.59	--	<0.706	--	--	<0.957	--	--	<1	--	<6.38	--	--	--
Disulfoton	µg/L	0.7	<1.29	--	--	--	<3.33	--	<0.31	--	--	<0.696	--	--	<0.727	--	<2.55	--	--	--
Ethyl Methanesulfonate	µg/L	NS	<0.667	--	--	--	<1.72	--	<0.16	--	--	<0.543	--	--	<0.568	--	<3.83	--	--	--
Famphur	µg/L	NS	<2.09	--	--	--	<5.4	--	<0.503	--	--	<0.696	--	--	<0.727	--	<4.04	--	--	--
Fluoranthene	µg/L	280	<1.47	--	--	--	<7.82	--	<0.727	--	--	<1.02	--	--	<1.07	--	<1.81	--	--	--
Fluorene	µg/L	280	<1.29	--	--	--	<3.33	--	<0.31	--	--	<1.41	--	--	<1.48	--	<0.84	--	--	--
Hexachlorobenzene	µg/L	1	<1.2	--	--	--	<3.1	--	<0.289	--	--	<1.52	--	--	<1.59	--	<0.745	--	--	--
Hexachlorobutadiene	µg/L	1	<0.578	--	--	--	<1.95	--	<0.182	--	--	<1.3	--	--	<1.36	--	<0.915	--	--	--
Hexachlorocyclopentadiene	µg/L	50	<8.4	--	--	--	<21.7	--	<2.02	--	--	<2.28	--	--	<2.39	--	<5.43	--	--	--
Hexachloroethane	µg/L	1	<0.578	--	--	--	<1.61	--	<0.15	--	--	<1.41	--	--	<1.48	--	<1.03	--	--	--
Hexachloropropene	µg/L	NS	<7.29	--	--	--	<18.9	--	<1.75	--	--	<1.74	--	--	<1.82	--	<2.77	--	--	--
Indeno (1,2,3-cd) pyrene	µg/L	0.24	<1.07	--	--	--	<16.9	--	<1.57	--	--	<2.17	--	--	<2.27	--	<4.47	--	--	--
Isodrin	µg/L	NS	<1.69	--	--	--	<4.37	--	<0.406	--	--	<0.63	--	--	<0.659	--	<5	--	--	--
Isophorone	µg/L	100	<0.978	--	--	--	<2.53	--	<0.235	--	--	<1.08	--	--	<1.13	--	<0.989	--	--	--
Isosafrole	µg/L	NS	<0.8	--	--	--	<2.07	--	<0.193	--	--	<0.543	--	--	<0.568	--	<2.45	--	--	--
Kepone	µg/L	NS	<1.07	--	--	--	<2.76	--	<0.257	--	--	<1.96	--	--	<2.05	--	<1.06	--	--	--
Methapyrilene	µg/L	NS	<1.29	--	--	--	<15.6	--	<1.45	--	--	<2.07	--	--	<2.16	--	<0.809	--	--	--
Methyl Methanesulfonate	µg/L	1.8	<0.622	--	--	--	<1.61	--	<0.15	--	--	<0.543	--	--	<0.568	--	<3.51	--	--	--
Nitrobenzene	µg/L	14	<0.978	--	--	--	<3.45	--	<0.321	--	--	<1.2	--	--	<1.25	--	<0.851	--	--	--
N-Nitrosodiethylamine	µg/L	NS	<1.33	--	--	--	<3.45	--	<0.321	--	--	<0.543	--	--	<0.568	--	<3.62	--	--	--
N-Nitrosodimethylamine	µg/L	0.0034	<0.622	--	--	--	<2.18	--	<0.203	--	--	<0.989	--	--	<1.03	--	<0.766	--	--	--
N-Nitrosodi-n-butylamine	µg/L	0.032	<1.29	--	--	--	<3.33	--	<0.31	--	--	<0.543	--	--	<0.568	--	<4.15	--	--	--
N-Nitrosodi-n-propylamine	µg/L	NS	<1.16	--	--	--	<2.99	--	<0.278	--	--	<1.09	--	--	<1.14	--	<0.979	--	--	--
N-Nitrosodiphenylamine	µg/L	36	<2.93	--	--	--	<7.59	--	<0.706	--	--	<1.03	--	--	<1.08	--	<0.798	--	--	--
N-Nitrosomethylethylamine	µg/L	0.008	<0.889	--	--	--	<2.3	--	<0.214	--	--	<1.41	--	--	<1.48	--	<5.21	--	--	--
N-Nitrosopiperidine	µg/L	NS	<0.667	--	--	--	<1.72	--	<0.16	--	--	<0.543	--	--	<0.568	--	<2.87	--	--	--
N-Nitrosopyrrolidine	µg/L	0.083	<1.02	--	--	--	<2.64	--	<0.246	--	--	<0.543	--	--	<0.568	--	<3.83	--	--	--
O,O,O-Triethyl phosphorothioate	µg/L	NS	<1.07	--	--	--	<2.76	--	<0.257	--	--	<0.543	--	--	<0.568	--	<3.4	--	--	--
o-Toluidine	µg/L	11	<0.8	--	--	--	<2.07	--	<0.193	--	--	<0.728	--	--	<0.761	--	<3.09	--	--	--
p-(Dimethylamino)azobenzene	µg/L	NS	<1.07	--	--	--	<2.76	--	<0.257	--	--	<0.848	--	--	<0.886	--	<2.34	--	--	--
Parathion-ethyl	µg/L	NS	<0.8	--	--	--	<2.07	--	<0.193	--	--	<1.74	--	--	<1.82	--	<2.34	--	--	--
Parathion-methyl	µg/L	1	<0.667	--	--	--	<1.72	--	<0.16	--	--	<0.815	--	--	<0.852	--	<2.45	--	--	--
Pentachlorobenzene	µg/L	NS	<0.978	--	--	--	<2.53	--	<0.235	--	--	<0.63	--	--	<0.659	--	<2.98	--	--	--
Pentachloronitrobenzene	µg/L	NS	<1.47	--	--	--	<3.79	--	<0.353	--	--	<0.543	--	--	<0.568	--	<6.17	--	--	--
Pentachlorophenol	µg/L	1	<1.07	--	--	--	<26.7	--	<2.48	--	--	<2.5	--	--	<2.61	--	<10.2	--	--	--
Phenacetin	µg/L	NS	<0.756	--	--	--	<6.44	--	<0.599	--	--	<1.96	--	--	<2.05	--	<2.02	--	--	--
Phenanthrene	µg/L	210	<2.67	--	--	--	<6.9	--	<0.642	--	--	<1.2	--	--	<1.25	--	<0.84	--	--	--
Phenol	µg/L	2000	<10.7	--	--	--	<27.6	--	<2.57	--	--	<2.61	--	--	<2.73	--	<1.17	--	--	--
Phorate	µg/L	1.4	<0.756	--	--	--	<1.95	--	<0.182	--	--	<0.543	--	--	<0.568	--	<3.4	--	--	--
Pronamide	µg/L	5	<1.16	--	--	--	<2.99	--	<0.278	--	--	<0.543	--	--	<0.568	--	<2.87	--	--	--
Pyrene	µg/L	210	<1.02	--	--	--	<2.99	--	<0.278	--	--	<1.52	--	--	<1.59	--	<0.84	--	--	--
Safrole	µg/L	NS	<0.889	--	--	--	<2.3	--	<0.214	--	--	<0.543	--	--	<0.568	--	<2.98	--	--	--
Thionazin	µg/L	NS	<1.38	--	--	--	<3.56	--	<0.332	--	--	<0.826	--	--	<0.864	--	<3.72	--	--	--
Volatile Organic Compounds																				
1,1-Dichloropropene	µg/L	NS	<0.15	--	--	--	<0.43	--	<0.43	--	--	<0.43	--	--	<0.43	--	<0.43	--	--	--
1,2,4-Trichlorobenzene	µg/L	70	<0.16	--	--	--	<0.75	--	<0.75	--	--	<0.75	--	--	<0.75	--	<0.75	--	--	--
1,3-Dichlorobenzene	µg/L	600	<0.17	--	--	--	<0.3	--	<0.3	--	--	<0.3	--	--	<0.3	--	<0.3	--	--	--
1,3-Dichloropropane	µg/L	NS	<0.16	--	--	--	<0.4	--	<0.4	--	--	<0.4	--	--	<0.4	--	<0.4	--	--	--
2,2-Dichloropropane	µg/L	NS	<0.18	--	--	--	<0.69	--	<0.69	--	--	<0.69	--	--	<0.69	--	<0.69	--	--	--
Acrolein	µg/L	NS	<1.5	--	--	--	<3.6	--	<3.6	--	--	<3.6	--	--	<3.6	--	<3.6	--	--	--
Allyl chloride	µg/L	NS	<0.27	--	--	--	<0.7	--	<0.7	--	--	<0.7	--	--	<0.7	--	<0.7	--	--	--
Chloroprene	µg/L	NS	<0.19	--	--	--	<0.23	--	<0.23	--	--	<0.23	--	--	<0.23	--	<0.23	--	--	--
Dichlorodifluoromethane	µg/L	1000	<0.2	--	--	--	<0.25	--	<0.25	--	--	<0.25	--	--	<0.25	--	<0.25	--	--	--
Ethyl Methacrylate	µg/L	NS	<0.15	--	--	--	<0.68	--	<0.68	--	--	<0.68	--	--	<0.68	--	<0.68	--	--	--
Methacrylonitrile	µg/L	NS	<0.25	--	--	--	<3.3	--	<3.3	--	--	<3.3	--	--	<3.3	--	<3.3	--	--	--
Methyl Methacrylate	µg/L	NS	<0.15	--	--	--	<0.76	--	<0.76	--	--	<0.76	--	--	<0.76	--	<0.76	--	--	--
Naphthalene	µg/L	100	<0.37	--	--	--	<3	--	<3	--	--	<3	--	--	<3	--	<3	--	--	--
Propionitrile	µg/L	NS	<2	--	--	--	<3.4	--	<3.4	--	--	<3.4	--	--	<3.4	--	<3.4	--	--	--

Detections at or above the RL are shown in bold italics on gray background.

Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.

NS = No standard

Black Hawk County Landfill
Appendix I Results
Monitoring Well OW-209B

Parameter Name	Units	GPS	Oct-07	Jan-08	Apr-08	Jun-08	Sep-08	Feb-09	Aug-09	Sep-09	Mar-10	Sep-10	May-11	Jun-11	Nov-11	May-12	Dec-12	May-13	Oct-13	Mar-14	Aug-14	Mar-15	Aug-15	Mar-16	Sep-16	Mar-17	Sep-17	Mar-18	Sep-18	Apr-19	Sep-19	Mar-20	Aug-20	Sep-20	Mar-21	Nov-21	Feb-22	Apr-22	Jul-22	Oct-22	Mar-23	Sep-23	May-24	Oct-24
Appendix I Inorganics																																												
Total Suspended Solids	mg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<3.77	<1.2	<1.2	***0.625 J***	***0.625 J***	***1.25 J***	***0.75 J***	***1.38 J***	***1.25 J***	***1.25 J***	***0.875 J***	***0.75 J***	***0.875 J***	<0.638	***0.875 J***	***1 J***	***3.67 J***	<1.7	***1.13 J***	***0.75 J***	***1 J***	***1.13 J***	***2.5***	***1.88***
Turbidity, Field	NTU	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	***3.004***	***4.173***	***0.5909***	***0.3373***	***0.1942***	***0.016***	***0.291***	***0.176***	***1.447***	***31.58***	***2.74***	***0.27***	***1.44***	***1.57***	***0.95***	***0.45***	***0.47***	***16.03***	--	0	***15.44***	***62.05***	***2.28***	***1.24***
Turbidity, Lab	NTU	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.6	<0.7	<0.7	<0.4	***0.5 J***	<0.4	<0.4	***0.8 J***	***0.5 J***	***0.5 J***	***1.56***	***0.51 J***	--	--	--	--	--	--	--	--	--	--	--	--
Antimony	µg/L	6	<6	<6	<6	<6	<6	<6	--	--	<6	<6	<6	<6	<2.73	***4.7 J***	<0.584	<0.271	<0.4	<0.4	<0.161	<0.161	<0.161	<0.237	<0.237	<0.185	<0.185	<0.42	<0.42	<0.53	<0.53	<0.58	--	<0.51	<1.1	<1.1	--	<0.69	--	<0.69	<0.69	<1	<1	<1
Antimony, Dissolved	µg/L	NS	--	--	--	--	--	<6	<6	--	<6	<6	<6	<6	<2.73	***2.77 J***	<0.584	<0.271	<0.4	<0.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	<1	<1	<1	<1	<1	<1	<3	--	<1	<2	<3	<4	<0.6	<0.185	<0.185	<0.185	<2.72	<0.33	<0.33	<0.945	<0.945	<0.945	<0.672	<0.672	<0.505	<0.505	<0.57	<0.57	<0.75	<0.75	<0.88	--	<0.88	<0.75	<0.75	--	<0.75	--	<0.75	<0.75	<0.53	<0.53	<0.53
Arsenic, Dissolved	µg/L	NS	--	--	--	--	--	<3	<3	--	<5	<1	<8	<2	<0.47	<0.185	<0.185	***3.1 J***	<0.33	<0.33	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	***37.2***	***29.5***	***47.5***	***42.2***	***35.4***	***58.5***	***53***	--	***29.2***	***38.7***	***35.8***	***31.7***	***30.2***	***31.1***	***33.4***	***30.8***	***30.2***	***28.2***	***29.9***	***30.3***	***31.6***	***32.8***	***35.1***	***36.8***	***33.4***	***40.6***	***40.8***	***37.1***	***35.1***	***37.5***	--	***33.3***	***50***	***30.9***	--	***43.1***	--	***32.8***	***52.7***	***32.6***	***55.3***	***39.3***
Barium, Dissolved	µg/L	NS	--	--	--	--	--	***64.7***	***39.7***	--	***31***	***33.1***	***35.9***	***34.7***	***35.1***	***29.5***	***39.3***	***30.7***	***29.8***	***27.8***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	<1	<1	<1	<1	<1	<1	<1	--	<1	<1	<1	<1	<0.051	<0.169	<0.169	<0.348	<0.08	<0.08	<0.039	<0.039	<0.039	<0.221	<0.221	<0.125	<0.125	<0.19	<0.19	<0.27	<0.27	<0.27	--	<0.27	<0.27	<0.27	--	<0.27	--	<0.27	<0.27	<0.33	<0.33	<0.33
Beryllium, Dissolved	µg/L	NS	--	--	--	--	--	<1	<1	--	<1	<1	<1	<1	***0.091 J***	<0.169	<0.169	<0.348	<0.08	<0.08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<0.5	<0.124	<0.195	<0.195	<0.53	<0.1	<0.1	***0.1327***	<0.112	***0.149 J***	***0.08 J***	***0.11 J***	<0.0441	***0.051 J***	***0.071 J***	***0.095 J***	<0.077	***0.078 J***	***0.049 J***	--	***0.058 J***	***0.083 J***	***0.093 J***	--	***0.07 J***	--	***0.086 J***	***0.074 J***	***0.14 J***	***0.105 J***	<0.1
Cadmium, Dissolved	µg/L	NS	--	--	--	--	--	<0.5	<0.5	--	<0.5	<0.5	<0.5	<0.5	***0.192 J***	<0.195	<0.195	<0.53	<0.1	<0.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	<20	<20	***4.16***	<20	<20	<20	<20	--	<20	<20	<20	<20	<1.81	<1.81	<1.81	***5.87 J***	***1.34 J***	***1.45 J***	***4.01 J***	***3.08 J***	<1.24	***0.476 J***	<0.355	<0.729	<0.729	***0.906 J***	***0.852 J***	***1.12 J***	<0.98	<1.1	--	***1.23 J***	<1.1	<1.1	--	<1.1	--	<1.1	<1.1	<1.1	<1.2	<1.2
Chromium, Dissolved	µg/L	NS	--	--	--	--	--	<20	<20	--	<20	<20	<20	<20	<1.81	<1.81	<1.81	***4.7 J***	<0.5	***0.825 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	9.83	<20	<20	<20	<20	<20	<20	<20	--	<20	<20	<20	<20	<1.55	<1.55	<1.55	***0.596 J***	***0.473 J***	***0.244 J***	***0.1331***	<0.0528	***0.105 J***	***0.053 J***	***1***	<0.0453	***1.21***	<0.061	***0.511***	<0.0991	***0.356 J***	<0.0991	--	<0.0991	***0.122 J***	***0.504***	--	<0.19	--	<0.19	***0.262 J***	<0.17	***0.475 J***	<0.17
Cobalt, Dissolved	µg/L	NS	--	--	--	--	--	<20	<20	--	<20	<20	<20	<20	<1.55	<1.55	<1.55	***0.489 J***	***0.265 J***	***0.117 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	1300	<20	<20	<20	<20	<20	<20	<20	--	<20	<20	***21.8***	<20	***12.1 J***	***7.55 J***	***3.35 J***	***7.69***	***7.28***	***5.6***	***5.89***	***3.45***	***6.31***	***6.71***	***4.88 J***	***7.24***	<2.19	***6.32***	***3.41 J***	***4.31 J***	***4.15 J***	***5.47***	***5.67***	***3.91 J***	***4.65 J***	***2.75 J***	--	***5.73***	***4.25 J***	***4.6 J***	***4.74 J***	***3.9 J***	***4.73 J***	***3.13 J***
Copper, Dissolved	µg/L	NS	--	--	--	--	--	<20	<20	--	<20	<20	***22.5***	<20	<1.51	<1.51	***5.05 J***	***7.6***	***6.21***	***5.8***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	<4	<4	<4	<4	<4	<4	<4	--	<4	<4	<4	<4	***1.16 J***	<0.821	<0.821	<1.04	<0.18	***0.193 J***	<0.0967	<0.0967	<0.0967	<0.211	<0.211	<0.324	<0.324	<0.25	<0.25	<0.27	<0.27	<0.27	--	<0.11	<0.21	<0.21	--	<0.24	--	<0.24	<0.24	<0.24	<0.26	<0.26
Lead, Dissolved	µg/L	NS	--	--	--	--	--	<4	<4	--	<4	<4	<4	<4	<1	<0.821	<0.821	<1.04	<0.18	<0.18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	µg/L	722	<50	<50	<50	<50	<50	<50	<50	--	<50	<50	<50	<50	***7.33 J***	***9.95 J***	***6.8 J***	***10.8***	***9.51***	***5.17***	***11.6***	***3.72 J***	***15.1***	***5.67***	***13.6***	***8.51***	***12***	***10.2***	***10.7***	***5.85***	***11.5***	***5.14***	***3.94 J***	***6.12***	--	***5.95***	***5.26***	***10.3***	***3.94 J***	***6.12***	--	***6.74***	***4.94 J***	***8.76***	***6.86***	***7.39***
Nickel, Dissolved	µg/L	NS	--	--	--	--	--	<50	<50	--	<50	<50	<50	<50	<2.58	***8.83 J***	***5.34 J***	***10.5***	***8.52***	***5.73***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	<5	<5	<5	<5	<5	<5	<5	--	<5	<5	<5	<5	<1.69	<1.83	<1.83	<7.3	<0.7	<0.7	<3.34	<3.34	<3.34	<0.63	<0.63	<0.928	<0.928	<0.9	<0.9	<1	<1	<1	--	<1	<0.96	<0.96	--	<0.96	--	<0.96	<0.96	<1.4	<1.4	<1.4
Selenium, Dissolved	µg/L	NS	--	--	--	--	--	<5	<5	--	<10	<5	<5	<5	<1.69	<1.83	<1.83	<7.3	<0.7	<0.7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	µg/L	100	<20	<20	<1	<20	<20	<20	<20	--	<20	<20	<20	<20	<1.7	<1.7	<1.7	<0.395	<0.033	<0.033	<0.042	<0.042	<0.042	<0.153	<0.153	<0.14	***0.193 J***	<0.3	<0.3	<0.37	<0.37	<0.37	--	<0.37	<0.42	<0.42	--	<0.49	--	<0.49	<0.49	<0.5	<0.5	<0.5
Silver, Dissolved	µg/L	NS	--	--	--	--	--	<20	<20	--	<20	<20	<20	<20	<1.7	<1.7	<1.7	<0.395	<0.033	<0.033	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	<2	<2	<2	<2	<2	<2	<2	--	<2	<2	<2	<2	<0.84	<0.523	<0.523	<0.134	***0.0586 J***	<0.05	<0.0325	<0.0325	***0.034 J***	***0.026 J***	***0.039 J***	<0.0644	<0.0644	<0.17	<0.17	<0.27	<0.27	<0.26	--	<0.26	<0.26	<0.26	--	<0.26	--	<0.26	<0.26	<0.26	<0.57	<0.57
Thallium, Dissolved	µg/L	NS	--	--	--	--	--	<2	<2	--	<2	<2	<2	<2	<0.84	<0.523	<0.523	<0.134	<0.05	<0.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium	µg/L	35	<50	<50	<50	<50	<50	<50	<50	--	<50	<50	<50	<50	<2.1	***3.1 J***	<2.1	<4.17	<0.5	<0.5	***0.4921***	<0.449	<0.449	<0.255	<0.255	<0.84	<0.84	<0.52	<0.52	<0.82	<0.82	<0.82	--	<0.85	<1.1	***1.22 J***	--	<1.1	--	<1.1	<1.1	<1.1	<1.1	<1.1
Vanadium, Dissolved	µg/L	NS	--	--	--	--	--	<50	<50	--	<50	<50	<50	<50	<2.1	***3.06 J***	<2.1	<4.17	<0.5	***0.272 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	2000	***71***	<20	***49.1***	***162***	***43.3***	***78.7***	***94.1***	--	***93.2***	***34.7***	<20	<20	<9.11	***10.2 J***	***54.2***	***6.37 J***	***6.13 J***	***2.7 J***	<6.95	<6.95	<6.95	<5.21	<5.21	<11.5	<11.5	<10	<10	<10	<10	<10	--	<10	<10	<10	--	<10	--	<10	<10	<6.4	<9.7	<9.7
Zinc, Dissolved	µg/L	NS	--	--	--	--	--	***85.4***	***106***	--	***110***	***104***	<20	<20	<9.11	***30.8***	***69.8***	***6.4 J***	***5.06 J***	***4.94 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Appendix I Organics																																												
1,1,1,2-Tetrachloroethane	µg/L	70	<1	<1	<1	<1	<1	<1	<1	--	<1	<5	<1	<1	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.38	<0.38	<0.38	--	<0.38	<0.38	<0.38	--	<0.38	--	<0.38	<0.38	<0.38	<0.38	<0.38
1,1,1-Trichloroethane	µg/L	200	<1	<1	<1	<1	<1	<1	<1	--	<1	<1	<1	<1	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.19	<0.19	<0.19	--	<0.19	<0.19	<0.19	--	<0.19	--	<0.19	<0.19	<0.19	<0.19	<0.19
1,1,2,2-Tetrachloroethane	µg/L	0.3	<1	<1	<1	<1	<1	<1	<1	--	<1	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.47	<0.47	<0.47	--	<0.47	<0.47	<0.47	--	<0.47	--	<0.47	<0.47	<0.47	<0.47	<0.47
1,1,2-Trichloroethane	µg/L	5	<1	<1	<1	<1	<1	<1	<1	--	<1	<1	<1	<1	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.45	<0.45	<0.45	--	<0.45	<0.45	<0.45	--	<0.45	--	<0.45	<0.45	<0.45	<0.45	<0.45
1,1-Dichloroethane	µg/L	140	<1	<1	<1	<1	<1	<1	<1	--	<1	<1	<1	<1	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.22	<0.22	<0.22	<0.22	--	<0.22	<0.22	<0.22	--	<0.22	--	<0.22	<0.22	<0.22	<0.22	<0.22
1,1-Dichloroethylene	µg/L	7	<2	<2	<2	<2	<2	<2	<2	--	<2	<2	<2	<2	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.56	<0.56	<0.56	--	<0.56	<0.56	<0.56	--	<0.56	--	<0.56	<0.56	<0.56	<0.56	<0.56
1,2,3-Trichloropropane	µg/L	0.006	<1	<1	<1	<1	<1	<1	<1	--	<1	<1	<1	<1	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.59	<0.59	<0.59	--	<0.59	<0.59	<0.59	--	<0.59	--	<0.59	<0.59	<0.59	<0.59	<0.59
1,2-Dibromo-3-chloropropane	µg/L	0.2	<10	<10	<10	<10	<10	<10	<10	--	<10	<10	<10	<10	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.2	<1.2	<1.2	--	<1.2	<1.2	<1.2	--	<1.2	--	<1.2	<1.2	<1.2	<1.2	<1.2
1,2-Dibromoethane	µg/L	0.05	<10	<10	<10	<10	<10	<10	<10	--	<10	<10	<10	<10	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.34	<0.34	<0.34	--	<0.34	<0.34	<0.34	--	<0.34	--	<0.34	<0.34	<0.34	<0.34	<0.34
1,2-Dichlorobenzene	µg/L	600	<1	<1	<1	<1	<1	<1	<1	--	<1	<1	<1	<1	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.37	<0.37	<0.37	--	<0.37	<0.37	<0.37	--	<0.37	--	<0.37	<0.37	<0.37	<0.37	<0.37
1,2-Dichloroethane	µg/L	5	<1	<1	<1	<1	<1	<1	<1	--	<1	<1	<1	<1	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.39	<0.39	<0.39	--	<0.39	<0.39	<0.39	--	<0.39	--	<0.39	<0.39	<0.39	<0.39	<0.39
1,2-Dichloropropane	µg/L	5	<1	<1	<1	<1	<1	<1	<1	--	<1	<1	<1	<1	<0.87	<0.11	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.27	<0.27	<0.27	<0.27	--	<0.27	<0.27	<0.27	--	<0.27	--	<0.27	<0.27	<0.27	<0.27	<0.27
1,4-Dichlorobenzene	µg/L	75	<1	<1	<1	<1	<1	<1	<1	--	<1	<1	<1	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.23	<0.23	<0.23	<0.23	--	<0.23	<0.23	<0.23	--	<0.23	--	<0.23	<0.23	<0.23	<0.23	<0.23
2-Butanone	µg/L	4000	<10	<10	<10	<10	<10	<10	<10	--	<10	<10	<10	<10	***1.04 J***	<0.16	***0.74 J***	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<1.04	<1.04	<1.04	<2.1	<2.1	<2.1	<2.1	--	<2.1	<2.1	<2.1	--	<2.1	--	<2.1	<2.1	<2.1	<2.1	<2.1
2-Hexanone	µg/L	NS	<10	<10	<10	<10	<10	<10	<10	--	<10	<10	<10	<10	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<2	<2	<2	--	<2	<2	<2	--	<2	--	<2	<2	<2	<2	<2
4-Methyl-2-pentanone	µg/L	560	<10	<10	<10	<10	<10	<10	<10	--	<10	<10	<10	<10	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<2.1	<2.1	<2.1	--	<2.1	<2.1	<2.1	--	<2.1	--	<2.1	<2.1	<2.1	<2.1	<2.1
Acetone	µg/L	6300	<10	<10	<10	<10	<10	<10	<10	--	<10	<10	<10	<10	<1.79	<1.79	<1.79	<1.79	<1.79	<1.79	<1.79	<1.79	<1.79	***2.03 J***	<1.79	<1.79	***4.59 J***	***2.78 J***	<3.1	<3.1	<3.1	<3.1	--	<3.1	<3.1	<3.1	--	<3.1	--	<3.1	<3.1	<3.1	<3.1	<3.1
Acrylonitrile	µg/L	0.32	<10	<10	<10	<10	<10	<10	<10	--	<10	<10	<10	<10	<0.53	<0.19	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<2.2	<2.2	<2.2	<2.2	--	<2.2	<2.2	<2.2	--	<2.2	--	<2.2	<2.2	<2.2	<2.2	<2.2
Benzene	µg/L	5	<0.5	<0.5	<0.5	<0.5	<0.5	***0.59***	<0.5	<0.5	***0.59***	***0.6***	<0.5	***0.51***	***0.24 J***	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.22	<0.22	<0.22	<0.22	--	<0.22	<0.22	<0.22	--	<0.22	--	<0.22	<0.22	<0.22	<0.22	<0.22
Bromochloromethane	µg/L	90	<5	<5	<5	<5	<5	<5	<5	--	<5	<5	<5	<5	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.54	<0.54	<0.54	<0.54	--	<0.54	<0.54	<0.54	--	<0.54	--	<0.54	<0.54	<0.54	<0.54	<0.54
Bromodichloromethane	µg/L	80	<1	<1	<1	<1	<1	<1	<1	--	<1	<1	<1	<1	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.39	<0.39	<0.39	<0.39	--	<0.39	<0.39	<0.39	--	<0.39	--	<0.39	<0.39	<0.39	<0.39	<0.39
Bromomethane	µg/L	10	<4	<4	<4	<4	<4	<4	<4	--	<4	<4	<4	<20	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	***0.255 J***	<0.22	<0.22	<1.1	<1.1	<1.1	<1.1	--	<1.1	<1.1	<1.1	--	<1.1	--	<1.1	<1.1	<1.1	<1.1	<1.1
Carbon disulfide	µg/L	700	<1	<1	<1	<1	<1	<1	<1	--	<1	<10	<1	<1	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.45	<0.45	<0.45	<0.45	--	<0.45	<0.45	<0.45	--	<0.45	--	<0.45	<0.45	<0.45	<0.45	<0.45
Carbon Tetrachloride	µg/L	5	<2	<2	<2	<2	<2	<2	<2	--	<2	<5	<2	<2	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.65	<0.65	<0.65	<0.65	--	<0.65	<0.65	<0.65	--	<0.65	--	<0.65	<0.65	<0.65	<0.65	<0.65
Chlorobenzene	µg/L	100	<1	<1	<1	<1	<1	<1	<1	--	<1	<1	<1	<1	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.4	<0.4	<0.4	<0.4	--	<0.4	<0.4	<0.4	--	<0.4	--	<0.4	<0.4	<0.4	<0.4	<0.4
Chloroethane	µg/L	2800	<4	<4	<4	<4	<4	<4	<4	--	<4	<4	<4	<4	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.79	<0.79	<0.79	<0.79	<0.79	--	<0.79	<0.79	<0.79	--	<0.79	--	<0.79	<0.79	<0.79	<0.79	<0.79
Chloromethane	µg/L	NS	<3	<3	<3	<3	<3	<3	<3	--	<3	<3	<3	<3	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.61	<0.61	<0.61	<0.61	<0.61	--	<0.61	<0.61	<0.61	--	<0.61	--	<0.61	<0.61	<0.61	<0.61	<0.61
cis-1,2-Dichloroethylene	µg/L	70	<1	<1	<1	<1	<1	<1	<1	--	<1	<1	<1	<1	***0.31 J***	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.21	<0.21	<0.21	<0.21	--	<0.21	<0.21	<0.21	--	<0.21	--	<0.21	<0.21	<0.21	<0.21	<0.21
cis-1,3-Dichloropropene	µg/L	NS	<5	<5	<5	<5	<5	<5	<5	--	<5	<10	<5	<5	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.25	<0.25	<0.25	<0.25	--	<0.25	<0.25	<0.25	--	<0.25	--	<0.25	<0.25	<0.25	<0.25	<0.25
Dibromochloromethane	µg/L	80	<5	<5	<5	<5	<5	<5	<5	--	<5	<5	<5	<5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.75	<0.75	<0.75	<0.75	<0.75	--	<0.75	<0.75	<0.75	--	<0.75	--	<0.75	<0.75	<0.75	<0.75	<0.75
Dibromomethane	µg/L	70	<1	<1	<1	<1	<1	<1	<1	--	<1	<1	<1	<1	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.33	<0.33	<0.33	<0.33	<0.33	--	<0.33	<0.33	<0.33	--	<0.33	--	<0.33	<0.33	<0.33	<0.33	<0.33
Dichloromethane	µg/L	5	<5	<5	<5	<5	<5	<5	<5	--	<5	<5	<5	<5	<0.17	<0.17	***0.32 J***	<0.17	<0.17	***0.931 J***	<0.17	<0.17	<0.17	***0.345 J***	<0.17	***0.365 J***	***0.173 J***	<0.17	<1.7	<1.7	<1.7	<1.7	--	<1.7	<1.7	<1.7	--	<1.7	--	<1.7	<1.7	<1.7	<1.7	<1.7
Ethylbenzene	µg/L	700	<1	<1	<1	<1	<1	<1	<1	--	<1	<1	<1	<1	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.31	<0.31	<0.31	<0.31	--	<0.31	<0.31	<0.31	--	<0.31	--	<0.31	<0.31	<0.31	<0.31	<0.31
Iodomethane	µg/L	NS	<10

Black Hawk County Landfill
Appendix II Results
Monitoring Well OW-209B

Parameter Name	Units	GPS	June 2011	May 2012	July 2012	Dec. 2012	Feb. 2013	Apr. 2013	Mar. 2015	Aug. 2015	Sep. 2016	Sep-20
Alcohols/Gycols by GC												
Acetonitrile	µg/L	NS	<10000	<126	--	--	--	--	--	<126	<126	<404
Isobutanol	µg/L	2100	<10000	<177	--	--	--	--	--	<177	<177	<553
Herbicides (GC)												
2,4,5-T	µg/L	70	<0.53	<0.46	--	--	--	--	--	<0.493	<0.541	<0.0362
2,4-D	µg/L	70	<1.1	<0.49	--	--	--	--	--	<0.529	<0.581	<0.0216
Silvex (2,4,5-TP)	µg/L	50	<0.53	<0.3	--	--	--	--	--	<0.329	<0.361	<0.0362
Inorganics												
Cyanide	µg/L	200	<10	***2.38 J***	<1.7	<5.12	<5.12	<5.12	<3.1	<3.04	<3.52	<5
Mercury	µg/L	2	<0.2	<0.024	--	--	--	--	--	<0.0926	<0.142	<0.1
Sulfide	µg/L	NS	<1000	<120	--	--	--	--	--	<0.219	<180	<10000
Tin	µg/L	4200	<100	<16.7	--	--	--	--	--	<1.8	<0.832	<2.4
PCBs (EPA Method 8082)												
PCB-1016	µg/L	NS	<0.8	<0.0434	--	--	--	--	--	<0.0434	<0.0488	<0.306
PCB-1221	µg/L	NS	<0.8	<0.16	--	--	--	--	--	<0.16	<0.18	<0.306
PCB-1232	µg/L	NS	<0.8	<0.11	--	--	--	--	--	<0.11	<0.124	<0.306
PCB-1242	µg/L	NS	<0.8	<0.13	--	--	--	--	--	<0.13	<0.146	<0.306
PCB-1248	µg/L	NS	<0.8	<0.11	--	--	--	--	--	<0.11	<0.124	<0.247
PCB-1254	µg/L	NS	<0.8	<0.092	--	--	--	--	--	<0.092	<0.103	<0.247
PCB-1260	µg/L	NS	<0.8	<0.044	--	--	--	--	--	<0.044	<0.0494	<0.247
Pesticides (EPA Method 8081A)												
4,4'-DDD	µg/L	0.73	<0.032	<0.0018	--	--	--	--	--	<0.00207	<0.00212	<0.00212
4,4'-DDE	µg/L	0.51	<0.032	<0.0021	--	--	--	--	--	<0.00241	<0.00247	<0.00247
4,4'-DDT	µg/L	0.51	<0.032	<0.0038	--	--	--	--	--	<0.00437	<0.00447	<0.00447
Aldrin	µg/L	0.01	<0.032	<0.0045	--	--	--	--	--	<0.00517	<0.00529	<0.00529
alpha-BHC	µg/L	0.028	<0.032	<0.0017	--	--	--	--	--	<0.00195	<0.002	<0.002
beta-BHC	µg/L	0.042	<0.032	<0.0048	--	--	--	--	--	<0.00552	<0.00565	<0.00565
Chlordane	µg/L	2	<2	<0.064	--	--	--	--	--	<0.0736	<0.0753	<0.0753
delta-BHC	µg/L	2.1	<0.032	***0.00278 J***	<0.0023	<0.0023	<0.00237	<0.00235	<0.00242	<0.00264	<0.00271	<0.00271
Dieldrin	µg/L	0.011	<0.032	<0.002	--	--	--	--	--	<0.0023	<0.00235	<0.00235
Endosulfan I	µg/L	42	<0.032	<0.002	--	--	--	--	--	<0.0023	<0.00235	<0.00235
Endosulfan II	µg/L	42	<0.032	<0.0019	--	--	--	--	--	<0.00218	<0.00224	<0.00224
Endosulfan sulfate	µg/L	NS	<0.032	<0.0025	--	--	--	--	--	<0.00287	<0.00294	<0.00294
Endrin	µg/L	2	<0.032	<0.0019	--	--	--	--	--	<0.00218	<0.00224	<0.00224
Endrin aldehyde	µg/L	2.1	<0.032	<0.0073	--	--	--	--	--	<0.00839	<0.00859	<0.00859
gamma-BHC (Lindane)	µg/L	0.2	<0.032	<0.0019	--	--	--	--	--	<0.00218	<0.00224	<0.00224
Heptachlor	µg/L	0.4	<0.032	<0.0026	--	--	--	--	--	<0.00299	<0.00306	<0.00306
Heptachlor epoxide	µg/L	0.2	<0.032	<0.0061	--	--	--	--	--	<0.00701	<0.00718	<0.00718
Methoxychlor	µg/L	40	<0.032	<0.0021	--	--	--	--	--	<0.00241	<0.00247	<0.00247
Toxaphene	µg/L	3	<2	<0.058	--	--	--	--	--	<0.0667	<0.0682	<0.0682
Semivolatile Organics by GC/MS												
1,2,4,5-Tetrachlorobenzene	µg/L	2.1	<10	<0.12	--	--	--	--	--	<0.125	<0.14	<1.88
1,3,5-Trinitrobenzene	µg/L	NS	<10	<1.28	--	--	--	--	--	<1.33	<1.49	<1.53
1,3-Dinitrobenzene	µg/L	1	<10	<0.17	--	--	--	--	--	<0.177	<0.198	<1.18
1,4-Naphthoquinone	µg/L	NS	<10	<0.14	--	--	--	--	--	<0.146	<0.163	<1.15
1,4-Phenylenediamine	µg/L	NS	<10	<8.4	--	--	--	--	--	<8.75	<9.77	<0.588
1-Naphthylamine	µg/L	NS	<10	<0.24	--	--	--	--	--	<0.25	<0.279	<1.04
2,3,4,6-Tetrachlorophenol	µg/L	NS	<10	<0.2	--	--	--	--	--	<0.208	<0.233	<1.16
2,4,5-Trichlorophenol	µg/L	700	<10	<0.32	--	--	--	--	--	<0.333	<0.372	<1.29
2,4,6-Trichlorophenol	µg/L	16	<10	<0.22	--	--	--	--	--	<0.229	<0.256	<1.41
2,4-Dichlorophenol	µg/L	20	<10	<0.15	--	--	--	--	--	<0.156	<0.174	<1.29
2,4-Dimethylphenol	µg/L	100	<10	<0.21	--	--	--	--	--	<0.219	<0.244	<1.18
2,4-Dinitrophenol	µg/L	14	<20	<1.34	--	--	--	--	--	<1.4	<1.56	<6.71
2,4-Dinitrotoluene	µg/L	0.25	<10	<0.19	--	--	--	--	--	<0.198	<0.221	<1.29
2,6-Dichlorophenol	µg/L	NS	<10	<0.22	--	--	--	--	--	<0.229	<0.256	<1.29
2,6-Dinitrotoluene	µg/L	0.26	<10	<0.24	--	--	--	--	--	<0.25	<0.279	<1.29
2-Acetylaminofluorene	µg/L	NS	<10	<0.28	--	--	--	--	--	<0.292	<0.326	<1.41
2-Chloronaphthalene	µg/L	560	<10	<0.23	--	--	--	--	--	<0.24	<0.267	<1.53
2-Chlorophenol	µg/L	40	<10	<0.15	--	--	--	--	--	<0.156	<0.174	<1.29
2-Methylnaphthalene	µg/L	28	<10	<0.19	--	--	--	--	--	<0.198	<0.221	<1.53
2-Methylphenol (o-Cresol)	µg/L	35	<10	<0.18	--	--	--	--	--	<0.188	<0.209	<1.18
2-Naphthylamine	µg/L	0.097	<10	<0.22	--	--	--	--	--	<0.229	<0.256	<1.01
2-Nitroaniline	µg/L	NS	<10	<0.23	--	--	--	--	--	<0.24	<0.267	<1.41
2-Nitrophenol	µg/L	NS	<10	<0.16	--	--	--	--	--	<0.167	<0.186	<1.88
3,3'-Dichlorobenzidine	µg/L	0.39	<10	<0.46	--	--	--	--	--	<0.479	<0.535	<2.12
3,3'-Dimethylbenzidine	µg/L	NS	<10	<0.21	--	--	--	--	--	<0.219	<0.244	<2.35
3/4-Methylphenol	µg/L	70	<10	<0.18	--	--	--	--	--	<0.188	<0.209	<0.894
3-Methylcholanthrene	µg/L	NS	<10	<0.313	--	--	--	--	--	<0.323	<0.36	<2.94
3-Nitroaniline	µg/L	NS	<10	<0.22	--	--	--	--	--	<0.229	<0.256	<1.18
4,6-Dinitro-2-methylphenol	µg/L	NS	<10	<2.22	--	--	--	--	--	<2.31	<2.58	<2.94
4-Aminobiphenyl	µg/L	0.0083	<10	<0.3	--	--	--	--	--	<0.313	<0.349	<1.13
4-Bromophenyl phenyl ether	µg/L	NS	<10	<0.29	--	--	--	--	--	<0.302	<0.337	<2.24
4-Chloro-3-methylphenol	µg/L	700	<10	<0.19	--	--	--	--	--	<0.198	<0.221	<1.12
4-Chloroaniline	µg/L	28	<10	<0.14	--	--	--	--	--	<0.146	<0.163	<1.41
4-Chlorophenyl phenyl ether	µg/L	NS	<10	<0.25	--	--	--	--	--	<0.26	<0.291	<1.53
4-Nitroaniline	µg/L	NS	<10	<0.32	--	--	--	--	--	<0.333	<0.372	<2
4-Nitrophenol	µg/L	60	<10	<0.12	--	--	--	--	--	<0.125	<0.14	<2.94
5-Nitro-o-toluidine	µg/L	NS	<10	<0.17	--	--	--	--	--	<0.177	<0.198	<3.65
7,12-Dimethylbenz (a) anthracene	µg/L	NS	<10	<0.25	--	--	--	--	--	<0.26	<0.291	<1.08
Acenaphthene	µg/L	420	<10	<0.3	--	--	--	--	--	<0.313	<0.349	<1.53
Acenaphthylene	µg/L	210	<10	<0.21	--	--	--	--	--	<0.219	<0.244	<1.53
Acetophenone	µg/L	NS	<10	<0.22	--	--	--	--	--	<0.229	<0.256	<3.53
Anthracene	µg/L	2100	<10	<0.17	--	--	--	--	--	<0.177	<0.198	<1.29
Benzo (a) anthracene	µg/L	0.24	<10	<0.24	--	--	--	--	--	<0.25	<0.279	<1.29
Benzo (a) pyrene	µg/L	0.2	<10	<0.25	--	--	--	--	--	<0.26	<0.291	<1.76
Benzo (b) fluoranthene	µg/L	0.24	<10	<0.31	--	--	--	--	--	<0.323	<0.36	<1.41
Benzo (g,h,i) perylene	µg/L	21	<10	<0.23	--	--	--	--	--	<0.24	<0.267	<1.88
Benzo (k) fluoranthene	µg/L	2.4	<10	<0.2	--	--	--	--	--	<0.208	<0.233	<1.41
Benzyl alcohol	µg/L	700	<10	<0.18	--	--	--	--	--	<0.188	<0.209	<1.29
Bis(2-chloroethoxy)methane	µg/L	NS	<10	<0.26	--	--	--	--	--	<0.271	<0.302	<1.29
Bis(2-chloroethyl)ether	µg/L	0.16	<10	<0.18	--	--	--	--	--	<0.188	<0.209	<1.29
Bis(2-chloroisopropyl) ether	µg/L	300	<10	<0.18	--	--	--	--	--	<0.188	<0.209	<1.41
Bis(2-ethylhexyl)phthalate	µg/L	6	<10	***0.425 J***	***26.3***	***0.632 J***	<0.402	<0.394	<0.406	<0.406	<0.453	<3.06
Butyl benzyl phthalate	µg/L	140	<10	<0.34	--	--	--	--	--	<0.354	<0.395	<1.76
Chlorobenzilate	µg/L	NS	<10	<0.21	--	--	--	--	--	<0.219	<0.244	<3.41
Chrysene	µg/L	24	<10	<0.29	--	--	--	--	--	<0.302	<0.337	<1.29
Diallate (cis or trans)	µg/L	NS	<10	<0.23	--	--	--	--	--	<0.24	<0.267	<1.53
Dibenzo (a,h) anthracene	µg/L	0.024	<10	<0.25	--	--	--	--	--	<0.26	<0.291	<2.24
Dibenzofuran	µg/L	7	<10	<0.24	--	--	--	--	--	<0.25	<0.279	<1.41
Diethyl phthalate	µg/L	5600	<10	<0.26	--	--	--	--	--	<0.271	<0.302	<1.29
Dimethoate	µg/L	1.4	<10	<0.27	--	--	--	--	--	<0.281	<0.314	<1.18
Dimethyl phthalate	µg/L	NS	<10	<0.23	--	--	--	--	--	<0.24	<0.267	<2.94
Di-n-butyl phthalate	µg/L	700	<10	<0.51	--	--	--	--	--	<0.531	<0.593	<1.41
Di-n-octyl phthalate	µg/L	140	<10	<0.23	--	--	--	--	--	<0.24	1.89 J	<3.53
Dinoseb	µg/L	7	<10	<0.43	--	--	--	--	--	<0.448	<0.5	<0.588
Diphenylamine	µg/L	180	<10	<0.66	--	--	--	--	--	<0.688	<0.767	<1.04
Disulfoton	µg/L	0.7	<10	<0.29	--	--	--	--	--	<0.302	<0.337	<0.753
Ethyl Methanesulfonate	µg/L	NS	<10	<0.15	--	--	--	--	--	<0.156	<0.174	<0.588
Famphur	µg/L	NS	<20	<0.47	--	--	--	--	--	<0.49	<0.547	<0.753
Fluoranthene	µg/L	280	<10	<0.33	--	--	--	--	--	<0.344	<0.384	<1.11
Fluorene	µg/L	280	<10	<0.29	--	--	--	--	--	<0.302	<0.337	<1.53
Hexachlorobenzene	µg/L	1	<10	<0.27	--	--	--	--	--	<0.281	<0.314	<1.65
Hexachlorobutadiene	µg/L	1	<10	<0.13	--	--	--	--	--	<0.135	<0.151	<1.41
Hexachlorocyclopentadiene	µg/L	50	<10	<1.89	--	--	--	--	--	<1.97	<2.2	<2.47
Hexachloroethane	µg/L	1	<10	<0.13	--	--	--	--	--	<0.135	<0.151	<1.53
Hexachloropropene	µg/L	NS	<10	<1.64	--	--	--	--	--	<1.71	<1.91	<1.88
Indeno (1,2,3-cd) pyrene	µg/L	0.24	<10	<0.24	--	--	--	--	--	<0.25	<0.279	<2.35
Isodrin	µg/L	NS	<10	<0.38	--	--	--	--	--	<0.396	<0.442	<0.682
Isophorone	µg/L	100	<10	<0.22	--	--	--	--	--	<0.229	<0.256	<1.16
Isosafrole	µg/L	NS	<10	<0.18	--	--	--	--	--	<0.188	<0.209	<0.588
Kepone	µg/L	NS	<10	<0.24	--	--	--	--	--	<0.25	<0.279	<2.12
Methapyrilene	µg/L	NS	<10	<0.29	--	--	--	--	--	<0.302	<0.337	<2.24
Methyl Methanesulfonate	µg/L	1.8	<10	<0.14	--	--	--	--	--	<0.146	<0.163	<0.588
Nitrobenzene	µg/L	14	<10	<0.22	--	--	--	--	--	<0.229	<0.256	<1.29
N-Nitrosodiethylamine	µg/L	NS	<10	<0.3	--	--	--	--	--	<0.313	<0.349	<0.588
N-Nitrosodimethylamine	µg/L	0.0034	<10	<0.14	--	--	--	--	--	<0.146	<0.163	<1.07
N-Nitrosodi-n-butylamine	µg/L	0.032	<10	<0.29	--	--	--	--	--	<0.302	<0.337	<0.588
N-Nitrosodi-n-propylamine	µg/L	NS	<10	<0.26	--	--	--	--	--	<0.271	<0.302	<1.18
N-Nitrosodiphenylamine	µg/L	36	<10	<0.66	--	--	--	--	--	<0.688	<0.767	<1.12
N-Nitrosomethylethylamine	µg/L	0.008	<10	<0.2	--	--	--	--	--	<0.208	<0.233	<1.53
N-Nitrosopiperidine	µg/L	NS	<10	<0.15	--	--	--	--	--	<0.156	<0.174	<0.588
N-Nitrosopyrrolidine	µg/L	0.083	<10	<0.23	--	--	--	--	--	<0.24	<0.267	<0.588
O,O,O-Triethyl phosphorothioate	µg/L	NS	<10	<0.24	--	--	--	--	--	<0.25	<0.279	<0.588
o-Toluidine	µg/L	11	<10	<0.181	--	--	--	--	--	<0.188	<0.209	<0.788
p-(Dimethylamino)azobenzene	µg/L	NS	<10	<0.24	--	--	--	--	--	<0.25	<0.279	<0.918
Parathion-ethyl	µg/L	NS	<10	***0.182 J***	<0.18	<0.18	<0.186	<0.182	<0.188	<0.188	<0.209	<1.88
Parathion-methyl	µg/L	1	<10	<0.15	--	--	--	--	--	<0.156	<0.174	<0.882
Pentachlorobenzene	µg/L	NS	<10	<0.22	--	--	--	--	--	<0.229	<0.256	<0.682
Pentachloronitrobenzene	µg/L	NS	<10	<0.33	--	--	--	--	--	<0.344	<0.384	<0.588
Pentachlorophenol	µg/L	1	<10	<0.244	--	--	--	--	--	<0.25	<0.279	<2.71
Phenacetin	µg/L	NS	<10	<0.17	--	--	--	--	--	<0.177	<0.198	<2.12
Phenanthrene	µg/L	210	<10	<0.6	--	--	--	--	--	<0.625	<0.698	<1.29
Phenol	µg/L	2000	<10	<2.4	--	--	--	--	--	<2.5	<2.79	<2.82
Phorate	µg/L	1.4	<10	<0.17	--	--	--	--	--	<0.177	<0.198	<0.588
Pronamide	µg/L	5	<10	<0.26	--	--	--	--	--	<0.271	<0.302	<0.588
Pyrene	µg/L	210	<10	<0.23	--	--	--	--	--	<0.24	<0.267	<1.65
Safrole	µg/L	NS	<10	<0.2	--	--	--	--	--	<0.208	<0.233	<0.588
Thionazin	µg/L	NS	<10	<0.31	--	--	--	--	--	<0.323	<0.36	<0.894
Volatile Organic Compounds												
1,1-Dichloropropene	µg/L	NS	<1	<0.15	--	--	--	--	--	<0.15	<0.15	<0.43
1,2,4-Trichlorobenzene	µg/L	70	<5	<0.16	--	--	--	--	--	<0.16	<0.16	<0.75
1,3-Dichlorobenzene	µg/L	600	<1	<0.17	--	--	--	--	--	<0.17	<0.17	<0.3
1,3-Dichloropropane	µg/L	NS	<1	<0.16	--	--	--	--	--	<0.16	<0.16	<0.4
2,2-Dichloropropane	µg/L	NS	<4	<0.18	--	--	--	--	--	<0.18	<0.18	<0.69
Acrolein	µg/L	NS	<10	<0.75	--	--	--	--	--	<1.5	<1.5	<3.6
Allyl chloride	µg/L	NS	<4	<0.19	--	--	--	--	--	<0.27	<0.27	<0.7
Chloroprene	µg/L	NS	<1	<0.19	--	--	--	--	--	<0.19	<0.19	<0.23
Dichlorodifluoromethane	µg/L	1000	<3	<0.2	--	--	--	--	--	<0.2	<0.2	<0.25
Ethyl Methacrylate	µg/L	NS	<2	<0.15	--		--	--	--	<0.15	<0.15	<0.68
Methacrylonitrile	µg/L	NS	<1	<0.25	--		--	--	--	<0.25	<0.25	<3.3
Methyl Methacrylate	µg/L	NS	<2	<0.15	--		--	--	--	<0.15	<0.15	<0.76
Naphthalene	µg/L	100	<5	<0.37	--		--	--	--	<0.37	<0.37	<3
Propionitrile	µg/L	NS	<10	<2	--		--	--	--	<2	<2	<3.4

Detections at or above the RL are shown in bold italics on gray background.

Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.

NS = No standard

Black Hawk County Landfill
Appendix I Results
Monitoring Well OW-212B

Parameter Name	Units	GPS	Mar-20	Aug-20	Sep-20	Mar-21	Jun-21	Nov-21	Apr-22	Jul-22	Nov-22	Apr-23	Sep-23	May-24	Jul-24	Oct-24
Appendix I Inorganics																
Total Suspended Solids	mg/L	NS	***27***	***14.6***	***2.75***	***3.6***	***4.13***	***23.9***	***3 J***	***11.3***	***31***	***32***	***16***	***7.13***	***8.37***	***2.88***
Turbidity, Field	NTU	NS	***93.59***	***72.49***	***10.64***	***9.87***	***26.08***	***46.04***	***12.96***	--	***5.07***	***92.61***	***43.68***	***6.46***	***3.29***	***4.68***
Turbidity, Lab	NTU	NS	***46.8***	--	--	--	--	--	--	--	--	--	--	--	--	--
Antimony	µg/L	6	<0.58	<0.51	***0.667 J***	<1.1	<1.1	<1.1	<0.69	--	<0.69	<1	<1	<1	--	<1
Antimony, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	***4.06***	***3***	***1.89 J***	***1.02 J***	***0.827 J***	***1.3 J***	***1.36 J***	--	***2.35***	***7.28***	***1.38 J***	***1.21 J***	--	***1.12 J***
Arsenic, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	***26.7***	***26.2***	***29.3***	***33.3***	***29.6***	***25.3***	***27.9***	--	***27.7***	***39.5***	***29***	***27.5***	--	***22.8***
Barium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	--	<0.27	<0.33	<0.33	<0.33	--	<0.33
Beryllium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	***0.065 J***	<0.049	***0.199***	***0.129***	***0.121***	<0.051	***0.309***	***0.362***	***0.055 J***	***0.307***	***0.162 J***	***0.59***	--	***0.247***
Cadmium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	***3.5 J***	***1.75 J***	<1.1	<1.1	<1.1	<1.1	***1.24 J***	--	<1.1	***3.51 J***	<1.1	***1.52 J***	--	<1.2
Chromium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	9.83	***9.17***	***7.92***	***6.58***	***2.03***	***7.26***	***0.545***	***7.13***	***46.9***	***3.36***	***27.1***	***9.9***	***11.9***	***27.5***	***20.6***
Cobalt, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	1300	<3.2	***2.39 J***	***12.5***	***6***	***1.75 J***	<1.4	***12.5***	--	<1.8	***6.07***	<1.8	***7.25***	--	***2.85 J***
Copper, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	<0.27	***0.177 J***	***0.118 J***	<0.21	<0.21	<0.21	<0.24	--	<0.24	***0.763***	<0.24	<0.26	--	<0.26
Lead, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	µg/L	722	***12.9***	***14.7***	***15.6***	***9.26***	***20.2***	***2 J***	***19.7***	--	***9.65***	***34.1***	***18.9***	***44.9***	--	***42.4***
Nickel, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	<1	<1	<1	<0.96	<0.96	<0.96	<0.96	--	<0.96	<1.4	<1.4	<1.4	--	<1.4
Selenium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	µg/L	100	<0.37	<0.37	<0.37	<0.42	<0.42	<0.42	<0.49	--	<0.49	<0.5	<0.5	<0.5	--	<0.5
Silver, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	<0.26	<0.26	<0.26	***0.479 J***	<0.26	<0.26	<0.26	--	<0.26	<0.26	<0.26	***0.572 J***	--	***1.24***
Thallium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium	µg/L	35	***1.12 J***	<0.85	***1.18 J***	***1.2 J***	<1.1	<1.1	***1.51 J***	--	<1.1	***2.37 J***	<1.1	<1.1	--	<1.1
Vanadium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	2000	<10	<10	<10	<10	<10	<10	<10	--	<10	<6.4	<6.4	<9.7	--	<9.7
Zinc, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Appendix I Organics																
1,1,1,2-Tetrachloroethane	µg/L	70	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	--	<0.38	<0.38	<0.38	<0.38	--	<0.38
1,1,1-Trichloroethane	µg/L	200	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	--	<0.19	<0.19	<0.19	<0.19	--	<0.19
1,1,2,2-Tetrachloroethane	µg/L	0.3	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	--	<0.47	<0.47	<0.47	<0.47	--	<0.47
1,1,2-Trichloroethane	µg/L	5	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	--	<0.45	<0.45	<0.45	<0.45	--	<0.45
1,1-Dichloroethane	µg/L	140	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--	<0.22	<0.22	<0.22	<0.22	--	<0.22
1,1-Dichloroethylene	µg/L	7	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	--	<0.56	<0.56	<0.56	<0.56	--	<0.56
1,2,3-Trichloropropane	µg/L	0.0058	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	--	<0.59	<0.59	<0.59	<0.59	--	<0.59
1,2-Dibromo-3-chloropropane	µg/L	0.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	--	<1.2	<1.2	<1.2	<1.2	--	<1.2
1,2-Dibromoethane	µg/L	0.05	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	--	<0.34	<0.34	<0.34	<0.34	--	<0.34
1,2-Dichlorobenzene	µg/L	600	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	--	<0.37	<0.37	<0.37	<0.37	--	<0.37
1,2-Dichloroethane	µg/L	5	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	--	<0.39	<0.39	<0.39	<0.39	--	<0.39
1,2-Dichloropropane	µg/L	5	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	--	<0.27	<0.27	<0.27	<0.27	--	<0.27
1,4-Dichlorobenzene	µg/L	75	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	--	<0.23	<0.23	<0.23	<0.23	--	<0.23
2-Butanone	µg/L	4000	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	--	<2.1	<2.1	<2.1	<2.1	--	<2.1
2-Hexanone	µg/L	NS	<2	<2	<2	<2	<2	<2	<2	--	<2	<2	<2	<2	--	<2
4-Methyl-2-pentanone	µg/L	560	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	--	<2.1	<2.1	<2.1	<2.1	--	<2.1
Acetone	µg/L	6300	<3.1	***4.57 J***	<3.1	<3.1	***3.57 J***	<3.1	<3.1	--	<3.1	***6.33 J***	***3.4 J***	***5.99 J***	--	<3.1
Acrylonitrile	µg/L	0.32	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	--	<2.2	<2.2	<2.2	<2.2	--	<2.2
Benzene	µg/L	5	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--	***0.233 J***	<0.22	<0.22	<0.22	--	<0.22
Bromochloromethane	µg/L	90	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	--	<0.54	<0.54	<0.54	<0.54	--	<0.54
Bromodichloromethane	µg/L	80	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	--	<0.39	<0.39	<0.39	<0.39	--	<0.39
Bromomethane	µg/L	10	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	--	<1.1	<1.1	<1.1	<1.1	--	<1.1
Carbon disulfide	µg/L	700	***0.49 J***	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	--	<0.45	<0.45	<0.45	<0.45	--	<0.45
Carbon Tetrachloride	µg/L	5	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	--	<0.65	<0.65	<0.65	<0.65	--	<0.65
Chlorobenzene	µg/L	100	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	--	<0.4	<0.4	<0.4	<0.4	--	<0.4
Chloroethane	µg/L	2800	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	--	<0.79	<0.79	<0.79	<0.79	--	<0.79
Chloromethane	µg/L	NS	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	--	<0.61	<0.61	<0.61	<0.61	--	<0.61
cis-1,2-Dichloroethylene	µg/L	70	<0.21	<0.21	***0.251 J***	<0.21	<0.21	***0.232 J***	<0.21	--	***0.366 J***	<0.21	<0.21	<0.21	--	<0.21
cis-1,3-Dichloropropene	µg/L	NS	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	--	<0.25	<0.25	<0.25	<0.25	--	<0.25
Dibromochloromethane	µg/L	80	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	--	<0.75	<0.75	<0.75	<0.75	--	<0.75
Dibromomethane	µg/L	70	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	--	<0.33	<0.33	<0.33	<0.33	--	<0.33
Dichloromethane	µg/L	5	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	--	<1.7	<1.7	<1.7	<1.7	--	<1.7
Ethylbenzene	µg/L	700	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	--	<0.31	<0.31	<0.31	<0.31	--	<0.31
Iodomethane	µg/L	NS	<7	<7	<7	<7	<7	<7	<7	--	<7	<7	<7	<7	--	<7
Styrene	µg/L	100	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	--	<0.37	<0.37	<0.37	<0.37	--	<0.37
Tetrachloroethylene	µg/L	5	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	--	<0.48	<0.48	<0.48	<0.48	--	<0.48
Toluene	µg/L	1000	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	--	<0.43	<0.43	<0.43	<0.43	--	<0.43
Trans-1,2-dichloroethylene	µg/L	100	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	--	<0.27	<0.27	<0.27	<0.27	--	<0.27
trans-1,3-Dichloropropene	µg/L	NS	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	--	<0.56	<0.56	<0.56	<0.56	--	<0.56
trans-1,4-Dichloro-2-butene	µg/L	1.8	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	--	<1.1	<1.1	<1.1	<1.1	--	<1.1
Tribromomethane	µg/L	80	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	--	<0.78	<0.78	<0.78	<0.78	--	<0.78
Trichloroethylene	µg/L	5	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	--	<0.43	<0.43	<0.43	<0.43	--	<0.43
Trichlorofluoromethane	µg/L	2000	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	--	<0.38	<0.38	<0.38	<0.38	--	<0.38
Trichloromethane	µg/L	80	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	--	<1.3	<1.3	<1.3	<1.3	--	<1.3
Vinyl Acetate	µg/L	NS	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	--	<2.5	<2.5	<2.5	<2.5	--	<2.5
Vinyl Chloride	µg/L	2	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	--	<0.18	<0.18	<0.18	<0.18	--	<0.18
Xylenes	µg/L	10000	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	--	<0.4	<0.4	<0.4	<0.4	--	<0.4

Detections at or above the RL are shown in bold italics on gray background.

Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.

NS = No standard

Black Hawk County Landfill
Appendix II Results
Monitoring Well OW-212B

Parameter Name	Units	GPS	Sep-20	Nov-21	Nov-22
Alcohols/Gycols by GC					
Acetonitrile	µg/L	NS	<404	<404	<404
Isobutanol	µg/L	2100	<553	<553	<553
Herbicides (GC)					
2,4,5-T	µg/L	70	<0.035	<0.157	<0.07
2,4-D	µg/L	70	***0.0967 J***	<0.613	<0.2
Silvex (2,4,5-TP)	µg/L	50	<0.035	<0.144	<0.07
Inorganics					
Cyanide	µg/L	200	<5	<5.3	<4.3
Mercury	µg/L	2	<0.1	<0.15	<0.11
Sulfide	µg/L	NS	<10000	<231	<231
Tin	µg/L	4200	<2.4	<3	<3
PCBs (EPA Method 8082)					
PCB-1016	µg/L	NS	<0.277	<0.289	<0.198
PCB-1221	µg/L	NS	<0.277	<0.289	<0.198
PCB-1232	µg/L	NS	<0.277	<0.289	<0.198
PCB-1242	µg/L	NS	<0.277	<0.289	<0.198
PCB-1248	µg/L	NS	<0.223	<0.233	<0.128
PCB-1254	µg/L	NS	<0.223	<0.233	<0.128
PCB-1260	µg/L	NS	<0.223	<0.233	<0.128
Pesticides (EPA Method 8081A)					
4,4'-DDD	µg/L	0.73	<0.00191	<0.00933	<0.0314
4,4'-DDE	µg/L	0.51	<0.00223	<0.00944	<0.0314
4,4'-DDT	µg/L	0.51	<0.00404	<0.0133	<0.0488
Aldrin	µg/L	0.01	<0.00479	<0.0133	<0.0372
alpha-BHC	µg/L	0.028	<0.00181	<0.0111	<0.0337
beta-BHC	µg/L	0.042	<0.00511	<0.0144	<0.043
Chlordane	µg/L	2	<0.0681	<0.244	<0.942
delta-BHC	µg/L	2.1	<0.00245	<0.0167	<0.0314
Dieldrin	µg/L	0.011	<0.00213	<0.0133	<0.0302
Endosulfan I	µg/L	42	<0.00213	<0.0122	<0.0384
Endosulfan II	µg/L	42	<0.00202	<0.009	<0.0337
Endosulfan sulfate	µg/L	NS	<0.00266	<0.00933	<0.0349
Endrin	µg/L	2	<0.00202	<0.0111	<0.0302
Endrin aldehyde	µg/L	2.1	<0.00777	<0.0107	<0.0337
gamma-BHC (Lindane)	µg/L	0.2	<0.00202	<0.0156	<0.0419
Heptachlor	µg/L	0.4	<0.00277	<0.0133	<0.0384
Heptachlor epoxide	µg/L	0.2	<0.00649	<0.0101	<0.0337
Methoxychlor	µg/L	40	<0.00223	<0.0156	<0.0477
Toxaphene	µg/L	3	<0.0617	<0.456	<0.802
Semivolatile Organics by GC/MS					
1,2,4,5-Tetrachlorobenzene	µg/L	2.1	<1.84	<1.72	<0.574
1,3,5-Trinitrobenzene	µg/L	NS	<1.49	<1.4	<2.45
1,3-Dinitrobenzene	µg/L	1	<1.15	<1.08	<3.4
1,4-Naphthoquinone	µg/L	NS	<1.13	<1.05	<3.83
1,4-Phenylenediamine	µg/L	NS	<0.575	<0.538	<2.02
1-Naphthylamine	µg/L	NS	<1.01	<0.946	<2.66
2,3,4,6-Tetrachlorophenol	µg/L	NS	<1.14	<1.06	<5.64
2,4,5-Trichlorophenol	µg/L	700	<1.26	<1.18	<5.64
2,4,6-Trichlorophenol	µg/L	16	<1.38	<1.29	<5.32
2,4-Dichlorophenol	µg/L	20	<1.26	<1.18	<0.904
2,4-Dimethylphenol	µg/L	100	<1.15	<1.08	<0.617
2,4-Dinitrophenol	µg/L	14	<6.55	<6.13	<13.8
2,4-Dinitrotoluene	µg/L	0.25	<1.26	<1.18	<6.81
2,6-Dichlorophenol	µg/L	NS	<1.26	<1.18	<0.734
2,6-Dinitrotoluene	µg/L	0.26	<1.26	<1.18	<0.553
2-Acetylaminofluorene	µg/L	NS	<1.38	<1.29	<2.87
2-Chloronaphthalene	µg/L	560	<1.49	<1.4	<0.681
2-Chlorophenol	µg/L	40	<1.26	<1.18	<0.574
2-Methylnaphthalene	µg/L	28	<1.49	<1.4	<0.628
2-Methylphenol (o-Cresol)	µg/L	35	<1.15	<1.08	<0.691
2-Naphthylamine	µg/L	0.097	<0.989	<0.925	<2.23
2-Nitroaniline	µg/L	NS	<1.38	<1.29	<6.28
2-Nitrophenol	µg/L	NS	<1.84	<1.72	<7.23
3,3'-Dichlorobenzidine	µg/L	0.39	<2.07	<1.94	<1.49
3,3'-Dimethylbenzidine	µg/L	NS	<2.3	<2.15	<1.6
3/4-Methylphenol	µg/L	70	<0.874	<0.817	<0.745
3-Methylcholanthrene	µg/L	NS	<2.87	<2.69	<0.34
3-Nitroaniline	µg/L	NS	<1.15	<1.08	<2.87
4,6-Dinitro-2-methylphenol	µg/L	NS	<2.87	<2.69	<7.34
4-Aminobiphenyl	µg/L	0.0083	<1.1	<1.03	<2.34
4-Bromophenyl phenyl ether	µg/L	NS	<2.18	<2.04	<0.745
4-Chloro-3-methylphenol	µg/L	700	<1.09	<1.02	<0.894
4-Chloroaniline	µg/L	28	<1.38	<1.29	<0.66
4-Chlorophenyl phenyl ether	µg/L	NS	<1.49	<1.4	<0.734
4-Nitroaniline	µg/L	NS	<1.95	<1.83	<1.38
4-Nitrophenol	µg/L	60	<2.87	<2.69	<8.09
5-Nitro-o-toluidine	µg/L	NS	<3.56	<3.33	<2.98
7,12-Dimethylbenz (a) anthracene	µg/L	NS	<1.06	<0.989	<2.02
Acenaphthene	µg/L	420	<1.49	<1.4	<0.681
Acenaphthylene	µg/L	210	<1.49	<1.4	<0.766
Acetophenone	µg/L	NS	<3.45	<3.23	<0.734
Anthracene	µg/L	2100	<1.26	<1.18	<0.926
Benzo (a) anthracene	µg/L	0.24	<1.26	<1.18	<0.904
Benzo (a) pyrene	µg/L	0.2	<1.72	<1.61	<8.62
Benzo (b) fluoranthene	µg/L	0.24	<1.38	<1.29	<5.21
Benzo (g,h,i) perylene	µg/L	21	<1.84	<1.72	<6.7
Benzo (k) fluoranthene	µg/L	2.4	<1.38	<1.29	<2.34
Benzyl alcohol	µg/L	700	<1.26	<1.18	<1.38
Bis(2-chloroethoxy)methane	µg/L	NS	<1.26	<1.18	<0.809
Bis(2-chloroethyl)ether	µg/L	0.16	<1.26	<1.18	<0.872
Bis(2-chloroisopropyl) ether	µg/L	300	<1.38	<1.29	<0.574
Bis(2-ethylhexyl)phthalate	µg/L	6	<2.99	<2.8	<5.85
Butyl benzyl phthalate	µg/L	140	<1.72	<1.61	<5.74
Chlorobenzilate	µg/L	NS	<3.33	<3.12	<3.83
Chrysene	µg/L	24	<1.26	<1.18	<0.926
Diallate (cis or trans)	µg/L	NS	<1.49	<1.4	<4.26
Dibenzo (a,h) anthracene	µg/L	0.024	<2.18	<2.04	<4.15
Dibenzofuran	µg/L	7	<1.38	<1.29	<0.787
Diethyl phthalate	µg/L	5600	<1.26	<1.18	<1.81
Dimethoate	µg/L	1.4	<1.15	<1.08	<3.83
Dimethyl phthalate	µg/L	NS	<2.87	<2.69	<1.06
Di-n-butyl phthalate	µg/L	700	<1.38	<1.29	<5.96
Di-n-octyl phthalate	µg/L	140	<3.45	<3.23	<7.45
Dinoseb	µg/L	7	<0.575	<0.538	<2.55
Diphenylamine	µg/L	180	<1.01	<0.946	<6.38
Disulfoton	µg/L	0.7	<0.736	<0.688	<2.55
Ethyl Methanesulfonate	µg/L	NS	<0.575	<0.538	<3.83
Famphur	µg/L	NS	<0.736	<0.688	<4.04
Fluoranthene	µg/L	280	<1.08	<1.01	<1.81
Fluorene	µg/L	280	<1.49	<1.4	<0.84
Hexachlorobenzene	µg/L	1	<1.61	<1.51	<0.745
Hexachlorobutadiene	µg/L	1	<1.38	<1.29	<0.915
Hexachlorocyclopentadiene	µg/L	50	<2.41	<2.26	<5.43
Hexachloroethane	µg/L	1	<1.49	<1.4	<1.03
Hexachloropropene	µg/L	NS	<1.84	<1.72	<2.77
Indeno (1,2,3-cd) pyrene	µg/L	0.24	<2.3	<2.15	<4.47
Isodrin	µg/L	NS	<0.667	<0.624	<5
Isophorone	µg/L	100	<1.14	<1.06	<0.989
Isosafrole	µg/L	NS	<0.575	<0.538	<2.45
Kepone	µg/L	NS	<2.07	<1.94	<1.06
Methapyrilene	µg/L	NS	<2.18	<2.04	<0.809
Methyl Methanesulfonate	µg/L	1.8	<0.575	<0.538	<3.51
Nitrobenzene	µg/L	14	<1.26	<1.18	<0.851
N-Nitrosodiethylamine	µg/L	NS	<0.575	<0.538	<3.62
N-Nitrosodimethylamine	µg/L	0.0034	<1.05	<0.978	<0.766
N-Nitrosodi-n-butylamine	µg/L	0.032	<0.575	<0.538	<4.15
N-Nitrosodi-n-propylamine	µg/L	NS	<1.15	<1.08	<0.979
N-Nitrosodiphenylamine	µg/L	36	<1.09	<1.02	<0.798
N-Nitrosomethylethylamine	µg/L	0.008	<1.49	<1.4	<5.21
N-Nitrosopiperidine	µg/L	NS	<0.575	<0.538	<2.87
N-Nitrosopyrrolidine	µg/L	0.083	<0.575	<0.538	<3.83
O,O,O-Triethyl phosphorothioate	µg/L	NS	<0.575	<0.538	<3.4
o-Toluidine	µg/L	11	<0.77	<0.72	<3.09
p-(Dimethylamino)azobenzene	µg/L	NS	<0.897	<0.839	<2.34
Parathion-ethyl	µg/L	NS	<1.84	<1.72	<2.34
Parathion-methyl	µg/L	1	<0.862	<0.806	<2.45
Pentachlorobenzene	µg/L	NS	<0.667	<0.624	<2.98
Pentachloronitrobenzene	µg/L	NS	<0.575	<0.538	<6.17
Pentachlorophenol	µg/L	1	<2.64	<2.47	<10.2
Phenacetin	µg/L	NS	<2.07	<1.94	<2.02
Phenanthrene	µg/L	210	<1.26	<1.18	<0.84
Phenol	µg/L	2000	<2.76	<2.58	<1.17
Phorate	µg/L	1.4	<0.575	<0.538	<3.4
Pronamide	µg/L	5	<0.575	<0.538	<2.87
Pyrene	µg/L	210	<1.61	<1.51	<0.84
Safrole	µg/L	NS	<0.575	<0.538	<2.98
Thionazin	µg/L	NS	<0.874	<0.817	<3.72
Volatile Organic Compounds					
1,1-Dichloropropene	µg/L	NS	<0.43	<0.43	<0.43
1,2,4-Trichlorobenzene	µg/L	70	<0.75	<0.75	<0.75
1,3-Dichlorobenzene	µg/L	600	<0.3	<0.3	<0.3
1,3-Dichloropropane	µg/L	NS	<0.4	<0.4	<0.4
2,2-Dichloropropane	µg/L	NS	<0.69	<0.69	<0.69
Acrolein	µg/L	NS	<3.6	<3.6	<3.6
Allyl chloride	µg/L	NS	<0.7	<0.7	<0.7
Chloroprene	µg/L	NS	<0.23	<0.23	<0.23
Dichlorodifluoromethane	µg/L	1000	<0.25	<0.25	<0.25
Ethyl Methacrylate	µg/L	NS	<0.68	<0.68	<0.68
Methacrylonitrile	µg/L	NS	<3.3	<3.3	<3.3
Methyl Methacrylate	µg/L	NS	<0.76	<0.76	<0.76
Naphthalene	µg/L	100	<3	<3	<3
Propionitrile	µg/L	NS	<3.4	<3.4	<3.4

Detections at or above the RL are shown in bold italics on gray background.
Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.
NS = No standard

Black Hawk County Landfill
Appendix I Results
Monitoring Well OW-213BR

Parameter Name	Units	GPS	Mar-20	Aug-20	Sep-20	Dec-20	Mar-21	Nov-21	Apr-22	Nov-22	Jan-23	Mar-23	Sep-23	May-24	Oct-24
Appendix I Inorganics															
Total Suspended Solids	mg/L	NS	***1.75 J***	***1.38 J***	***1.38 J***	***1.13 J***	***0.875 J***	***2***	***1.38 J***	***1.13 J***	***1.13 J***	<0.638	<1.7	<3.7	***2.25***
Turbidity, Field	NTU	NS	***1.94***	***0.8***	***1.78***	***0.42***	***0.07***	***1.09***	0	0	0	***0.78***	***1.74***	***2.49***	***8.22***
Turbidity, Lab	NTU	NS	***0.52 J***	--	--	--	--	--	--	--	--	--	--	--	--
Antimony	µg/L	6	<0.58	<0.51	<0.51	<0.51	<1.1	<1.1	<0.69	<0.69	<0.69	<0.69	<1	<1	<1
Antimony, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	<0.88	<0.88	<0.88	<0.88	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.53	<0.53	<0.53
Arsenic, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	***77.9***	***82.3***	***82.1***	***84***	***73.7***	***72.4***	***53.3***	***66.7***	***62.8***	***57.9***	***70.6***	***59.9***	***75.4***
Barium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.33	<0.33	<0.33
Beryllium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	***0.065 J***	***0.078 J***	***0.118***	***0.246***	<0.051	***0.065 J***	<0.055	***0.074 J***	<0.055	<0.055	<0.1	<0.1	***0.405***
Cadmium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	<1.1	<1.1	<1.1	***1.14 J***	***1.54 J***	***1.65 J***	***1.26 J***	<1.1	***1.75 J***	***1.36 J***	<1.1	***1.85 J***	***2.04 J***
Chromium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	9.83	***0.422 J***	***0.471 J***	***0.544***	***0.504***	<0.091	***0.329 J***	<0.19	<0.19	<0.19	<0.19	<0.17	***0.587***	***2.01***
Cobalt, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	1300	<3.2	***2.53 J***	***2.23 J***	***3.66 J***	<1.4	***1.84 J***	<1.8	<1.8	<1.8	<1.8	***1.89 J***	<1.8	***5.64***
Copper, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	<0.27	***0.112 J***	<0.11	***0.34 J***	<0.21	<0.21	<0.24	<0.24	<0.24	<0.24	<0.24	<0.26	<0.26
Lead, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	µg/L	722	***5.69***	***5.35***	***6.06***	***7.21***	***3.33 J***	***5.35***	<1.9	***4.52 J***	***2.59 J***	<1.9	***5.5***	***16.5***	***45.2***
Nickel, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	<1	<1	<1	***1.28 J***	<0.96	<0.96	<0.96	<0.96	<0.96	<0.96	<1.4	<1.4	<1.4
Selenium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	µg/L	100	<0.37	<0.37	<0.37	<0.37	<0.42	<0.42	<0.49	<0.49	<0.49	<0.49	<0.5	<0.5	<0.5
Silver, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	<0.26	<0.26	<0.26	***0.773 J***	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.57	***1.58***
Thallium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium	µg/L	35	<0.82	<0.85	<0.85	<0.85	<1.1	***1.42 J***	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	***1.48 J***
Vanadium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	2000	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<6.4	<9.7	<9.7
Zinc, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Appendix I Organics															
1,1,1,2-Tetrachloroethane	µg/L	70	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38
1,1,1-Trichloroethane	µg/L	200	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19
1,1,2,2-Tetrachloroethane	µg/L	0.3	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47
1,1,2-Trichloroethane	µg/L	5	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45
1,1-Dichloroethane	µg/L	140	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22
1,1-Dichloroethylene	µg/L	7	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56
1,2,3-Trichloropropane	µg/L	0.0058	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59
1,2-Dibromo-3-chloropropane	µg/L	0.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2
1,2-Dibromoethane	µg/L	0.05	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34
1,2-Dichlorobenzene	µg/L	600	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37
1,2-Dichloroethane	µg/L	5	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39
1,2-Dichloropropane	µg/L	5	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27
1,4-Dichlorobenzene	µg/L	75	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23
2-Butanone	µg/L	4000	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1
2-Hexanone	µg/L	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
4-Methyl-2-pentanone	µg/L	560	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1
Acetone	µg/L	6300	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	***3.98 J***	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1
Acrylonitrile	µg/L	0.32	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2
Benzene	µg/L	5	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	***0.294 J***	***0.404 J***
Bromochloromethane	µg/L	90	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54
Bromodichloromethane	µg/L	80	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39
Bromomethane	µg/L	10	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Carbon disulfide	µg/L	700	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45
Carbon Tetrachloride	µg/L	5	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65
Chlorobenzene	µg/L	100	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Chloroethane	µg/L	2800	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79
Chloromethane	µg/L	NS	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61
cis-1,2-Dichloroethylene	µg/L	70	<0.21	<0.21	***0.526 J***	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	***0.404 J***	***0.528 J***
cis-1,3-Dichloropropene	µg/L	NS	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Dibromochloromethane	µg/L	80	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75
Dibromomethane	µg/L	70	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Dichloromethane	µg/L	5	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7
Ethylbenzene	µg/L	700	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31
Iodomethane	µg/L	NS	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7
Styrene	µg/L	100	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37
Tetrachloroethylene	µg/L	5	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48
Toluene	µg/L	1000	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43
Trans-1,2-dichloroethylene	µg/L	100	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27
trans-1,3-Dichloropropene	µg/L	NS	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56
trans-1,4-Dichloro-2-butene	µg/L	1.8	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Tribromomethane	µg/L	80	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78
Trichloroethylene	µg/L	5	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43
Trichlorofluoromethane	µg/L	2000	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38
Trichloromethane	µg/L	80	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3
Vinyl Acetate	µg/L	NS	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Vinyl Chloride	µg/L	2	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18
Xylenes	µg/L	10000	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Detections at or above the RL are shown in bold italics on gray background.

Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.

NS = No standard

Black Hawk County Landfill
Appendix I Results
Monitoring Well OW-216B/OW-216BR

Parameter Name	Units	GPS	Oct-07	Jan-08	Apr-08	Jun-08	Sep-08	Feb-09	May-09	Aug-09	Mar-10	May-10	Jul-10	Sep-10	Feb-11	May-11	Aug-11	Nov-11	May-12	Dec-12	Apr-13	Oct-13	Mar-14	Sep-14	Mar-15	Sep-15	Mar-16	Sep-16	Mar-17	Sep-17	Mar-18	Sep-18	Apr-19	Sep-19	Mar-20	Sep-20	Mar-21	Nov-21	May-22	Oct-22	Start OW-216BR Apr-23	Sep-23	May-24	Sep-24
Appendix I Inorganics																																											
Total Suspended Solids	mg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	***3***	***7.83***	***7.62***	***6.25***	***7.75***	***22.6***	***21.8***	***2.5***	***3.13***	***4.5***	***3.75***	***4.62***	***9.87***	***4.25***	***3***	***1.75 J***	***8.87***	<1.7	<1.7	***2.88***	***5.25***
Turbidity, Field	NTU	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	***0.4917***	***19.68***	***5.373***	***27.63***	***7.411***	***98.73***	***14.24***	***21.14***	***7.607***	***29.51***	***9.26***	***21.69***	***35.88***	***23.7***	***4.06***	***5.54***	***5.26***	***0.95***	***3.05***	***3.71***	***8.28***
Turbidity, Lab	NTU	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	***1.8***	***17***	***65***	***12.4***	***48.6***	***7.8***	***9.8***	***16.8***	***4.9***	***11.6***	***11.6***	***9.57***	--	--	--	--	--	--	--	--	--
Antimony	µg/L	6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<2.73	***2.9 J***	<0.584	<0.271	<0.4	<0.4	<0.161	<0.161	<0.161	<0.237	***0.242 J***	<0.185	<0.185	<0.42	<0.42	<0.53	<0.53	<0.58	<0.51	<1.1	<1.1	<0.69	<0.69	<1	<1	<1	<1
Antimony, Dissolved	µg/L	NS	--	--	--	--	--	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<2.73	***1.14 J***	<0.584	<0.271	<0.4	<0.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	***6.29***	***36.8***	<1	***7.07***	***1.74***	***2.02***	***6.73***	<1	<1	<1	<1	<1	***4.3***	<2	<1	<0.6	<0.185	***4.25***	<2.72	***5.4***	***0.601 J***	***0.949 J***	***1.41 J***	***1.47 J***	***1.19 J***	<0.672	***4.18***	***2.8***	<0.57	***0.834 J***	***1.27 J***	***0.923 J***	<0.88	***1.57 J***	***0.873 J***	***0.755 J***	<0.75	<0.75	***0.654 J***	***0.615 J***	<0.53	<0.53
Arsenic, Dissolved	µg/L	NS	--	--	--	--	--	<1	<1	<1	<2	<2	<1	<1	***1.07***	<2	<2	<0.47	<0.185	<0.185	<2.72	***0.762 J***	<0.33	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	***325***	***1340***	***148***	***282***	***218***	***207***	***458***	***181***	***164***	***277***	***163***	***213***	***296***	***207***	***234***	***217***	***155***	***277***	***80.1***	***210***	***56.7***	***66.4***	***61.5***	***91.7***	***81***	***89.2***	***130***	***154***	***84.8***	***101***	***91.2***	***113***	***91.8***	***119***	***98.7***	***123***	***57.4***	***86.1***	***262***	***225***	***222***	***246***
Barium, Dissolved	µg/L	NS	--	--	--	--	--	***159***	***156***	***167***	***153***	***197***	***154***	***184***	***177***	***191***	***244***	***210***	***155***	***140***	***62.5***	***55.1***	***44.9***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	<1	***4.56***	<1	<1	<1	<1	***1.19***	<1	<1	<1	<1	<1	<1	<1	<1	<0.051	<0.169	***0.219 J***	<0.348	***0.327 J***	<0.08	<0.039	<0.039	***0.045 J***	<0.221	<0.221	<0.125	<0.125	<0.19	<0.19	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.33	<0.33	<0.33	<0.33
Beryllium, Dissolved	µg/L	NS	--	--	--	--	--	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.051	<0.169	<0.169	<0.348	<0.08	<0.08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	<0.5	***2.28***	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	***0.508***	<0.5	<0.5	<0.5	<0.5	<0.5	<0.124	<0.195	***0.209 J***	<0.53	***0.141 J***	<0.1	<0.112	<0.112	<0.112	<0.0351	***0.064 J***	<0.0441	<0.0441	<0.06	<0.06	<0.0777	<0.039	<0.039	<0.049	<0.051	<0.051	<0.055	<0.0555	<0.1	<0.1	<0.1	<0.1
Cadmium, Dissolved	µg/L	NS	--	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	***0.141 J***	<0.195	<0.195	<0.53	<0.1	<0.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	***30.3***	***333***	***5.07***	<20	<20	<20	***52.2***	<20	<20	<20	<20	<20	<20	<20	<20	<1.81	<1.81	***28***	***2.42 J***	***19.3***	***2.07***	<1.24	***1.83 J***	<1.24	<0.355	<0.355	<0.729	<0.729	***3 J***	<0.76	<0.98	<0.98	<1.1	<1.1	<1.1	<1.1	***1.65 J***	<1.1	<1.1	<1.1	<1.2	<1.2
Chromium, Dissolved	µg/L	NS	--	--	--	--	--	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	***4.31 J***	<1.81	***2.61 J***	<2.09	<0.5	***0.694 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	9.83	<20	***64.6***	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<1.55	<1.55	***5.57 J***	***1.45 J***	***5.05***	***1.59***	***6.75***	***4.04***	***4.27***	***4.3***	***0.184 J***	***2***	***0.806***	***0.324 J***	***2.17***	***3.24***	***1.68***	***2.81***	***1.01***	***1.8***	***0.509***	<0.19	<0.19	<0.17	<0.17	<0.17	<0.17
Cobalt, Dissolved	µg/L	NS	--	--	--	--	--	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<1.55	<1.55	<1.55	<0.277	***1.24***	***0.149 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	1300	<20	***194***	<20	<20	<20	***33.9***	<20	<20	<20	<20	<20	<20	<20	<20	<20	***6.99 J***	***3.43 J***	***13.2 J***	***5.99***	***13.7***	***2.52***	***0.68 J***	<0.485	<0.485	<1.22	<1.22	<2.19	<2.19	<1.6	<1.6	<2	<2	<3.2	<1.5	<1.4	<1.4	***2.5 J***	***2.84 J***	<1.8	<1.8	<1.8	<1.8
Copper, Dissolved	µg/L	NS	--	--	--	--	--	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	***7.62 J***	<1.51	***1.96 J***	***2.05 J***	***1.8 J***	***1.64 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	***5.04***	***55.1***	<4	***6.66***	<4	<4	***10.3***	<4	<4	***4.79***	<4	<4	***4.93***	<4	<4	<1	***0.983 J***	***5***	***1.06 J***	***4.24***	***0.371 J***	<0.0967	<0.0967	<0.0967	<0.211	<0.211	<0.324	<0.324	<0.25	<0.25	<0.27	<0.27	<0.27	<0.27	<0.11	<0.21	<0.21	<0.24	<0.24	<0.24	<0.24	<0.26	<0.26
Lead, Dissolved	µg/L	NS	--	--	--	--	--	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<1	<0.821	<0.821	<1.04	<0.18	<0.18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	µg/L	722	<50	***203***	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	***4.76 J***	***5.87 J***	***19.3 J***	***10.8***	***18.7***	***5.59***	***12.4***	***7.87***	***8.66***	***6.71***	***2.62 J***	***3.81 J***	***3.6 J***	***5.85***	***6.2***	***6.28***	***4.44 J***	***3.95 J***	***3.33 J***	***3.71 J***	***4.4 J***	***2.55 J***	***3.17 J***	<1.9	<1.9	<2.1	<2.1
Nickel, Dissolved	µg/L	NS	--	--	--	--	--	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	***3.94 J***	***4.86 J***	<2.58	***5.96***	***7.73***	***3.76***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<1.69	<1.83	<1.83	<7.3	***0.939 J***	<0.7	<3.34	<3.34	<3.34	<0.63	<0.63	<0.928	<0.928	<0.9	<0.9	<1	<1	***1.11 J***	<1	<0.96	<0.96	<0.96	<0.96	***2.01 J***	<1.4	<1.4	<1.4
Selenium, Dissolved	µg/L	NS	--	--	--	--	--	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<1.69	<1.83	<1.83	<7.3	<0.7	<0.7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	µg/L	100	<20	<20	<1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<1.7	<1.7	<1.7	<0.395	***0.0599 J***	<0.033	<0.042	<0.042	***0.079 J***	<0.153	<0.153	<0.14	<0.14	<0.3	<0.3	<0.37	<0.37	<0.37	<0.37	<0.42	<0.42	<0.49	<0.49	<0.5	<0.5	<0.5	<0.5
Silver, Dissolved	µg/L	NS	--	--	--	--	--	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<1.7	<1.7	<1.7	<0.395	<0.033	<0.033	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<0.84	<0.523	<0.523	<0.134	***0.212 J***	<0.05	<0.0325	<0.0325	<0.0325	<0.0255	<0.0255	<0.0644	<0.0644	<0.17	<0.17	<0.27	<0.27	<0.26	<0.26	<0.26	<0.26	***0.381 J***	***0.676 J***	<0.57	<0.57	<0.57	<0.57
Thallium, Dissolved	µg/L	NS	--	--	--	--	--	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<0.84	<0.523	<0.523	<0.134	<0.05	***0.121 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium	µg/L	35	<50	***226***	<50	<50	<50	<50	***50.1***	<50	<50	<50	<50	<50	<50	<50	<50	<2.1	***3.46 J***	***19.2 J***	<4.17	***16.3***	***1.19 J***	<0.449	<0.449	<0.449	<0.255	***0.863 J***	<0.84	<0.84	<0.52	<0.52	<0.82	<0.82	<0.82	<0.85	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Vanadium, Dissolved	µg/L	NS	--	--	--	--	--	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<2.1	***2.89 J***	<2.1	<4.17	<0.5	<0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	2000	***66.2***	***330***	<20	***101***	***35.1***	***45.6***	***82.7***	***45***	***66.8***	<20	***27.4***	***25.8***	***37.6***	<20	<20	<9.11	***37.5***	***68.3***	***4.24 J***	***24.5***	***3.49 J***	<6.95	<6.95	<6.95	<5.21	<5.21	<11.5	<11.5	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<6.4	<6.4	<9.7	<9.7
Zinc, Dissolved	µg/L	NS	--	--	--	--	--	***36.4***	<20	***39.9***	***59.9***	<20	***26.5***	***22.5***	***34.8***	<20	<20	<9.11	<9.11	***53.6***	<3.13	***3.89 J***	***4.12 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Appendix I Organics																																											
1,1,1,2-Tetrachloroethane	µg/L	70	<1	<1	<1	<1	<1	<1	<1	<1	<1	<4	<1	<5	<1	<1	<1	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38
1,1,1-Trichloroethane	µg/L	200	<1	<1	<1	<1	<1	<1	<1	<1	<1	<4	<1	<1	<1	<1	<1	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19
1,1,2,2-Tetrachloroethane	µg/L	0.3	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47
1,1,2-Trichloroethane	µg/L	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45
1,1-Dichloroethane	µg/L	140	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22
1,1-Dichloroethylene	µg/L	7	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56
1,2,3-Trichloropropane	µg/L	0.0058	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59
1,2-Dibromo-3-chloropropane	µg/L	0.2	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2
1,2-Dibromoethane	µg/L	0.05	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34
1,2-Dichlorobenzene	µg/L	600	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.14	<0.14	<0.14	***0.171 J***	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37
1,2-Dichloroethane	µg/L	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39
1,2-Dichloropropane	µg/L	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27
1,4-Dichlorobenzene	µg/L	75	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	***0.427 J***	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23
2-Butanone	µg/L	4000	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	***2.64 J***	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<1.04	<1.04	<1.04	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1
2-Hexanone	µg/L	NS	<10	<10	<10	<10	<10	<10	<10	<10	<10	<20	<10	<10	<10	<10	<10	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
4-Methyl-2-pentanone	µg/L	560	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1
Acetone	µg/L	6300	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	***3.58 J***	<1.79	<1.79	<1.79	<1.79	<1.79	<1.79	<1.79	<1.79	***2.63 J***	<1.79	***2.78 J***	***3.21 J***	***4.28 J***	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	***3.33 J***	<3.1	<3.1	<3.1	<3.1	<3.1
Acrylonitrile	µg/L	0.32	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2
Benzene	µg/L	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	***0.747***	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22
Bromochloromethane	µg/L	90	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54
Bromodichloromethane	µg/L	80	<1	<1	<1	<1	<1	<1	<1	<1	<1	<4	<1	<1	<1	<1	<1	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39
Bromomethane	µg/L	10	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	***0.341 J***	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22
Carbon disulfide	µg/L	700	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.15	<0.15	***0.22 J***	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45
Carbon Tetrachloride	µg/L	5	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<5	<5	<2	<2	<2	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65
Chlorobenzene	µg/L	100	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	***0.736 J***	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Chloroethane	µg/L	2800	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79
Chloromethane	µg/L	NS	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<0.31	***0.55 J***	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	***0.361 J***	<0.31	<0.31	<0.31	<0.31	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61
cis-1,2-Dichloroethylene	µg/L	70	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21
cis-1,3-Dichloropropene	µg/L	NS	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<5	<5	<5	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Dibromochloromethane	µg/L	80	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75
Dibromomethane	µg/L	70	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Dichloromethane	µg/L	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<0.17	<0.17	***0.21 J***	<0.17	<0.17	***1.19

Black Hawk County Landfill
Appendix I Results
Monitoring Well OW-219B

Parameter Name	Units	GPS	Mar-20	Aug-20	Sep-20	Dec-20	Mar-21	Nov-21	Apr-22	Nov-22	Apr-23	Sep-23	May-24	Oct-24
Appendix I Inorganics														
Total Suspended Solids	mg/L	NS	***3.25***	***2***	***1.38 J***	<0.638	***5***	***1.63 J***	***2.67 J***	***6.38***	***3.33 J***	***4.88***	***3.87***	***10.6***
Turbidity, Field	NTU	NS	***0.26***	***1.03***	***1.25***	***0.1***	***0.74***	***0.06***	***5.95***	***4.31***	***1.75***	***2.73***	***3.31***	***0.62***
Turbidity, Lab	NTU	NS	***0.71 J***	--	--	--	--	--	--	--	--	--	--	--
Antimony	µg/L	6	<0.58	<0.51	<0.51	<0.51	<1.1	<1.1	<0.69	<0.69	<1	<1	<1	<1
Antimony, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	<0.88	<0.88	<0.88	<0.88	<0.75	<0.75	<0.75	<0.75	***1 J***	<0.53	<0.53	<0.53
Arsenic, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	***28.7***	***34.9***	***33***	***34.2***	***32.4***	***35.9***	***30.1***	***29.8***	***23.1***	***24.3***	***27.5***	***29***
Barium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.33	<0.33	<0.33	<0.33
Beryllium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	***0.144***	***0.82***	***0.134***	***0.154***	***0.177***	***0.192***	***0.154***	***0.168***	***0.48***	***0.109 J***	***0.106 J***	***0.186 J***
Cadmium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	***3.02 J***	***1.21 J***	***3.03 J***	***2.58 J***	***4.19 J***
Chromium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	9.83	***1.9***	***1.43***	***0.62***	***0.528***	***0.481 J***	***0.599***	***0.484 J***	***0.886***	***0.836***	***0.48 J***	***0.528***	***2.37***
Cobalt, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	1300	<3.2	***2.28 J***	***2.57 J***	<1.5	<1.4	***2.1 J***	<1.8	<1.8	***2 J***	<1.8	<1.8	***2.14 J***
Copper, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	<0.27	***0.147 J***	<0.11	<0.11	<0.21	<0.21	<0.24	<0.24	***0.488 J***	<0.24	<0.26	<0.26
Lead, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	µg/L	722	***4.35 J***	***11.9***	***6.91***	***5.79***	***4.53 J***	***6***	***4.54 J***	***4.88 J***	***5.38***	***3.7 J***	***2.27 J***	***12.1***
Nickel, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	<1	<1	<1	<1	<0.96	<0.96	<0.96	<0.96	***2.6 J***	<1.4	<1.4	<1.4
Selenium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--
Silver	µg/L	100	<0.37	<0.37	<0.37	<0.37	<0.42	<0.42	<0.49	<0.49	<0.5	<0.5	<0.5	<0.5
Silver, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	<0.26	<0.26	<0.26	<0.26	***0.609 J***	<0.26	<0.26	<0.26	***3.48***	<0.26	<0.57	***0.793 J***
Thallium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium	µg/L	35	<0.82	<0.85	<0.85	<0.85	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Vanadium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	2000	<10	<10	<10	<10	<10	<10	<10	<10	<6.4	<6.4	<9.7	<9.7
Zinc, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--
Appendix I Organics														
1,1,1,2-Tetrachloroethane	µg/L	70	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38
1,1,1-Trichloroethane	µg/L	200	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19
1,1,2,2-Tetrachloroethane	µg/L	0.3	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47
1,1,2-Trichloroethane	µg/L	5	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45
1,1-Dichloroethane	µg/L	140	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22
1,1-Dichloroethylene	µg/L	7	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56
1,2,3-Trichloropropane	µg/L	0.0058	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59
1,2-Dibromo-3-chloropropane	µg/L	0.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2
1,2-Dibromoethane	µg/L	0.05	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34
1,2-Dichlorobenzene	µg/L	600	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37
1,2-Dichloroethane	µg/L	5	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39
1,2-Dichloropropane	µg/L	5	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27
1,4-Dichlorobenzene	µg/L	75	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23
2-Butanone	µg/L	4000	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1
2-Hexanone	µg/L	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
4-Methyl-2-pentanone	µg/L	560	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1
Acetone	µg/L	6300	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1
Acrylonitrile	µg/L	0.32	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2
Benzene	µg/L	5	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22
Bromochloromethane	µg/L	90	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54
Bromodichloromethane	µg/L	80	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39
Bromomethane	µg/L	10	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Carbon disulfide	µg/L	700	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45
Carbon Tetrachloride	µg/L	5	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65
Chlorobenzene	µg/L	100	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Chloroethane	µg/L	2800	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79
Chloromethane	µg/L	NS	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61
cis-1,2-Dichloroethylene	µg/L	70	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21
cis-1,3-Dichloropropene	µg/L	NS	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Dibromochloromethane	µg/L	80	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75
Dibromomethane	µg/L	70	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Dichloromethane	µg/L	5	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7
Ethylbenzene	µg/L	700	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31
Iodomethane	µg/L	NS	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7
Styrene	µg/L	100	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37
Tetrachloroethylene	µg/L	5	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48
Toluene	µg/L	1000	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43
Trans-1,2-dichloroethylene	µg/L	100	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27
trans-1,3-Dichloropropene	µg/L	NS	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56
trans-1,4-Dichloro-2-butene	µg/L	1.8	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Tribromomethane	µg/L	80	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78
Trichloroethylene	µg/L	5	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43
Trichlorofluoromethane	µg/L	2000	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38
Trichloromethane	µg/L	80	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3
Vinyl Acetate	µg/L	NS	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Vinyl Chloride	µg/L	2	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18
Xylenes	µg/L	10000	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Detections at or above the RL are shown in bold italics on gray background.

Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.

NS = No standard

Black Hawk County Landfill
Appendix I Results
Monitoring Well OW-220B

Parameter Name	Units	GPS	Mar-20	Aug-20	Sep-20	Dec-20	Mar-21	Jun-21	Oct-21	Apr-22	Nov-22	Apr-23	Sep-23	May-24	Oct-24
Appendix I Inorganics															
Total Suspended Solids	mg/L	NS	***104***	***83.5***	***66.4***	***39.9***	***67***	--	***70***	***56***	***95***	***70***	***58***	***115***	***81***
Turbidity, Field	NTU	NS	***8.25***	***19.97***	***7***	***3.24***	***3.75***	***14.44***	--	***7.52***	***10.31***	***7.69***	***9.51***	***4.72***	***5.01***
Turbidity, Lab	NTU	NS	***343***	--	--	--	--	--	--	--	--	--	--	--	--
Antimony	µg/L	6	***0.681 J***	<0.51	<0.51	<0.51	<1.1	--	<4.4	<2.76	<0.69	<1	<1	<1	<1
Antimony, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	***13.3***	***9.74***	***13.4***	***12.8***	***13.2***	--	***14.5***	***4.87 J***	***14.5***	***16.4***	***14.5***	***14.4***	***25.3***
Arsenic, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	***706***	***867***	***732***	***853***	***722***	--	***792***	***847***	***706***	***1120***	***664***	***904***	***1010***
Barium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	<0.27	<0.27	<0.27	<0.27	<0.27	--	<1.08	<1.08	<0.27	<0.33	<0.33	<0.33	<0.33
Beryllium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	***0.461***	***0.087 J***	***0.143***	***0.094 J***	<0.051	--	<0.051	<0.22	<0.055	<0.1	<0.1	<0.1	<0.1
Cadmium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	***6.06***	***7.31***	***5.42***	***5.31***	***5.66***	--	***5.37***	***5.81 J***	***5.56***	***6.52***	***6.44***	***7***	***6.62***
Chromium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	9.83	***32.5***	***30.9***	***25.4***	***26.3***	***27.4***	--	***21.4***	***25.4***	***18.9***	***24.9***	***17.3***	***21.7***	***15.8***
Cobalt, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	1300	<3.2	***5.29***	<1.5	<1.5	***2.22 J***	--	<1.4	<7.2	<1.8	<1.8	***2.09 J***	<1.8	<1.8
Copper, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	***0.39 J***	***0.477 J***	***0.252 J***	***0.226 J***	***0.369 J***	--	<0.21	***0.272 J***	<0.24	***0.274 J***	***0.401 J***	<0.26	***0.697***
Lead, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	µg/L	722	***123***	***106***	***108***	***109***	***124***	--	***108***	***147***	***99.7***	***141***	***106***	***135***	***130***
Nickel, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	***1.83 J***	<1	<1	<1	<0.96	--	<0.96	<3.84	<0.96	<1.4	<1.4	<1.4	<1.4
Selenium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	µg/L	100	<0.37	<0.37	<0.37	<0.37	<0.42	--	<0.42	<1.96	<0.49	<0.5	<0.5	<0.5	<0.5
Silver, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	<0.26	<0.26	<0.26	<0.26	<0.26	--	<0.26	<0.26	<0.26	<0.26	<0.26	<0.57	***1.54***
Thallium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium	µg/L	35	<0.82	***1.21 J***	***0.874 J***	<0.85	***1.18 J***	--	***1.26 J***	<4.4	***1.72 J***	***1.34 J***	***2.1 J***	***1.37 J***	***1.92 J***
Vanadium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	2000	<10	<10	<10	<10	<10	--	<10	<40	<10	<6.4	***6.44 J***	<9.7	<9.7
Zinc, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Appendix I Organics															
1,1,1,2-Tetrachloroethane	µg/L	70	<0.38	<3.8	<0.38	<0.38	<0.38	--	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38
1,1,1-Trichloroethane	µg/L	200	<0.19	<1.9	<0.19	<0.19	<0.19	--	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19
1,1,2,2-Tetrachloroethane	µg/L	0.3	<0.47	<4.7	<0.47	<0.47	<0.47	--	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47
1,1,2-Trichloroethane	µg/L	5	<0.45	<4.5	<0.45	<0.45	<0.45	--	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45
1,1-Dichloroethane	µg/L	140	***1.02***	***10.7***	***0.873 J***	***0.868 J***	***0.898 J***	--	***0.791 J***	***1.04***	***0.689 J***	***0.975 J***	<0.22	***0.94 J***	***0.54 J***
1,1-Dichloroethylene	µg/L	7	<0.56	<5.6	<0.56	<0.56	<0.56	--	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56
1,2,3-Trichloropropane	µg/L	0.0058	<0.59	<5.9	<0.59	<0.59	<0.59	--	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59
1,2-Dibromo-3-chloropropane	µg/L	0.2	<1.2	<12	<1.2	<1.2	<1.2	--	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2
1,2-Dibromoethane	µg/L	0.05	<0.34	<3.4	<0.34	<0.34	<0.34	--	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34
1,2-Dichlorobenzene	µg/L	600	<0.37	<3.7	<0.37	<0.37	<0.37	--	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37
1,2-Dichloroethane	µg/L	5	<0.39	<3.9	<0.39	<0.39	<0.39	--	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39
1,2-Dichloropropane	µg/L	5	<0.27	<2.7	<0.27	<0.27	<0.27	--	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27
1,4-Dichlorobenzene	µg/L	75	***3.29***	***20.5***	***2.56***	***1.86***	***1.97***	--	<0.23	***1.81***	***1.54***	***2.14***	<0.23	***1.87***	***2.35***
2-Butanone	µg/L	4000	<2.1	<21	<2.1	<2.1	<2.1	--	<2.1	<2.1	<2.1	<2.1	<2.1	***5.29 J***	<2.1
2-Hexanone	µg/L	NS	<2	<20	<2	<2	<2	--	<2	<2	<2	<2	<2	<2	<2
4-Methyl-2-pentanone	µg/L	560	<2.1	<21	<2.1	<2.1	<2.1	--	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1
Acetone	µg/L	6300	<3.1	<31	***12.1***	<3.1	***5.78 J***	--	***10***	<3.1	***12.8***	***4.69 J***	***12.7***	***10.8***	***7.67 J***
Acrylonitrile	µg/L	0.32	<2.2	<22	<2.2	<2.2	<2.2	--	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2
Benzene	µg/L	5	***3.91***	***32.5***	***2.98***	***2.78***	***2.75***	--	***2.32***	***2.42***	***1.91***	***2.64***	***1.77***	***2.29***	***2.29***
Bromochloromethane	µg/L	90	<0.54	<5.4	<0.54	<0.54	<0.54	--	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54
Bromodichloromethane	µg/L	80	<0.39	<3.9	<0.39	<0.39	<0.39	--	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39
Bromomethane	µg/L	10	<1.1	<11	<11	<1.1	<1.1	--	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Carbon disulfide	µg/L	700	<0.45	<4.5	<0.45	<0.45	<0.45	--	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45
Carbon Tetrachloride	µg/L	5	<0.65	<6.5	<0.65	<0.65	<0.65	--	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65
Chlorobenzene	µg/L	100	***0.758 J***	***5.13 J***	<0.4	***0.528 J***	***0.501 J***	--	<0.4	***0.418 J***	***0.414 J***	***0.435 J***	<0.4	<0.4	<0.4
Chloroethane	µg/L	2800	***5.58***	***39.8 J***	<7.9	***3.11 J***	<0.79	--	***2.86 J***	***2.79 J***	***1.56 J***	<0.79	<0.79	***2.09 J***	***1.26 J***
Chloromethane	µg/L	NS	<0.61	<6.1	<6.1	<0.61	<0.61	--	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61
cis-1,2-Dichloroethylene	µg/L	70	***0.772 J***	***13.8***	***0.698 J***	***0.574 J***	***0.573 J***	--	***0.507 J***	***0.703 J***	<0.21	***0.345 J***	<0.21	***0.474 J***	***0.407 J***
cis-1,3-Dichloropropene	µg/L	NS	<0.25	<2.5	<0.25	<0.25	<0.25	--	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Dibromochloromethane	µg/L	80	<0.75	<7.5	<0.75	<0.75	<0.75	--	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75
Dibromomethane	µg/L	70	<0.33	<3.3	<0.33	<0.33	<0.33	--	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Dichloromethane	µg/L	5	<1.7	<17	<1.7	<1.7	<1.7	--	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7
Ethylbenzene	µg/L	700	<0.31	<3.1	<0.31	<0.31	<0.31	--	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31
Iodomethane	µg/L	NS	<7	<70	<7	<7	<7	--	<7	<7	<7	<7	<7	<7	<7
Styrene	µg/L	100	<0.37	<3.7	<0.37	<0.37	<0.37	--	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37
Tetrachloroethylene	µg/L	5	<0.48	<4.8	<0.48	<0.48	<0.48	--	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48
Toluene	µg/L	1000	<0.43	<4.3	<0.43	<0.43	<0.43	--	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43
Trans-1,2-dichloroethylene	µg/L	100	<0.27	<2.7	<0.27	<0.27	<0.27	--	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27
trans-1,3-Dichloropropene	µg/L	NS	<0.56	<5.6	<5.6	<0.56	<0.56	--	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56
trans-1,4-Dichloro-2-butene	µg/L	1.8	<1.1	<11	<1.1	<1.1	<1.1	--	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Tribromomethane	µg/L	80	<0.78	<7.8	<7.8	<0.78	<0.78	--	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78
Trichloroethylene	µg/L	5	<0.43	<4.3	<0.43	<0.43	<0.43	--	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43
Trichlorofluoromethane	µg/L	2000	<0.38	<3.8	<3.8	<0.38	<0.38	--	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38
Trichloromethane	µg/L	80	<1.3	<13	<1.3	<1.3	<1.3	--	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3
Vinyl Acetate	µg/L	NS	<2.5	<25	<2.5	<2.5	<2.5	--	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Vinyl Chloride	µg/L	2	<0.18	<1.8	<1.8	<0.18	<0.18	--	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18
Xylenes	µg/L	10000	<0.4	<4	<0.4	<0.4	<0.4	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Detections at or above the RL are shown in bold italics on gray background.

Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.

NS = No standard

Black Hawk County Landfill
Appendix II Results
Monitoring Well OW-220B

Parameter Name	Units	GPS	Sep-20	Mar-21	Jun-21	Oct-21	Apr-22	Nov-22	Apr-23	Sep-23	May-24
Alcohols/Gycols by GC											
Acetonitrile	µg/L	NS	<404	--	--	<404	--	<404	--	--	--
Isobutanol	µg/L	2100	<553	--	--	<553	--	<553	--	--	--
Herbicides (GC)											
2,4,5-T	µg/L	70	<0.0364	--	--	<0.158	--	Sample Lost	--	--	--
2,4-D	µg/L	70	***1.25***	<0.525	<3.18	<0.619	<0.549	Sample Lost	<0.598	<1.32	<0.239
Silvex (2,4,5-TP)	µg/L	50	***0.379***	<0.326	<0.747	***0.763 J***	<0.129	Sample Lost	<0.141	<0.359	***0.372***
Inorganics											
Cyanide	µg/L	200	<5	--	--	<5.3	--	<4.3	--	--	--
Mercury	µg/L	2	<0.1	--	--	<0.15	--	<0.11	--	--	--
Sulfide	µg/L	NS	<10000	--	--	<231	--	***447 J***	--	--	--
Tin	µg/L	4200	<2.4	--	--	<3	--	<3	--	--	--
PCBs (EPA Method 8082)											
PCB-1016	µg/L	NS	<0.306	--	--	<0.28	--	<0.173	--	--	--
PCB-1221	µg/L	NS	<0.306	--	--	<0.28	--	<0.173	--	--	--
PCB-1232	µg/L	NS	<0.306	--	--	<0.28	--	<0.173	--	--	--
PCB-1242	µg/L	NS	<0.306	--	--	<0.28	--	<0.173	--	--	--
PCB-1248	µg/L	NS	<0.247	--	--	<0.226	--	<0.112	--	--	--
PCB-1254	µg/L	NS	<0.247	--	--	<0.226	--	<0.112	--	--	--
PCB-1260	µg/L	NS	<0.247	--	--	<0.226	--	<0.112	--	--	--
Pesticides (EPA Method 8081A)											
4,4'-DDD	µg/L	0.73	***0.0093 J***	--	--	***0.017 J***	--	<0.0276	--	--	--
4,4'-DDE	µg/L	0.51	***0.00589 J***	--	--	<0.00914	--	<0.0276	--	--	--
4,4'-DDT	µg/L	0.51	<0.00447	--	--	<0.0129	--	<0.0429	--	--	--
Aldrin	µg/L	0.01	***0.023 J***	--	--	<0.0129	--	<0.0327	--	--	--
alpha-BHC	µg/L	0.028	<0.002	--	--	<0.0108	--	<0.0296	--	--	--
beta-BHC	µg/L	0.042	<0.00565	--	--	<0.014	--	<0.0378	--	--	--
Chlordane	µg/L	2	<0.0753	--	--	<0.237	--	<0.827	--	--	--
delta-BHC	µg/L	2.1	***0.00715 J***	--	--	***0.0214 J***	--	<0.0276	--	--	--
Dieldrin	µg/L	0.011	***0.00964 J***	--	--	<0.0129	--	<0.0265	--	--	--
Endosulfan I	µg/L	42	***0.00407 J***	--	--	<0.0118	--	<0.0337	--	--	--
Endosulfan II	µg/L	42	<0.00224	--	--	<0.00871	--	<0.0296	--	--	--
Endosulfan sulfate	µg/L	NS	<0.00294	--	--	<0.00903	--	<0.0306	--	--	--
Endrin	µg/L	2	<0.00224	--	--	<0.0108	--	<0.0265	--	--	--
Endrin aldehyde	µg/L	2.1	<0.00859	--	--	<0.0103	--	<0.0296	--	--	--
gamma-BHC (Lindane)	µg/L	0.2	<0.00224	--	--	<0.0151	--	<0.0367	--	--	--
Heptachlor	µg/L	0.4	<0.00306	--	--	<0.0129	--	<0.0337	--	--	--
Heptachlor epoxide	µg/L	0.2	<0.00718	--	--	<0.00978	--	<0.0296	--	--	--
Methoxychlor	µg/L	40	***0.00639 J***	--	--	<0.0151	--	<0.0418	--	--	--
Toxaphene	µg/L	3	<0.0682	--	--	<0.441	--	<0.704	--	--	--
Semivolatile Organics by GC/MS											
1,2,4,5-Tetrachlorobenzene	µg/L	2.1	<1.78	--	--	<1.84	--	<0.587	--	--	--
1,3,5-Trinitrobenzene	µg/L	NS	<1.44	--	--	<1.49	--	<2.5	--	--	--
1,3-Dinitrobenzene	µg/L	1	<1.11	--	--	<1.15	--	<3.48	--	--	--
1,4-Naphthoquinone	µg/L	NS	<1.09	--	--	<1.13	--	<3.91	--	--	--
1,4-Phenylenediamine	µg/L	NS	<0.556	--	--	<0.575	--	<2.07	--	--	--
1-Naphthylamine	µg/L	NS	<0.978	--	--	<1.01	--	<2.72	--	--	--
2,3,4,6-Tetrachlorophenol	µg/L	NS	<1.1	--	--	<1.14	--	<5.76	--	--	--
2,4,5-Trichlorophenol	µg/L	700	<1.22	--	--	<1.26	--	<5.76	--	--	--
2,4,6-Trichlorophenol	µg/L	16	<1.33	--	--	<1.38	--	<5.43	--	--	--
2,4-Dichlorophenol	µg/L	20	<1.22	--	--	<1.26	--	<0.924	--	--	--
2,4-Dimethylphenol	µg/L	100	<1.11	--	--	<1.15	--	***1.43 J***	--	--	--
2,4-Dinitrophenol	µg/L	14	<6.33	--	--	<6.55	--	<14.1	--	--	--
2,4-Dinitrotoluene	µg/L	0.25	<1.22	--	--	<1.26	--	<6.96	--	--	--
2,6-Dichlorophenol	µg/L	NS	<1.22	--	--	<1.26	--	<0.75	--	--	--
2,6-Dinitrotoluene	µg/L	0.26	<1.22	--	--	<1.26	--	<0.565	--	--	--
2-Acetylaminofluorene	µg/L	NS	<1.33	--	--	<1.38	--	<2.93	--	--	--
2-Chloronaphthalene	µg/L	560	<1.44	--	--	<1.49	--	<0.696	--	--	--
2-Chlorophenol	µg/L	40	<1.22	--	--	<1.26	--	<0.587	--	--	--
2-Methylnaphthalene	µg/L	28	<1.44	--	--	<1.49	--	<0.641	--	--	--
2-Methylphenol (o-Cresol)	µg/L	35	<1.11	--	--	<1.15	--	<0.707	--	--	--
2-Naphthylamine	µg/L	0.097	<0.956	--	--	<0.989	--	<2.28	--	--	--
2-Nitroaniline	µg/L	NS	<1.33	--	--	<1.38	--	<6.41	--	--	--
2-Nitrophenol	µg/L	NS	<1.78	--	--	<1.84	--	<7.39	--	--	--
3,3'-Dichlorobenzidine	µg/L	0.39	<2	--	--	<2.07	--	<1.52	--	--	--
3,3'-Dimethylbenzidine	µg/L	NS	<2.22	--	--	<2.3	--	<1.63	--	--	--
3/4-Methylphenol	µg/L	70	<0.844	--	--	<0.874	--	<0.761	--	--	--
3-Methylcholanthrene	µg/L	NS	<2.78	--	--	<2.87	--	<0.348	--	--	--
3-Nitroaniline	µg/L	NS	<1.11	--	--	<1.15	--	<2.93	--	--	--
4,6-Dinitro-2-methylphenol	µg/L	NS	<2.78	--	--	<2.87	--	<7.5	--	--	--
4-Aminobiphenyl	µg/L	0.0083	<1.07	--	--	<1.1	--	<2.39	--	--	--
4-Bromophenyl phenyl ether	µg/L	NS	<2.11	--	--	<2.18	--	<0.761	--	--	--
4-Chloro-3-methylphenol	µg/L	700	<1.06	--	--	<1.09	--	<0.913	--	--	--
4-Chloroaniline	µg/L	28	<1.33	--	--	<1.38	--	<0.674	--	--	--
4-Chlorophenyl phenyl ether	µg/L	NS	<1.44	--	--	<1.49	--	<0.75	--	--	--
4-Nitroaniline	µg/L	NS	<1.89	--	--	<1.95	--	<1.41	--	--	--
4-Nitrophenol	µg/L	60	<2.78	--	--	<2.87	--	<8.26	--	--	--
5-Nitro-o-toluidine	µg/L	NS	<3.44	--	--	<3.56	--	<3.04	--	--	--
7,12-Dimethylbenz (a) anthracene	µg/L	NS	<1.02	--	--	<1.06	--	<2.07	--	--	--
Acenaphthene	µg/L	420	<1.44	--	--	<1.49	--	<0.696	--	--	--
Acenaphthylene	µg/L	210	<1.44	--	--	<1.49	--	<0.783	--	--	--
Acetophenone	µg/L	NS	<3.33	--	--	<3.45	--	<0.75	--	--	--
Anthracene	µg/L	2100	<1.22	--	--	<1.26	--	<0.946	--	--	--
Benzo (a) anthracene	µg/L	0.24	<1.22	--	--	<1.26	--	<0.924	--	--	--
Benzo (a) pyrene	µg/L	0.2	<1.67	--	--	<1.72	--	<8.8	--	--	--
Benzo (b) fluoranthene	µg/L	0.24	<1.33	--	--	<1.38	--	<5.33	--	--	--
Benzo (g,h,i) perylene	µg/L	21	<1.78	--	--	<1.84	--	<6.85	--	--	--
Benzo (k) fluoranthene	µg/L	2.4	<1.33	--	--	<1.38	--	<2.39	--	--	--
Benzyl alcohol	µg/L	700	<1.22	--	--	<1.26	--	<1.41	--	--	--
Bis(2-chloroethoxy)methane	µg/L	NS	<1.22	--	--	<1.26	--	<0.826	--	--	--
Bis(2-chloroethyl)ether	µg/L	0.16	<1.22	--	--	<1.26	--	<0.891	--	--	--
Bis(2-chloroisopropyl) ether	µg/L	300	<1.33	--	--	<1.38	--	<0.587	--	--	--
Bis(2-ethylhexyl)phthalate	µg/L	6	<2.89	--	--	<2.99	--	<5.98	--	--	--
Butyl benzyl phthalate	µg/L	140	<1.67	--	--	<1.72	--	<5.87	--	--	--
Chlorobenzilate	µg/L	NS	<3.22	--	--	<3.33	--	<3.91	--	--	--
Chrysene	µg/L	24	<1.22	--	--	<1.26	--	<0.946	--	--	--
Diallate (cis or trans)	µg/L	NS	<1.44	--	--	<1.49	--	<4.35	--	--	--
Dibenzo (a,h) anthracene	µg/L	0.024	<2.11	--	--	<2.18	--	<4.24	--	--	--
Dibenzofuran	µg/L	7	<1.33	--	--	<1.38	--	<0.804	--	--	--
Diethyl phthalate	µg/L	5600	<1.22	--	--	<1.26	--	<1.85	--	--	--
Dimethoate	µg/L	1.4	<1.11	--	--	<1.15	--	<3.91	--	--	--
Dimethyl phthalate	µg/L	NS	<2.78	--	--	<2.87	--	<1.09	--	--	--
Di-n-butyl phthalate	µg/L	700	<1.33	--	--	<1.38	--	<6.09	--	--	--
Di-n-octyl phthalate	µg/L	140	<3.33	--	--	<3.45	--	<7.61	--	--	--
Dinoseb	µg/L	7	<0.556	--	--	<0.575	--	<2.61	--	--	--
Diphenylamine	µg/L	180	<0.978	--	--	<1.01	--	<6.52	--	--	--
Disulfoton	µg/L	0.7	<0.711	--	--	<0.736	--	<2.61	--	--	--
Ethyl Methanesulfonate	µg/L	NS	<0.556	--	--	<0.575	--	<3.91	--	--	--
Famphur	µg/L	NS	<0.711	--	--	<0.736	--	<4.13	--	--	--
Fluoranthene	µg/L	280	<1.04	--	--	<1.08	--	<1.85	--	--	--
Fluorene	µg/L	280	<1.44	--	--	<1.49	--	<0.859	--	--	--
Hexachlorobenzene	µg/L	1	<1.56	--	--	<1.61	--	<0.761	--	--	--
Hexachlorobutadiene	µg/L	1	<1.33	--	--	<1.38	--	<0.935	--	--	--
Hexachlorocyclopentadiene	µg/L	50	<2.33	--	--	<2.41	--	<5.54	--	--	--
Hexachloroethane	µg/L	1	<1.44	--	--	<1.49	--	<1.05	--	--	--
Hexachloropropene	µg/L	NS	<1.78	--	--	<1.84	--	<2.83	--	--	--
Indeno (1,2,3-cd) pyrene	µg/L	0.24	<2.22	--	--	<2.3	--	<4.57	--	--	--
Isodrin	µg/L	NS	<0.644	--	--	<0.667	--	<5.11	--	--	--
Isophorone	µg/L	100	<1.1	--	--	<1.14	--	<1.01	--	--	--
Isosafrole	µg/L	NS	<0.556	--	--	<0.575	--	<2.5	--	--	--
Kepone	µg/L	NS	<2	--	--	<2.07	--	<1.09	--	--	--
Methapyrilene	µg/L	NS	<2.11	--	--	<2.18	--	<0.826	--	--	--
Methyl Methanesulfonate	µg/L	1.8	<0.556	--	--	<0.575	--	<3.59	--	--	--
Nitrobenzene	µg/L	14	<1.22	--	--	<1.26	--	<0.87	--	--	--
N-Nitrosodiethylamine	µg/L	NS	<0.556	--	--	<0.575	--	<3.7	--	--	--
N-Nitrosodimethylamine	µg/L	0.0034	<1.01	--	--	<1.05	--	<0.783	--	--	--
N-Nitrosodi-n-butylamine	µg/L	0.032	<0.556	--	--	<0.575	--	<4.24	--	--	--
N-Nitrosodi-n-propylamine	µg/L	NS	<1.11	--	--	<1.15	--	<1	--	--	--
N-Nitrosodiphenylamine	µg/L	36	<1.06	--	--	<1.09	--	<0.815	--	--	--
N-Nitrosomethylethylamine	µg/L	0.008	<1.44	--	--	<1.49	--	<5.33	--	--	--
N-Nitrosopiperidine	µg/L	NS	<0.556	--	--	<0.575	--	<2.93	--	--	--
N-Nitrosopyrrolidine	µg/L	0.083	<0.556	--	--	<0.575	--	<3.91	--	--	--
O,O,O-Triethyl phosphorothioate	µg/L	NS	<0.556	--	--	<0.575	--	<3.48	--	--	--
o-Toluidine	µg/L	11	<0.744	--	--	<0.77	--	<3.15	--	--	--
p-(Dimethylamino)azobenzene	µg/L	NS	<0.867	--	--	<0.897	--	<2.39	--	--	--
Parathion-ethyl	µg/L	NS	<1.78	--	--	<1.84	--	<2.39	--	--	--
Parathion-methyl	µg/L	1	<0.833	--	--	<0.862	--	<2.5	--	--	--
Pentachlorobenzene	µg/L	NS	<0.644	--	--	<0.667	--	<3.04	--	--	--
Pentachloronitrobenzene	µg/L	NS	<0.556	--	--	<0.575	--	<6.3	--	--	--
Pentachlorophenol	µg/L	1	<2.56	--	--	<2.64	--	<10.4	--	--	--
Phenacetin	µg/L	NS	<2	--	--	<2.07	--	<2.07	--	--	--
Phenanthrene	µg/L	210	<1.22	--	--	<1.26	--	<0.859	--	--	--
Phenol	µg/L	2000	<2.67	--	--	<2.76	--	<1.2	--	--	--
Phorate	µg/L	1.4	<0.556	--	--	<0.575	--	<3.48	--	--	--
Pronamide	µg/L	5	<0.556	--	--	<0.575	--	<2.93	--	--	--
Pyrene	µg/L	210	<1.56	--	--	<1.61	--	<0.859	--	--	--
Safrole	µg/L	NS	<0.556	--	--	<0.575	--	<3.04	--	--	--
Thionazin	µg/L	NS	<0.844	--	--	<0.874	--	<3.8	--	--	--
Volatile Organic Compounds											
1,1-Dichloropropene	µg/L	NS	<0.43	--	--	<0.43	--	<0.43	--	--	--
1,2,4-Trichlorobenzene	µg/L	70	<0.75	--	--	<0.75	--	<0.75	--	--	--
1,3-Dichlorobenzene	µg/L	600	<0.3	--	--	<0.3	--	<0.3	--	--	--
1,3-Dichloropropane	µg/L	NS	<0.4	--	--	<0.4	--	<0.4	--	--	--
2,2-Dichloropropane	µg/L	NS	0.766 J	--	--	<0.69	--	<0.69	--	--	--
Acrolein	µg/L	NS	<3.6	--	--	<3.6	--	<3.6	--	--	--
Allyl chloride	µg/L	NS	<0.7	--	--	<0.7	--	<0.7	--	--	--
Chloroprene	µg/L	NS	<0.23	--	--	<0.23	--	<0.23	--	--	--
Dichlorodifluoromethane	µg/L	1000	<2.5	--	--	<0.25	--	<0.25	--	--	--
Ethyl Methacrylate	µg/L	NS	<0.68	--	--	<0.68	--	<0.68	--	--	--
Methacrylonitrile	µg/L	NS	<3.3	--	--	<3.3	--	<3.3	--	--	--
Methyl Methacrylate	µg/L	NS	<0.76	--	--	<0.76	--	<0.76	--	--	--
Naphthalene	µg/L	100	<3	--	--	<3	--	<3	--	--	--
Propionitrile	µg/L	NS	<3.4	--	--	<3.4	--	<3.4	--	--	--

Detections at or above the RL are shown in bold italics on gray background.

Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.

NS = No standard

Black Hawk County Landfill
Appendix I Results
Monitoring Well OW-221B

Parameter Name	Units	GPS	Mar-20	Aug-20	Sep-20	Dec-20	Mar-21	Oct-21	Apr-22	Oct-22	Apr-23	Sep-23	Apr-24	Oct-24	Jan-25
Appendix I Inorganics															
Total Suspended Solids	mg/L	NS	***3***	***5.63***	***8.75***	***5.75***	***7.13***	***9.14***	***37***	***47***	***52***	***102***	***61***	***71***	--
Turbidity, Field	NTU	NS	***1.33***	***0.5***	***3.62***	***1***	***4.49***	***3.28***	***3.42***	***2.49***	***15.83***	***4.23***	***13.42***	***11.65***	***0.71***
Turbidity, Lab	NTU	NS	***4.62***	--	--	--	--	--	--	--	--	--	--	--	--
Antimony	µg/L	6	<0.58	<0.51	<0.51	<0.51	<1.1	<1.1	<0.69	<0.69	<1	<1	<1	<1	--
Antimony, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	***0.912 J***	***1.54 J***	***1.72 J***	***1.53 J***	***2.72***	***2.55***	***3.24***	***7.51***	***10.2***	***10.3***	***10.6***	***13.9***	--
Arsenic, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	***221***	***225***	***283***	***369***	***285***	***255***	***286***	***938***	***936***	***628***	***566***	***575***	--
Barium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.33	<0.33	<0.33	<0.33	--
Beryllium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	<0.039	<0.049	***0.066 J***	<0.049	<0.051	***0.058 J***	<0.055	<0.055	<0.1	<0.1	<0.1	<0.1	--
Cadmium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	***1.92 J***	<1.1	<1.1	<1.1	<1.1	<1.1	***4.3 J***	<1.1	<1.1	<1.1	<1.2	<1.2	--
Chromium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	9.83	***4.86***	***5.95***	***5.11***	***5.25***	***4.87***	***3.94***	***5.17***	***8.27***	***8.96***	***4.99***	***3.07***	***3.4***	--
Cobalt, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	1300	<3.2	<1.5	***2.44 J***	<1.5	<1.4	<1.4	<1.8	<1.8	***2.69 J***	<1.8	<1.8	<1.8	--
Copper, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	<0.27	<0.11	<0.11	<0.11	<0.21	***2.12***	<0.24	<0.24	***0.389 J***	<0.24	<0.26	<0.26	--
Lead, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	µg/L	722	***8.67***	***6.86***	***6***	***5.64***	***4.61 J***	***3.59 J***	***2.38 J***	***9.7***	***6.31***	***5.32***	***2.97 J***	***2.67 J***	--
Nickel, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	<1	<1	<1	<1	<0.96	<0.96	<0.96	<0.96	<1.4	<1.4	<1.4	<1.4	--
Selenium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	µg/L	100	<0.37	<0.37	<0.37	<0.37	<0.42	***3.54***	<0.49	<0.49	<0.5	<0.5	<0.5	<0.5	--
Silver, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	<0.26	<0.26	<0.26	<0.26	***1.24***	<0.26	<0.26	<0.26	<0.26	<0.26	<0.57	***0.784 J***	--
Thallium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium	µg/L	35	<0.82	<0.85	<0.85	<0.85	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	--
Vanadium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	2000	<10	<10	<10	<10	<10	<10	<10	<10	<6.4	<6.4	<9.7	<9.7	--
Zinc, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Appendix I Organics															
1,1,1,2-Tetrachloroethane	µg/L	70	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	--
1,1,1-Trichloroethane	µg/L	200	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	--
1,1,2,2-Tetrachloroethane	µg/L	0.3	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	--
1,1,2-Trichloroethane	µg/L	5	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	--
1,1-Dichloroethane	µg/L	140	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--
1,1-Dichloroethylene	µg/L	7	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	--
1,2,3-Trichloropropane	µg/L	0.0058	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	--
1,2-Dibromo-3-chloropropane	µg/L	0.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	--
1,2-Dibromoethane	µg/L	0.05	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	--
1,2-Dichlorobenzene	µg/L	600	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	--
1,2-Dichloroethane	µg/L	5	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	--
1,2-Dichloropropane	µg/L	5	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	--
1,4-Dichlorobenzene	µg/L	75	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	--
2-Butanone	µg/L	4000	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	***3.58 J***	<2.1	<2.1	<2.1	--
2-Hexanone	µg/L	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	--
4-Methyl-2-pentanone	µg/L	560	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	--
Acetone	µg/L	6300	<3.1	<3.1	<3.1	<3.1	***20.8***	<3.1	***26.9***	***6.96 J***	***201***	***15.9***	***131***	***4.63 J***	--
Acrylonitrile	µg/L	0.32	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	--
Benzene	µg/L	5	***0.847***	***1.83***	***1.44***	***0.934***	***0.661***	***0.986***	***0.545***	***0.711***	***0.564***	***1.29***	***0.481 J***	***0.856***	***0.596***
Bromochloromethane	µg/L	90	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	--
Bromodichloromethane	µg/L	80	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	--
Bromomethane	µg/L	10	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	--
Carbon disulfide	µg/L	700	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	--
Carbon Tetrachloride	µg/L	5	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	--
Chlorobenzene	µg/L	100	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	--
Chloroethane	µg/L	2800	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	--
Chloromethane	µg/L	NS	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	--
cis-1,2-Dichloroethylene	µg/L	70	***1.04***	***2.04***	***1.1***	***1.03***	***0.863 J***	***1.24***	***0.937 J***	***1.25***	***0.806 J***	***1.99***	***0.349 J***	***1.29***	***0.585 J***
cis-1,3-Dichloropropene	µg/L	NS	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	--
Dibromochloromethane	µg/L	80	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	--
Dibromomethane	µg/L	70	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	--
Dichloromethane	µg/L	5	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	--
Ethylbenzene	µg/L	700	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	--
Iodomethane	µg/L	NS	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	--
Styrene	µg/L	100	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	--
Tetrachloroethylene	µg/L	5	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	--
Toluene	µg/L	1000	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	***0.433 J***	<0.43	<0.43	<0.43	<0.43	--
Trans-1,2-dichloroethylene	µg/L	100	<0.27	***0.304 J***	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	--
trans-1,3-Dichloropropene	µg/L	NS	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	--
trans-1,4-Dichloro-2-butene	µg/L	1.8	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	--
Tribromomethane	µg/L	80	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	--
Trichloroethylene	µg/L	5	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	--
Trichlorofluoromethane	µg/L	2000	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	--
Trichloromethane	µg/L	80	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	--
Vinyl Acetate	µg/L	NS	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	--
Vinyl Chloride	µg/L	2	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	--
Xylenes	µg/L	10000	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	--

Detections at or above the RL are shown in bold italics on gray background.

Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.

NS = No standard

Black Hawk County Landfill
Appendix H Results
Monitoring Well OW-221B

Constituent Name	Units	CPC	9/25/20	12/17/21	3/21/22
Alcohols/Glycols by GC					
Acetonitrile	ug/L	NS	<494	<494	<494
Isobutanol	ug/L	2100	<323	<323	<323
Pesticides (GC)					
2,4,5-T	ug/L	70	<0.0271	<0.135	<0.5
2,4-D	ug/L	70	<0.0271	<0.135	<0.5
Silvex (2,4,5-TP)	ug/L	50	<0.0271	<0.146	<0.5
Inorganics					
Ammonia	ug/L	200	<5	<5.3	<5.3
Mercury	ug/L	2	<0.1	<0.15	<0.13
Sulfide	ug/L	NS	<5000	<251	<250
Tin	ug/L	4200	<2.4	<3	<3
PCBs (EPA Method 8082)					
PCB-1016	ug/L	NS	<0.263	<0.274	<0.185
PCB-1221	ug/L	NS	<0.263	<0.274	<0.185
PCB-1232	ug/L	NS	<0.263	<0.274	<0.185
PCB-1242	ug/L	NS	<0.208	<0.221	<0.12
PCB-1248	ug/L	NS	<0.208	<0.221	<0.12
PCB-1254	ug/L	NS	<0.208	<0.221	<0.12
PCB-1260	ug/L	NS	<0.208	<0.221	<0.12
Pesticides (EPA Method 8081A)					
4,4'-DDD	ug/L	0.73	<0.00196	<0.00984	<0.0193
4,4'-DDE	ug/L	0.52	<0.00126	<0.00905	<0.0259
4,4'-DDT	ug/L	0.52	<0.00413	<0.0126	<0.0467
Aldrin	ug/L	0.05	<0.00489	<0.0126	<0.0338
Alpha-BHC	ug/L	0.038	<0.00585	<0.0189	<0.0331
beta-BHC	ug/L	0.042	<0.00523	<0.0137	<0.0482
Chlordane	ug/L	2	<0.0489	<0.0126	<0.0338
delta-BHC	ug/L	1.1	0.00483 J	<0.0158	<0.0331
Dieldrin	ug/L	0.033	<0.00177	<0.0126	<0.0193
Endosulfan I	ug/L	42	<0.00213	<0.0126	<0.0331
Endosulfan II	ug/L	42	<0.00207	<0.00828	<0.0331
Endosulfan sulfate	ug/L	NS	<0.00171	<0.00984	<0.0326
Endrin	ug/L	2	<0.00207	<0.0185	<0.0483
Endrin aldehyde	ug/L	2.1	<0.00761	<0.0181	<0.0585
gamma-BHC (Lindane)	ug/L	0.2	<0.00207	<0.0147	<0.0356
Heptachlor	ug/L	0.4	<0.00283	<0.0126	<0.0359
Heptachlor epoxide	ug/L	0.2	<0.00621	<0.00918	<0.0193
Methoxychlor	ug/L	40	<0.00638	<0.0187	<0.0446
Toxaphene	ug/L	3	<0.0643	<0.0252	<0.75
Volatile Organic Compounds by GC/MS					
1,1,1,2-Tetrachloroethane	ug/L	2.1	<1.04	<1.04	<0.629
1,1,1-Trichloroethane	ug/L	NS	<1.49	<1.49	<1.07
1,1,2,2-Tetrachloroethane	ug/L	1	<1.15	<1.15	<0.72
1,1,2-Trichloroethane	ug/L	NS	<1.12	<1.12	<0.19
1,1-Dichloroethane	ug/L	NS	<0.376	<0.376	<0.23
1,1-Dichloroethene	ug/L	NS	<1.01	<1.01	<1.01
1,2,4,5-Tetramethylbenzene	ug/L	NS	<1.14	<1.14	<0.56
1,2,4-Trichlorobenzene	ug/L	700	<1.26	<1.26	<0.16
1,2,4-Trimethylbenzene	ug/L	16	<1.38	<1.38	<1.01
1,2-Dichlorobenzene	ug/L	60	<1.26	<1.26	<0.096
1,2-Dichloroethane	ug/L	0.38	<1.15	<1.15	<0.19
1,2-Dichloropropane	ug/L	1.6	<0.52	<0.52	<0.3
1,3,5-Trimethylbenzene	ug/L	0.45	<1.26	<1.26	<1.01
1,3-Dichlorobenzene	ug/L	NS	<1.26	<1.26	<0.0882
1,3-Dichloropropane	ug/L	0.26	<1.26	<1.26	<0.092
1,4-Acetylenedifluorene	ug/L	NS	<1.38	<1.38	<1.14
1,4-Dichlorobutadiene	ug/L	560	<1.49	<1.49	<0.744
1,4-Dioxane	ug/L	46	<1.26	<1.26	<0.648
2-Methylnaphthalene	ug/L	28	<1.49	<1.49	<0.606
2-Methylphenol (o-Cresol)	ug/L	35	<1.16	<1.16	<0.706
3-Methylpentane	ug/L	0.057	<0.989	<0.989	<2.66
4-Methylphenol	ug/L	3.5	<1.16	<1.16	<0.706
4-Nitrophenol	ug/L	NS	<3.04	<3.04	<2.95
4-Phenylmorpholine	ug/L	0.39	<2.07	<2.07	<1.63
4,7-Dihydroindene	ug/L	NS	<2.1	<2.1	<1.78
Acetonitrile	ug/L	70	<0.874	<0.874	**1.28 J**
Acrylonitrile	ug/L	NS	<2.07	<2.07	<0.372
Benzene	ug/L	NS	<1.15	<1.15	<1.14
Benzene-2-methylphenol	ug/L	NS	<2.07	<2.07	<0.92
Benzenethiol	ug/L	0.0083	<1.1	<1.1	<2.06
Benzo(a)anthracene	ug/L	NS	<2.18	<2.18	<0.814
Benzo(a)pyrene	ug/L	200	<1.08	<1.08	<0.577
Benzo(b)fluoranthene	ug/L	29	<1.38	<1.38	<0.907
Benzo(ghi)perylene	ug/L	NS	<1.49	<1.49	<0.892
Benzo(k)fluoranthene	ug/L	290	<1.49	<1.49	<0.907
Benzyl alcohol	ug/L	60	<2.07	<2.07	<0.84
Bis(2-chloroethoxy)methane	ug/L	NS	<1.06	<1.06	<1.26
Bis(2-chloroethyl) ether	ug/L	NS	<1.06	<1.06	<1.21
Bis(2-chloroisopropyl) ether	ug/L	200	<1.49	<1.49	<0.744
Bis(2-ethylhexyl) phthalate	ug/L	210	<1.49	<1.49	<0.857
Bromobenzene	ug/L	NS	<1.45	<1.45	<0.882
Bromochloromethane	ug/L	2100	<1.26	<1.26	<1.02
Bromodichloromethane	ug/L	0.24	<1.26	<1.26	<0.998
Bromoform	ug/L	9.2	<1.32	<1.32	<0.42
Bromomethane	ug/L	0.24	<1.38	<1.38	<0.7
Butanenitrile	ug/L	1.4	<1.38	<1.38	<0.519
Butanol	ug/L	1.4	<1.38	<1.38	<2.06
Butyl benzyl phthalate	ug/L	700	<1.26	<1.26	<1.11
Butyl-2-Hexenethoxy-pentoxane	ug/L	NS	<1.26	<1.26	<0.882
Butyl-2-Hexoxethyl Sorbyl	ug/L	0.16	<1.26	<1.26	<0.853
Butyl-2-Hexoxyacetoxy-3-ether	ug/L	160	<1.38	<1.38	<0.629
Butyl-2-ethyHexyl-Naphthalene	ug/L	6	<2.92	<2.92	<6.4
Butyl-Hexoxy-2-ethylether	ug/L	140	<1.72	<1.72	<1.48
Chlorobenzene	ug/L	NS	<1.32	<1.32	<1.19
Chloroform	ug/L	10	<1.26	<1.26	<1.03
Chloroform (cis or trans)	ug/L	NS	<1.49	<1.49	<4.65
Chloromethane (methyl chloride)	ug/L	0.123	<1.38	<1.38	<0.882
Chrysene	ug/L	NS	<1.38	<1.38	<0.86
Diethyl phthalate	ug/L	6600	<1.26	<1.26	<1.08
Dimethoate	ug/L	1.4	<1.15	<1.15	<0.19
Dimethyl phthalate	ug/L	NS	<2.07	<2.07	<1.16
Di-n-butyl phthalate	ug/L	700	<1.38	<1.38	<0.51
Di-n-octyl phthalate	ug/L	140	<1.45	<1.45	<0.19
Dinoseb	ug/L	7	<0.376	<0.376	<2.76
Diphenylamine	ug/L	180	<1.01	<1.01	<1.09
Disulfoton	ug/L	0.7	<0.726	<0.726	<2.76
Ethyl Methanesulfonate	ug/L	NS	<0.272	<0.272	<1.19
Fenthion	ug/L	NS	<0.726	<0.726	<2.83
Fluoranthene	ug/L	280	<1.08	<1.08	<1.06
Fluorene	ug/L	280	<1.08	<1.08	<0.577
Hexachlorobenzene	ug/L	1	<1.63	<1.63	<0.814
Hexachlorobutadiene	ug/L	1	<1.38	<1.38	<1.01
Hexachloroethane	ug/L	10	<1.01	<1.01	<0.51
Hexachlorophene	ug/L	1	<1.49	<1.49	<1.13
Hexachloropropene	ug/L	NS	<1.64	<1.64	<1.02
Indeno (1,2,3-cd) pyrene	ug/L	0.29	<2.3	<2.3	<1.88
Iodide	ug/L	NS	<0.887	<0.887	<2.87
Isophorone	ug/L	100	<1.14	<1.14	<1.09
Isosafrole	ug/L	NS	<0.376	<0.376	<2.87
Kepone	ug/L	NS	<2.07	<2.07	<1.16
Methacrylonitrile	ug/L	NS	<1.01	<1.01	<0.894
Methyl Methanesulfonate	ug/L	1.8	<0.376	<0.376	<2.83
Naphthalene	ug/L	10	<1.26	<1.26	<0.93
Nitrobenzene	ug/L	4	<1.63	<1.63	<0.814
Nitrosodibenzylamine	ug/L	1	<1.38	<1.38	<1.01
Nitrosodiethylamine	ug/L	0.8	<2.07	<2.07	<1.63
Nitrosodimethylamine	ug/L	1	<1.45	<1.45	<1.13
Nitrosodiphenylamine	ug/L	NS	<1.64	<1.64	<1.02
Nitrosodipropylamine	ug/L	0.1	<1.64	<1.64	<1.02
Nitrosomethylethylamine	ug/L	0.69	<1.45	<1.45	<1.7
Nitrosopiperidine	ug/L	NS	<0.376	<0.376	<2.83
Nitrosopyrrolidine	ug/L	0.003	<0.271	<0.271	<4.19
O,O,O-triethyl phosphorothioate	ug/L	NS	<0.726	<0.726	<2.87
O-Toluidine	ug/L	11	<0.77	<0.77	<0.27
p-Dimethylaminoazobenzene	ug/L	NS	<0.897	<0.897	<2.66
Pentachloroethane	ug/L	NS	<1.045	<1.045	<0.96
Pentachloronitrobenzene	ug/L	3	<0.862	<0.862	<2.67
Pentachlorophenol	ug/L	NS	<0.947	<0.947	<2.83
Phenacetin	ug/L	NS	<0.376	<0.376	<2.79
Phenanthrene	ug/L	1	<2.64	<2.64	<1.87
Phenol	ug/L	NS	<2.07	<2.07	<2.21
Phenolsulfonate	ug/L	210	<1.26	<1.26	<0.919
Phorate	ug/L	2000	<2.76	<2.76	<1.28
Pronamide	ug/L	5.4	<0.376	<0.376	<2.72
Pyrene	ug/L	210	<1.08	<1.08	<0.577
Safrole	ug/L	NS	<0.376	<0.376	<2.83
Thionazin	ug/L	NS	<0.814	<0.814	<2.69
Volatile Organic Compounds					
1,1-Dichloropropene	ug/L	NS	<0.42	<0.42	<0.43
1,2,3-Trichlorobenzene	ug/L	70	<0.76	<0.76	<0.76
1,3-Dichlorobenzene	ug/L	600	<0.3	<0.3	<0.3
1,3-Dichloropropane	ug/L	NS	<0.4	<0.4	<0.4
2,2-Dichloropropane	ug/L	NS	<0.60	<0.60	<0.60
Acrolein	ug/L	NS	<3.8	<3.8	<3.8
Allyl chloride	ug/L	NS	<0.7	<0.7	<0.7
Benzyl chloride	ug/L	NS	<0.32	<0.32	<0.32
Bis(chloromethoxy)ethane	ug/L	1100	<0.25	<0.25	<0.25
Ethyl Methacrylate	ug/L	NS	<0.68	<0.68	<0.68
Methacrylonitrile	ug/L	NS	<3.3	<3.3	<3.3
Methyl Methacrylate	ug/L	NS	<0.76	<0.76	<0.76
Naphthalene	ug/L	100	<3	<3	<3
Propionitrile	ug/L	NS	<3.4	<3.4	<3.4

Detections at or above the RL are shown in bold italics on gray background.
Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.
NS = No standard

Black Hawk County Landfill
Appendix I Results
Monitoring Well OW-222B

Parameter Name	Units	GPS	Mar-20	Aug-20	Sep-20	Dec-20	Mar-21	Oct-21	Apr-22	Oct-22	Apr-23	Sep-23	Apr-24	Oct-24
Appendix I Inorganics														
Total Suspended Solids	mg/L	NS	***2.63***	***1.5 J***	***1.63 J***	***2.63***	***5***	***1 J***	***9.67***	***1.5 J***	***18.3***	***1.63 J***	***12.7***	***18***
Turbidity, Field	NTU	NS	***0.17***	***2.39***	***0.99***	***1.14***	***0.88***	***3.41***	0	0	***2.87***	***1.83***	***12.3***	***5.59***
Turbidity, Lab	NTU	NS	***1.88***	--	--	--	--	--	--	--	--	--	--	--
Antimony	µg/L	6	<0.58	<0.51	<0.51	<0.51	<1.1	<1.1	<0.69	<0.69	<1	<1	<1	<1
Antimony, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	***0.885 J***	<0.88	<0.88	***0.906 J***	***1.28 J***	<0.75	***1.08 J***	***1.42 J***	***1.83 J***	***0.671 J***	***1.3 J***	***2.4***
Arsenic, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	***162***	***152***	***165***	***182***	***162***	***167***	***148***	***202***	***139***	***163***	***116***	***154***
Barium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.33	<0.33	<0.33	<0.33
Beryllium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	***0.075 J***	***0.076 J***	***0.133***	<0.049	***0.081 J***	***0.123***	***0.078 J***	***0.232***	<0.1	***0.305***	<0.1	<0.1
Cadmium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	***1.52 J***	***3.68 J***	***1.71 J***	***2.68 J***	***1.87 J***	<1.1	<1.1	<1.1	***1.7 J***	<1.1	***3.99 J***	***2.27 J***
Chromium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	9.83	***9.96***	***8.86***	***8.92***	***8.97***	***9.37***	***8.41***	***8.73***	***8.14***	***8.34***	***8.29***	***8.11***	***5.21***
Cobalt, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	1300	***6.17***	***3.87 J***	***2.66 J***	***4.17 J***	***4.29 J***	<1.4	<1.8	<1.8	***3.57 J***	***28.1***	***5.85***	***3.72 J***
Copper, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	<0.27	<0.11	***0.133 J***	<0.11	<0.21	***1.69***	<0.24	<0.24	<0.24	***0.454 J***	***0.273 J***	<0.26
Lead, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	µg/L	722	***43.7***	***38.6***	***31.6***	***26.9***	***26.6***	***17.1***	***15.1***	***14***	***12.4***	***14.7***	***15.9***	***3.66 J***
Nickel, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	<1	<1	<1	<1	<0.96	<0.96	<0.96	<0.96	<1.4	<1.4	<1.4	<1.4
Selenium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--
Silver	µg/L	100	<0.37	<0.37	<0.37	<0.37	<0.42	<0.42	<0.49	<0.49	<0.5	<0.5	<0.5	<0.5
Silver, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.57	***0.981 J***
Thallium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium	µg/L	35	<0.82	<0.85	<0.85	<0.85	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Vanadium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	2000	<10	<10	<10	<10	<10	<10	<10	<10	<6.4	***8.02 J***	<9.7	<9.7
Zinc, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--
Appendix I Organics														
1,1,1,2-Tetrachloroethane	µg/L	70	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38
1,1,1-Trichloroethane	µg/L	200	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19
1,1,2,2-Tetrachloroethane	µg/L	0.3	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47
1,1,2-Trichloroethane	µg/L	5	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45
1,1-Dichloroethane	µg/L	140	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22
1,1-Dichloroethylene	µg/L	7	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56
1,2,3-Trichloropropane	µg/L	0.0058	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59
1,2-Dibromo-3-chloropropane	µg/L	0.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2
1,2-Dibromoethane	µg/L	0.05	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34
1,2-Dichlorobenzene	µg/L	600	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37
1,2-Dichloroethane	µg/L	5	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39
1,2-Dichloropropane	µg/L	5	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27
1,4-Dichlorobenzene	µg/L	75	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23
2-Butanone	µg/L	4000	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1
2-Hexanone	µg/L	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
4-Methyl-2-pentanone	µg/L	560	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1
Acetone	µg/L	6300	<3.1	***3.4 J***	<3.1	<3.1	***3.45 J***	<3.1	<3.1	<3.1	<3.1	<3.1	***66.7***	***3.73 J***
Acrylonitrile	µg/L	0.32	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2
Benzene	µg/L	5	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22
Bromochloromethane	µg/L	90	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54
Bromodichloromethane	µg/L	80	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39
Bromomethane	µg/L	10	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Carbon disulfide	µg/L	700	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	***1.76***	<0.45	<0.45
Carbon Tetrachloride	µg/L	5	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65
Chlorobenzene	µg/L	100	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Chloroethane	µg/L	2800	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79
Chloromethane	µg/L	NS	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61
cis-1,2-Dichloroethylene	µg/L	70	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21
cis-1,3-Dichloropropene	µg/L	NS	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Dibromochloromethane	µg/L	80	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75
Dibromomethane	µg/L	70	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Dichloromethane	µg/L	5	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7
Ethylbenzene	µg/L	700	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31
Iodomethane	µg/L	NS	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7
Styrene	µg/L	100	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37
Tetrachloroethylene	µg/L	5	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48
Toluene	µg/L	1000	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43
Trans-1,2-dichloroethylene	µg/L	100	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27
trans-1,3-Dichloropropene	µg/L	NS	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56
trans-1,4-Dichloro-2-butene	µg/L	1.8	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Tribromomethane	µg/L	80	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78
Trichloroethylene	µg/L	5	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43
Trichlorofluoromethane	µg/L	2000	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38
Trichloromethane	µg/L	80	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3
Vinyl Acetate	µg/L	NS	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Vinyl Chloride	µg/L	2	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18
Xylenes	µg/L	10000	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Detections at or above the RL are shown in bold italics on gray background.

Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.

NS = No standard

Black Hawk County Landfill
Appendix H Results
Monitoring Well OW-222B

Constituent Name	Code	CPG	9/22/20	12/17/21	5/23/22
Alcohols/Glycols by GC					
Acetonitrile	ug/L	NS	<404	<404	<404
Isobutanol	ug/L	2100	<323	<323	<323
Pesticides (GC)					
2,4,5-T	ug/L	70	<0.0315	<0.0315	<0.07
2,4-D	ug/L	70	<0.0315	<0.0315	<0.07
Silvex (2,4,5-TP)	ug/L	50	<0.0157	<0.148	<0.07
Inorganics					
N-nitrite	ug/L	200	<5	<5.5	<5.5
Mercury	ug/L	2	<0.5	<0.25	<0.13
Sulfide	ug/L	NS	<50000	<251	<250
Tin	ug/L	4200	<2.4	<3	<3
PCBs (EPA Method 8082)					
PCB-1016	ug/L	NS	<0.286	<0.289	<0.193
PCB-1221	ug/L	NS	<0.306	<0.309	<0.193
PCB-1232	ug/L	NS	<0.306	<0.309	<0.193
PCB-1242	ug/L	NS	<0.247	<0.233	<0.125
PCB-1248	ug/L	NS	<0.247	<0.233	<0.125
PCB-1254	ug/L	NS	<0.247	<0.233	<0.125
PCB-1260	ug/L	NS	<0.247	<0.233	<0.125
Pesticides (EPA Method 8081A)					
4,4'-DDD	ug/L	0.73	<0.00313	<0.00935	<0.0107
4,4'-DDE	ug/L	0.52	<0.00247	<0.00948	<0.0109
4,4'-DDT	ug/L	0.51	<0.00447	<0.0116	<0.0197
Aldrin	ug/L	0.05	<0.00529	<0.0133	<0.0104
Alpha-BHC	ug/L	0.038	<0.002	<0.0111	<0.0111
beta-BHC	ug/L	0.042	<0.00543	<0.0144	<0.042
delta-BHC	ug/L	1.1	<0.00247	<0.0111	<0.0111
Alpha-BHC	ug/L	1.1	*0.00312 J*	<0.0111	<0.0107
Aldrin	ug/L	0.013	<0.00435	<0.0133	<0.0104
Endosulfan I	ug/L	42	<0.00235	<0.0122	<0.0371
Endosulfan II	ug/L	42	<0.00224	<0.009	<0.033
Endosulfan sulfate	ug/L	NS	<0.00294	<0.00935	<0.0101
Endrin	ug/L	2	<0.00224	<0.0111	<0.0378
Endrin aldehyde	ug/L	2.1	<0.00824	<0.0107	<0.033
gamma-BHC (Lindane)	ug/L	0.2	*0.00407 J*	<0.0126	<0.0109
Heptachlor	ug/L	0.4	*0.00317 J*	<0.0133	<0.0375
Heptachlor epoxide	ug/L	0.2	<0.00718	<0.0101	<0.0113
Methoxychlor	ug/L	40	<0.0263	<0.0136	<0.0404
Toxaphene	ug/L	3	<0.0642	<0.454	<0.764
Semivolatile Organics by GC/MS					
1,2,4,5-Tetrachlorobenzene	ug/L	2.1	<1.32	<1.08	<1.043
1,2,4-Trimethylbenzene	ug/L	NS	<1.57	<1.53	<1.4
1,3-Dinitrobenzene	ug/L	3	<1.2	<1.18	<1.03
1,4-Naphthoquinone	ug/L	NS	<1.18	<1.15	<1.76
1,4-Phenylenediamine	ug/L	NS	<0.402	<0.548	<1.58
1-Naphthylamine	ug/L	NS	<1.06	<1.04	<1.6
2,3,4,6-Tetrachlorophenol	ug/L	NS	<1.19	<1.16	<1.62
2,4,5-Trichlorophenol	ug/L	700	<1.33	<1.29	<1.14
2,4,6-Trichlorophenol	ug/L	16	<1.45	<1.41	<1.07
2,4-Dichlorophenol	ug/L	60	<1.33	<1.29	<1.001
2,4-Dimethylphenol	ug/L	140	<1.2	<1.18	<1.03
2,4-Dinitrophenol	ug/L	14	<3.87	<4.75	<3.13
2,4-Dinitrotoluene	ug/L	0.49	<1.33	<1.29	<4.01
2,6-Dichlorophenol	ug/L	NS	<1.33	<1.29	<0.735
2,6-Dinitrotoluene	ug/L	0.36	<1.33	<1.29	<1.052
2-Acetylaminofluorene	ug/L	NS	<1.45	<1.41	<2.01
2-Chloronaphthalene	ug/L	560	<1.57	<1.53	<0.985
2-Chlorophenol	ug/L	40	<1.33	<1.29	<0.965
2-Methylnaphthalene	ug/L	28	<1.57	<1.53	<0.615
2-Methylphenol (o-Cresol)	ug/L	35	<1.3	<1.18	<0.67
2-Naphthylamine	ug/L	0.057	<1.04	<1.01	<1.19
2-Nitroaniline	ug/L	NS	<1.33	<1.29	<0.735
2-Nitrophenol	ug/L	NS	<1.33	<1.08	<1.08
3,3'-Dichlorobenzidine	ug/L	0.39	<2.17	<2.12	<1.46
3,3'-Dimethylbenzidine	ug/L	NS	<2.41	<2.35	<3.06
3-Methylphenol	ug/L	70	<0.916	<0.894	<0.729
3-Methylcholanthrene	ug/L	NS	<1.93	<1.94	<0.537
3-Nitroaniline	ug/L	NS	<1.2	<1.18	<2.01
4,6-Dinitro-2-methylphenol	ug/L	NS	<1.93	<1.94	<2.38
4-Aminobiphenyl	ug/L	0.0083	<1.06	<1.12	<2.29
4-Bromophenyl phenyl ether	ug/L	NS	<1.29	<1.24	<0.729
4-Chloro-3-methylphenol	ug/L	700	<1.14	<1.12	<0.875
4-Nitroaniline	ug/L	28	<1.45	<1.41	<0.948
4-Chlorophenyl phenyl ether	ug/L	NS	<1.57	<1.53	<0.719
4-Nitrophenol	ug/L	NS	<1.33	<1.29	<0.735
4-Nitroquinoline-1-oxide	ug/L	60	<3.03	<2.94	<7.82
4-Nitrosomorpholine	ug/L	NS	<1.73	<1.06	<1.02
5,5-Dimethyl-2,4-oxazolidinedione	ug/L	NS	<1.13	<1.09	<1.98
Acenaphthene	ug/L	420	<1.57	<1.53	<0.985
Acenaphthylene	ug/L	210	<1.57	<1.53	<0.75
Acetophenone	ug/L	NS	<1.61	<1.53	<0.719
Aniline	ug/L	2100	<1.33	<1.29	<0.965
Atrazine (2-amino-ene)	ug/L	0.24	<1.33	<1.29	<0.891
Atrazine (4-ia-ene)	ug/L	0.2	<1.85	<1.76	<0.81
Atrazine (6)-fluoranthene	ug/L	0.24	<1.45	<1.41	<1.3
Benzo (a) anthracene	ug/L	0.13	<1.57	<1.53	<0.615
Benzo (b) fluoranthene	ug/L	1.4	<1.45	<1.41	<2.29
Benzo [ah-ihe]	ug/L	700	<1.33	<1.29	<1.01
Bis(2-chloroethoxy)methane	ug/L	NS	<1.33	<1.29	<0.782
Bis(2-chloroethyl) Ether	ug/L	0.16	<1.33	<1.29	<0.958
Bis(2-chloroisopropyl) ether	ug/L	300	<1.45	<1.41	<0.563
Bis(2-ethylhexyl)phthalate	ug/L	6	<3.13	<3.06	<3.73
Butyl benzyl phthalate	ug/L	140	<1.01	<1.76	<1.02
Chlorobenzilate	ug/L	NS	<3.49	<3.61	<3.16
Chrysene	ug/L	13	<1.33	<1.29	<0.906
Diallate (cis or trans)	ug/L	NS	<1.57	<1.53	<4.17
Diallate (cis or trans)-ene	ug/L	0.125	<1.57	<1.53	<0.719
Dibenzo(a,h)anthracene	ug/L	1	<1.45	<1.41	<0.735
Diethyl phthalate	ug/L	6400	<1.33	<1.29	<1.07
Dimethoate	ug/L	1.4	<1.2	<1.18	<3.75
Dimethyl phthalate	ug/L	NS	<1.01	<1.04	<1.69
Di-n-butyl phthalate	ug/L	700	<1.45	<1.41	<2.01
Di-n-octyl phthalate	ug/L	140	<1.61	<1.53	<1.29
Dinoseb	ug/L	7	<0.402	<0.548	<2.6
Diphenylamine	ug/L	100	<1.06	<1.04	<3.25
Disulfoton	ug/L	0.7	<0.773	<0.713	<2.5
Ethyl Methanesulfonate	ug/L	NS	<0.402	<0.548	<1.58
Famphur	ug/L	NS	<0.773	<0.713	<4.96
Fluoranthene	ug/L	280	<1.33	<1.31	<4.17
Fluorene	ug/L	280	<1.57	<1.53	<0.719
Hexachlorobenzene	ug/L	1	<1.45	<1.41	<0.735
Hexachlorobutadiene	ug/L	3	<1.45	<1.41	<0.806
Hexachlorocyclopentadiene	ug/L	50	<2.53	<2.47	<3.31
Hexachloroethane	ug/L	3	<1.57	<1.53	<1.01
Hexachloropropene	ug/L	NS	<1.93	<1.88	<2.71
Indeno (1,2,3-cd) pyrene	ug/L	0.18	<2.41	<2.35	<1.58
Isodrin	ug/L	NS	<0.899	<0.835	<3.9
Isophorone	ug/L	100	<1.33	<1.3x	<0.969
Isosafrole	ug/L	NS	<0.885	<0.548	<2.4
Kepone	ug/L	NS	<2.17	<2.12	<1.66
Methapyrilene	ug/L	NS	<1.93	<1.88	<3.02
Methyl Methanesulfonate	ug/L	1.8	<0.402	<0.548	<2.82
Naphthalene	ug/L	14	<1.33	<1.29	<0.833
N-Nitrosodibutylamine	ug/L	NS	<0.885	<0.548	<2.6
N-Nitrosodiethylamine	ug/L	3	<1.45	<1.41	<0.806
N-Nitrosodimethylamine	ug/L	0.7	<2.53	<2.47	<3.31
N-Nitrosodiphenylamine	ug/L	3	<1.57	<1.53	<1.01
N-Nitrosodi-n-propylamine	ug/L	0.1	<0.885	<0.548	<2.6
N-Nitrosomethylethylamine	ug/L	NS	<1.2	<1.18	<0.958
N-Nitrosomorpholine	ug/L	16	<1.14	<1.12	<0.785
N-Nitrosopiperidine	ug/L	0.088	<1.57	<1.53	<3.3
N-Nitrosopyrrolidine	ug/L	NS	<0.885	<0.548	<2.81
N-Nitrosopyridine	ug/L	0.003	<0.402	<0.548	<3.75
O,O,O-Triethyl phosphorothioate	ug/L	NS	<0.885	<0.548	<2.82
O-Toluidine	ug/L	11	<0.885	<0.788	<2.82
p-Dimethylaminoazobenzene	ug/L	NS	<1.61	<1.53	<1.29
Parathion ethyl	ug/L	NS	<1.93	<1.88	<2.29
Parathion methyl	ug/L	5	<0.914	<0.682	<2.6
Pentachlorobenzene	ug/L	NS	<2.009	<0.658	<2.82
Pentachloronitrobenzene	ug/L	NS	<0.402	<0.548	<3.04
Pentachlorophenol	ug/L	1	<2.77	<2.71	<.08
Phenacetin	ug/L	NS	<2.17	<2.12	<1.06
Phenanthrene	ug/L	210	<1.33	<1.29	<0.813
Phenol	ug/L	2000	<2.89	<2.82	<1.19
Pronamide	ug/L	5.4	<0.885	<0.548	<2.82
Pyrene	ug/L	21	<0.402	<0.548	<2.81
Safrole	ug/L	NS	<0.885	<0.548	<2.82
Thionazin	ug/L	NS	<0.914	<0.894	<2.82
Volatile Organic Compounds					
1,1,1,2-Tetrachloroethane	ug/L	NS	<0.42	<0.43	<0.43
1,1,1-Trichloroethane	ug/L	70	<0.76	<0.76	<0.76
1,1,2-Trichloroethane	ug/L	600	<0.3	<0.3	<0.3
1,1-Dichloropropene	ug/L	NS	<0.4	<0.4	<0.4
1,2,3-Trichloropropane	ug/L	NS	<0.60	<0.60	<0.60
1,2,4-TMB	ug/L	NS	<3.8	<3.8	<3.8
1,2-Dibromo-3-chloropropane	ug/L	NS	<0.7	<0.7	<0.7
1,2-Dibromoethane	ug/L	0.05	<0.34	<0.34	<0.34
1,2-Dichlorobenzene	ug/L	1000	<0.26	<0.26	<0.26
1,2-Dichloroethane	ug/L	NS	<0.60	<0.60	<0.60
1,2-Dichloropropane	ug/L	5	<0.3	<0.3	<0.3
1,3,5-TMB	ug/L	NS	<0.76	<0.76	<0.76
1,3-Dichlorobenzene	ug/L	100	<3	<3	<3
1,3-Dichloropropane	ug/L	NS	<3.4	<3.4	<3.4

Detections at or above the RL are shown in bold italics on gray background.
Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.
NS = No standard

Black Hawk County Landfill
Appendix I Results
Monitoring Well OW-223B

Parameter Name	Units	GPS	Mar-20	Aug-20	Sep-20	Dec-20	Mar-21	Nov-21	Apr-22	Oct-22	Mar-23	Sep-23	Apr-24	Oct-24	Jan-25
Appendix I Inorganics															
Total Suspended Solids	mg/L	NS	***1.13 J***	<0.638	<0.638	<0.638	<0.638	***18.8***	<1.7	***1.38 J***	***1.88***	<0.638	<3.7	<1.39	<3.7
Turbidity, Field	NTU	NS	***0.79***	***21.06***	***0.6***	***0.83***	***0.18***	0	***0.95***	0	***5.71***	***1.63***	***6.04***	***0.99***	***0.67***
Turbidity, Lab	NTU	NS	***1.18***	--	--	--	--	--	--	--	--	--	--	--	--
Antimony	µg/L	6	<0.58	<0.51	<0.51	<0.51	<1.1	<1.1	<0.69	<0.69	<0.69	<1	<1	<1	--
Antimony, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	<0.88	<0.88	<0.88	<0.88	<0.75	<0.75	<0.75	<0.75	<0.75	<0.53	<0.53	<0.53	--
Arsenic, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	***181***	***166***	***146***	***163***	***105***	***129***	***90.5***	***78.7***	***85.4***	***86.3***	***64.3***	***88***	--
Barium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.33	<0.33	<0.33	--
Beryllium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	<0.039	<0.049	<0.049	<0.049	<0.051	***0.051 J***	<0.055	<0.055	<0.055	<0.1	<0.1	<0.1	--
Cadmium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	***8.46***	<1.1	<1.1	***2.36 J***	***2.7 J***	<1.1	***5.25***	<1.1	***3.38 J***	***1.18 J***	***4.48 J***	***3.76 J***	--
Chromium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	9.83	<0.091	<0.091	<0.091	<0.091	<0.091	***0.214 J***	<0.19	***0.376 J***	***0.284 J***	<0.17	***0.191 J***	<0.17	--
Cobalt, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	1300	***5.98***	***5.84***	***5.26***	***7.75***	***5.27***	***3.12 J***	***4.61 J***	<1.8	***5.44***	***3.78 J***	***5.94***	***2.54 J***	--
Copper, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	<0.27	<0.11	<0.11	<0.11	<0.21	<0.21	<0.24	<0.24	<0.24	<0.24	<0.26	<0.26	--
Lead, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	µg/L	722	***7.61***	***5.99***	***8.51***	***7.94***	***7.15***	***3.13 J***	***3.09 J***	***2.5 J***	***4.01 J***	***3.95 J***	***6.21***	<2.1	--
Nickel, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	<1	<1	<1	<1	<0.96	<0.96	<0.96	<0.96	<0.96	<1.4	<1.4	<1.4	--
Selenium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	µg/L	100	<0.37	<0.37	<0.37	<0.37	<0.42	<0.42	<0.49	<0.49	<0.49	<0.5	<0.5	<0.5	--
Silver, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.57	***1.42***	<0.57
Thallium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium	µg/L	35	<0.82	<0.85	<0.85	<0.85	<1.1	***1.17 J***	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	--
Vanadium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	2000	<10	<10	<10	<10	<10	***207***	<10	<10	<10	***6.51 J***	<9.7	<9.7	--
Zinc, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Appendix I Organics															
1,1,1,2-Tetrachloroethane	µg/L	70	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	--
1,1,1-Trichloroethane	µg/L	200	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	--
1,1,2,2-Tetrachloroethane	µg/L	0.3	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	--
1,1,2-Trichloroethane	µg/L	5	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	--
1,1-Dichloroethane	µg/L	140	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--
1,1-Dichloroethylene	µg/L	7	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	--
1,2,3-Trichloropropane	µg/L	0.0058	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	--
1,2-Dibromo-3-chloropropane	µg/L	0.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	--
1,2-Dibromoethane	µg/L	0.05	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	--
1,2-Dichlorobenzene	µg/L	600	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	--
1,2-Dichloroethane	µg/L	5	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	--
1,2-Dichloropropane	µg/L	5	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	--
1,4-Dichlorobenzene	µg/L	75	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	--
2-Butanone	µg/L	4000	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	--
2-Hexanone	µg/L	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	--
4-Methyl-2-pentanone	µg/L	560	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	--
Acetone	µg/L	6300	<3.1	***13.9***	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	***191***	<3.1	--
Acrylonitrile	µg/L	0.32	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	--
Benzene	µg/L	5	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--
Bromochloromethane	µg/L	90	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	--
Bromodichloromethane	µg/L	80	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	--
Bromomethane	µg/L	10	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	--
Carbon disulfide	µg/L	700	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	--
Carbon Tetrachloride	µg/L	5	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	--
Chlorobenzene	µg/L	100	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	--
Chloroethane	µg/L	2800	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	--
Chloromethane	µg/L	NS	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	--
cis-1,2-Dichloroethylene	µg/L	70	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	--
cis-1,3-Dichloropropene	µg/L	NS	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	--
Dibromochloromethane	µg/L	80	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	--
Dibromomethane	µg/L	70	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	--
Dichloromethane	µg/L	5	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	--
Ethylbenzene	µg/L	700	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	--
Iodomethane	µg/L	NS	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	--
Styrene	µg/L	100	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	--
Tetrachloroethylene	µg/L	5	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	--
Toluene	µg/L	1000	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	***0.928 J***	<0.43	--
Trans-1,2-dichloroethylene	µg/L	100	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	--
trans-1,3-Dichloropropene	µg/L	NS	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	--
trans-1,4-Dichloro-2-butene	µg/L	1.8	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	--
Tribromomethane	µg/L	80	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	--
Trichloroethylene	µg/L	5	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	--
Trichlorofluoromethane	µg/L	2000	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	--
Trichloromethane	µg/L	80	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	--
Vinyl Acetate	µg/L	NS	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	--
Vinyl Chloride	µg/L	2	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	--
Xylenes	µg/L	10000	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	--

Detections at or above the RL are shown in bold italics on gray background.

Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.

NS = No standard

Black Hawk County Landfill
Appendix H Results
Monitoring Well OW-223B

Constituent Name	Code	CPL	9/22/20	3/16/21	7/21/21
Alcohols/Glycols by GC					
Acetonitrile	ug/L	NS	<494	<494	<494
Isobutanol	ug/L	2100	<333	<333	<333
Pesticides (GC)					
Lin-5	ug/L	50	<0.0287	<0.142	<0.5
Lin-6	ug/L	50	<0.0287	<0.142	<0.5
Meso. (Lin)-TPN	ug/L	50	<0.0287	<0.142	<0.5
Inorganics					
N (NH4)	ug/L	200	<5	<5.5	<3.5
Mercury	ug/L	2	<0.5	<0.25	<0.11
Sulfide	ug/L	NS	<50000	<2500	<2500
TN	ug/L	4200	<2.4	<3	<3
PCBs (EPA Method 8082)					
PCB-1016	ug/L	NS	<0.426	--	<0.193
PCB-1221	ug/L	NS	<0.426	--	<0.193
PCB-1232	ug/L	NS	<0.426	--	<0.193
PCB-1242	ug/L	NS	<0.342	--	<0.125
PCB-1248	ug/L	NS	<0.342	--	<0.125
PCB-1254	ug/L	NS	<0.394	--	<0.125
PCB-1260	ug/L	NS	<0.344	--	<0.125
Pesticides (EPA Method 8081A)					
4,4'-DDD	ug/L	0.73	**0.00622 J**	<0.0105	<0.0107
4,4'-DDE	ug/L	0.52	<0.005841	<0.0106	<0.0107
4,4'-DDT	ug/L	0.51	<0.00623	<0.011	<0.0107
Aldrin	ug/L	0.05	<0.007.38	<0.011	<0.0364
Alpha-BHC	ug/L	0.038	<0.00676	<0.0126	<0.033
beta-BHC	ug/L	0.042	<0.00757	<0.0162	<0.042
delta-BHC	ug/L	1.1	<0.00757	<0.0162	<0.042
Alpha-BHC	ug/L	1.1	<0.0017	<0.0148	<0.0107
Aldrin-1	ug/L	0.033	<0.00109	<0.019	<0.0107
Endosulfan I	ug/L	42	<0.00128	<0.0126	<0.0075
Endosulfan II	ug/L	42	<0.00211	<0.0169	<0.033
Endosulfan sulfate	ug/L	NS	<0.0161	**0.0164 J**	<0.0161
Endrin	ug/L	2	**0.0106 J**	<0.0125	<0.0295
Endrin aldehyde	ug/L	2.1	<0.0127	<0.012	<0.033
gamma-BHC (Lindane)	ug/L	0.2	<0.000315	<0.0175	<0.0409
Heptachlor	ug/L	0.4	<0.00426	<0.012	<0.0375
Heptachlor epoxide	ug/L	0.2	<0.01	<0.0114	<0.033
Methoxychlor	ug/L	40	<0.00568	<0.0175	<0.0486
Toxaphene	ug/L	3	<0.0915	<0.113	<0.784
Semivolatile Organics by GC/MS					
1,2,4,5-Tetrachlorobenzene	ug/L	2.1	<1.92	<1.93	<1.61
1,2,4-Trimethylbenzene	ug/L	NS	<1.95	<1.57	<2.16
1,3-Dinitrobenzene	ug/L	1	<1.22	<1.2	<3.06
1,4-Naphthoquinone	ug/L	NS	<1.2	<1.18	<4
1,4-Phenylenediamine	ug/L	NS	<10.6	<10.02	<21.1
1-Naphthylamine	ug/L	NS	<1.07	<1.06	<2.78
2,3,4,6-Tetrachlorophenol	ug/L	NS	<1.23	<1.19	<5.89
2,4,5-Trichlorophenol	ug/L	700	<1.34	<1.33	<5.49
2,4,6-Trichlorophenol	ug/L	16	<1.46	<1.45	<6.38
2,4-Dichlorophenol	ug/L	60	<1.34	<1.33	<6.984
2,4-Dimethylphenol	ug/L	140	<1.46	<1.45	<6.984
2,4-Dinitrophenol	ug/L	14	<6.95	<6.87	<14.4
2,4-Dinitrotoluene	ug/L	0.49	<1.34	<1.33	<7.11
2,6-Dichlorophenol	ug/L	NS	<1.34	<1.33	<6.767
2,6-Dinitrotoluene	ug/L	0.36	<1.34	<1.33	<6.378
2-Acetylaminofluorene	ug/L	NS	<1.46	<1.45	<3
2-Chloronaphthalene	ug/L	560	<1.95	<1.57	<6.711
2-Chlorophenol	ug/L	40	<1.34	<1.33	<6.6
2-Methylnaphthalene	ug/L	28	<1.95	<1.57	<0.666
2-Methylphenol (o-Cresol)	ug/L	35	<1.22	<1.2	<6.723
2-Naphthylamine	ug/L	0.057	<1.85	<1.84	<2.35
2-Nitroaniline	ug/L	60	<1.46	<1.45	<6.984
2-Nitrophenol	ug/L	NS	<1.95	<1.93	<7.58
3,3'-Dichlorobenzidine	ug/L	0.39	<2.2	<2.17	<1.06
3,3'-Dimethylbenzidine	ug/L	NS	<2.68	<2.41	<1.87
3-Methylphenol	ug/L	70	**2.9 J**	<0.916	<6.778
3-Methylcholanthrene	ug/L	NS	<3.05	<2.93	<5.356
3-Nitroaniline	ug/L	NS	<1.22	<1.2	<3
4,6-Dinitro-2-methylphenol	ug/L	NS	<3.05	<2.93	<7.47
4-Aminobiphenyl	ug/L	0.0083	<1.17	<1.16	<2.48
4-Bromophenyl phenyl ether	ug/L	NS	<2.32	<2.29	<6.778
4-Chloro-3-methylphenol	ug/L	700	<1.34	<1.34	<0.683
4-Nitroaniline	ug/L	20	<1.46	<1.45	<6.989
4-Chlorophenyl phenyl ether	ug/L	NS	<1.08	<1.07	<6.767
4-Nitrophenol	ug/L	NS	<3.05	<2.93	<6.778
4-Nitrophenol	ug/L	60	<3.05	<2.93	<6.48
4-Nitro-o-toluidine	ug/L	NS	<1.78	<1.73	<3.15
5,5-Dimethyl Hexan-2,4-anthracene	ug/L	NS	<1.12	<1.13	<2.15
Acenaphthene	ug/L	420	<1.95	<1.57	<6.711
Acenaphthylene	ug/L	210	<1.08	<1.07	<0.6
Acetophenone	ug/L	NS	<3.66	<3.61	<6.767
Anthracene	ug/L	2100	<1.34	<1.33	<6.967
Atrazine (2-anthracene)	ug/L	0.24	<1.34	<1.33	<6.984
Atrazine (2) pyrene	ug/L	0.2	<1.85	<1.85	<3
Atrazine (2) fluoranthene	ug/L	0.24	<1.46	<1.45	<5.98
Atrazine (2) Naphthalene	ug/L	0.2	<1.46	<1.45	<3
Atrazine (2) Naphthalene	ug/L	1.4	<1.46	<1.45	<2.48
Atrazine Lab chol	ug/L	700	<1.34	<1.33	<1.48
Bis(2-chloroethoxy)methane	ug/L	NS	<1.34	<1.33	<0.868
Bis(2-chloroethyl) Ether	ug/L	0.16	<1.34	<1.33	<0.911
Bis(2-chloroisopropyl) ether	ug/L	200	<1.46	<1.45	<0.6
Bis(2-ethylhexyl)phthalate	ug/L	6	<3.17	<3.13	<6.31
Butyl benzyl phthalate	ug/L	140	<1.83	<1.81	<6
Chlorobenzilate	ug/L	NS	<3.54	<3.49	<4
Chrysene	ug/L	21	<1.34	<1.33	<0.967
Diallate (cis or trans)	ug/L	NS	<1.59	<1.57	<4.48
Diallate (cis or trans) isomer	ug/L	0.125	<1.59	<1.57	<4.48
Dibenzofuran	ug/L	2	<1.46	<1.45	<0.922
Diethyl phthalate	ug/L	6600	<1.34	<1.33	<1.89
Dimethoate	ug/L	1.4	<1.22	<1.2	<3
Dimethyl phthalate	ug/L	NS	<1.05	<1.01	<1.11
Di-n-butyl phthalate	ug/L	700	<1.46	<1.45	<5.22
Di-n-octyl phthalate	ug/L	140	<1.66	<1.61	<7.78
Dinoseb	ug/L	7	<0.61	<0.602	<2.97
Diphenylamine	ug/L	180	<1.07	<1.06	<6.67
Disulfoton	ug/L	0.7	<0.78	<0.773	<2.97
Ethyl Methanesulfonate	ug/L	NS	<0.61	<0.602	<4
Famphur	ug/L	NS	<0.78	<0.773	<4.42
Fluoranthene	ug/L	280	<1.22	<1.22	<1.89
Fluorene	ug/L	280	<1.34	<1.33	<0.889
Hexachlorobenzene	ug/L	1	<1.71	<1.69	<6.778
Hexachlorobutadiene	ug/L	5	<1.46	<1.45	<0.956
Hexachlorocyclopentadiene	ug/L	50	<3.66	<3.53	<5.97
Hexachloroethane	ug/L	5	<1.95	<1.57	<1.08
Hexachloropropene	ug/L	NA	<1.95	<1.93	<2.89
Indeno (1,2,3-cd) pyrene	ug/L	0.18	<2.44	<2.41	<4.67
Isodrin	ug/L	NA	<0.707	<0.699	<5.22
Isophorone	ug/L	100	<1.21	<1.19	<1.81
Isosafrole	ug/L	NS	<0.61	<0.602	<2.56
Kepone	ug/L	NS	<2.2	<2.17	<1.11
Methapyrilene	ug/L	NS	<2.44	<2.41	<4.67
Methyl Methanesulfonate	ug/L	1.8	<0.61	<0.602	<3.97
Naphthalene	ug/L	14	<1.34	<1.33	<0.889
N-Nitrosodiethylamine	ug/L	NS	<0.61	<0.602	<3.78
N-Nitrosodiethylamine	ug/L	0.0054	<1.11	<1.1	<0.8
N-Nitrosodi-n-butylamine	ug/L	0.032	<0.61	<0.602	<1.33
N-Nitrosodi-n-propylamine	ug/L	NS	<1.22	<1.2	<1.81
N-Nitrosodiphenylamine	ug/L	36	<1.16	<1.14	<0.851
N-Nitrosomethylethylamine	ug/L	0.008	<1.05	<1.01	<1.48
N-Nitrosopiperidine	ug/L	NS	<0.61	<0.602	<3
N-Nitrosopyrrolidine	ug/L	0.0021	<0.61	<0.602	<4
O,O,O-Triethyl phosphorothioate	ug/L	NS	<0.61	<0.602	<3.97
P-Toluidine	ug/L	11	<0.917	<0.887	<3.23
Pentachlorobenzene	ug/L	NS	<0.917	<0.903	<1.48
Pentachloroethane	ug/L	NS	<1.95	<1.93	<2.48
Pentachloronitrobenzene	ug/L	3	<0.915	<0.904	<2.26
Pronamide	ug/L	NS	<0.707	<0.699	<2.11
Pyridine	ug/L	NS	<0.61	<0.602	<1.48
Safrole	ug/L	5	<2.2	<2.17	<3.7
Thionazin	ug/L	NS	<2.2	<2.17	<2.11
Thiophenol	ug/L	210	<1.34	<1.33	<0.878
Phenol	ug/L	2000	<2.93	<2.89	<1.22
Pyrene	ug/L	1.4	<0.61	<0.602	<1.56
Fenamiphos	ug/L	3	<0.61	<0.602	<3
Fenthion	ug/L	0.5	<0.61	<0.602	<3.6
Methyl	ug/L	NS	<0.61	<0.602	<2.11
Terpenoids	ug/L	NS	<0.707	<0.916	<3.89
Volatile Organic Compounds					
1,1-Dichloropropene	ug/L	NS	<0.42	<0.42	<0.42
1,2,4-Trichlorobenzene	ug/L	70	<0.75	<0.75	<0.75
1,2-Dichlorobenzene	ug/L	600	<0.3	<0.3	<0.3
1,2-Dichloropropane	ug/L	NS	<0.8	<0.8	<0.8
1,2-Dichloropropane	ug/L	NS	<0.69	<0.69	<0.69
Acrolein	ug/L	NS	<3.8	<3.8	<3.8
Allyl chloride	ug/L	NS	<0.7	<0.7	<0.7
Benzene	ug/L	5	<0.2	<0.2	<0.2
Bromodichloromethane	ug/L	100	<0.22	<0.22	<0.22
Ethyl Methacrylate	ug/L	NS	<0.68	<0.68	<0.68
Methacrylonitrile	ug/L	NS	<3.2	<3.2	<3.2
Methyl Methacrylate	ug/L	NS	<0.76	<0.76	<0.76
Naphthalene	ug/L	100	<3	<3	<3
Propionitrile	ug/L	NS	<3.4	<3.4	<3.4

Detections at or above the RL are shown in bold italics on gray background.
Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.
NS = No standard

Black Hawk County Landfill
Appendix I Results
Monitoring Well OW-224B

Parameter Name	Units	GPS	Jan-23	Mar-23	Aug-23	Sep-23	Dec-23	Apr-24	Oct-24
Appendix I Inorganics									
Total Suspended Solids	mg/L	NS	***15.5***	***9***	***16.5***	***16.5***	***20.5***	***33***	***25***
Turbidity, Field	NTU	NS	***24.84***	***8.9***	***28.62***	***104.1***	***4.69***	***67.89***	***22.29***
Turbidity, Lab	NTU	NS	--	--	--	--	--	--	--
Antimony	µg/L	6	<2.76	***1.65 J***	***1.23 J***	<4	<1	<1	<1
Antimony, Dissolved	µg/L	NS	--	--	--	--	--	--	--
Arsenic	µg/L	10	***2.98***	***3.51***	***4.99***	***6.57***	***6.26***	***5.7***	***7.7***
Arsenic, Dissolved	µg/L	NS	--	--	--	--	--	--	--
Barium	µg/L	2000	***1700***	***1860***	***2120***	***1770***	***2370***	***2580***	***2570***
Barium, Dissolved	µg/L	NS	--	--	--	--	--	--	--
Beryllium	µg/L	4	<0.27	<1.08	<0.33	<0.33	<0.33	<0.33	<0.33
Beryllium, Dissolved	µg/L	NS	--	--	--	--	--	--	--
Cadmium	µg/L	5	***1.53***	***1.33***	***0.387***	***0.454***	***0.234***	***0.349***	***0.24***
Cadmium, Dissolved	µg/L	NS	--	--	--	--	--	--	--
Chromium	µg/L	100	***8.34***	***9.01***	***9.25***	***9.24***	***12.6***	***7.68***	***8.2***
Chromium, Dissolved	µg/L	NS	--	--	--	--	--	--	--
Cobalt	µg/L	9.83	***55.4***	***62***	***29.9***	***24.8***	***21.7***	***32.5***	***23***
Cobalt, Dissolved	µg/L	NS	--	--	--	--	--	--	--
Copper	µg/L	1300	***17.2***	***11.6 J***	***3.5 J***	***2.5 J***	***1.94 J***	***7.43***	***2.45 J***
Copper, Dissolved	µg/L	NS	--	--	--	--	--	--	--
Lead	µg/L	15	***0.801***	***1.27***	***0.926***	***1.61***	***1.37***	***1.44***	***1.74***
Lead, Dissolved	µg/L	NS	--	--	--	--	--	--	--
Nickel	µg/L	722	***280***	***272***	***143***	***125***	***105***	***172***	***116***
Nickel, Dissolved	µg/L	NS	--	--	--	--	--	--	--
Selenium	µg/L	50	***1.96 J***	***1.97 J***	***2.64 J***	<1.4	<1.4	<1.4	<1.4
Selenium, Dissolved	µg/L	NS	--	--	--	--	--	--	--
Silver	µg/L	100	<0.49	<0.49	<0.5	<0.5	<0.5	<2	<0.5
Silver, Dissolved	µg/L	NS	--	--	--	--	--	--	--
Thallium	µg/L	2	<0.26	<0.26	***1.42***	<0.26	<0.26	<0.57	***1.37***
Thallium, Dissolved	µg/L	NS	--	--	--	--	--	--	--
Vanadium	µg/L	35	***2.45 J***	***3.37 J***	***5.35 J***	***3.6 J***	***3.21 J***	<4.4	***3.16 J***
Vanadium, Dissolved	µg/L	NS	--	--	--	--	--	--	--
Zinc	µg/L	2000	***10.2 J***	<10	<6.4	<25.6	<6.4	<9.7	<9.7
Zinc, Dissolved	µg/L	NS	--	--	--	--	--	--	--
Appendix I Organics									
1,1,1,2-Tetrachloroethane	µg/L	70	<0.38	<0.38	<3.8	<0.38	<0.38	<3.8	<0.38
1,1,1-Trichloroethane	µg/L	200	<0.19	<0.19	<1.9	<0.19	<0.19	<1.9	<0.19
1,1,2,2-Tetrachloroethane	µg/L	0.3	<0.47	<0.47	<4.7	<0.47	<0.47	<4.7	<0.47
1,1,2-Trichloroethane	µg/L	5	<0.45	<0.45	<4.5	<0.45	<0.45	<4.5	<0.45
1,1-Dichloroethane	µg/L	140	***0.242 J***	***0.383 J***	<2.2	<0.22	<0.22	<2.2	<0.22
1,1-Dichloroethylene	µg/L	7	<0.56	<0.56	<5.6	<0.56	<0.56	<5.6	<0.56
1,2,3-Trichloropropane	µg/L	0.0058	<0.59	<0.59	<5.9	<0.59	<0.59	<5.9	<0.59
1,2-Dibromo-3-chloropropane	µg/L	0.2	<1.2	<1.2	<12	<1.2	<1.2	<12	<1.2
1,2-Dibromoethane	µg/L	0.05	<0.34	<0.34	<3.4	<0.34	<0.34	<3.4	<0.34
1,2-Dichlorobenzene	µg/L	600	<0.37	<0.37	<3.7	<0.37	<0.37	<3.7	<0.37
1,2-Dichloroethane	µg/L	5	<0.39	<0.39	<3.9	<0.39	<0.39	<3.9	<0.39
1,2-Dichloropropane	µg/L	5	<0.27	<0.27	<2.7	<0.27	<0.27	<2.7	<0.27
1,4-Dichlorobenzene	µg/L	75	***1.97***	***3.18***	***2.81 J***	***3.29***	***2.95***	<2.3	***3.52***
2-Butanone	µg/L	4000	<2.1	***7.65 J***	<21	<2.1	***4.77 J***	<21	***5.07 J***
2-Hexanone	µg/L	NS	<2	<2	<20	<2	<2	<20	<2
4-Methyl-2-pentanone	µg/L	560	<2.1	<2.1	<21	<2.1	<2.1	<21	<2.1
Acetone	µg/L	6300	<3.1	<3.1	<31	***6.7 J***	***5.43 J***	<31	***10.5***
Acrylonitrile	µg/L	0.32	<2.2	<2.2	<22	<2.2	<2.2	<22	<2.2
Benzene	µg/L	5	***2.05***	***3.24***	***4.34 J***	***4.36***	***4.2***	***3.02 J***	***4.21***
Bromochloromethane	µg/L	90	<0.54	<0.54	<5.4	<0.54	<0.54	<5.4	<0.54
Bromodichloromethane	µg/L	80	<0.39	<0.39	<3.9	<0.39	<0.39	<3.9	<0.39
Bromomethane	µg/L	10	<1.1	<1.1	<11	<1.1	<1.1	<11	<1.1
Carbon disulfide	µg/L	700	<0.45	<0.45	<4.5	<0.45	<0.45	<4.5	<0.45
Carbon Tetrachloride	µg/L	5	<0.65	<0.65	<6.5	<0.65	<0.65	<6.5	<0.65
Chlorobenzene	µg/L	100	<0.4	<0.4	<4	<0.4	***0.429 J***	<4	<0.4
Chloroethane	µg/L	2800	<0.79	<0.79	<7.9	<0.79	<0.79	<7.9	<0.79
Chloromethane	µg/L	NS	<0.61	<0.61	<6.1	<0.61	<0.61	<6.1	<0.61
cis-1,2-Dichloroethylene	µg/L	70	***1.35***	***1.22***	<2.1	<0.21	<0.21	<2.1	***0.26 J***
cis-1,3-Dichloropropene	µg/L	NS	<0.25	<0.25	<2.5	<0.25	<0.25	<2.5	<0.25
Dibromochloromethane	µg/L	80	<0.75	<0.75	<7.5	<0.75	<0.75	<7.5	<0.75
Dibromomethane	µg/L	70	<0.33	<0.33	<3.3	<0.33	<0.33	<3.3	<0.33
Dichloromethane	µg/L	5	<1.7	<1.7	<17	<1.7	<1.7	<17	<1.7
Ethylbenzene	µg/L	700	***0.458 J***	***0.472 J***	<3.1	<0.31	<0.31	<3.1	<0.31
Iodomethane	µg/L	NS	<7	<7	<70	<7	<7	<70	<7
Styrene	µg/L	100	<0.37	<0.37	<3.7	<0.37	<0.37	<3.7	<0.37
Tetrachloroethylene	µg/L	5	<0.48	<0.48	<4.8	<0.48	<0.48	<4.8	<0.48
Toluene	µg/L	1000	<0.43	<0.43	<4.3	***0.539 J***	<0.43	<4.3	<0.43
Trans-1,2-dichloroethylene	µg/L	100	<0.27	<0.27	<2.7	<0.27	<0.27	<2.7	<0.27
trans-1,3-Dichloropropene	µg/L	NS	<0.56	<0.56	<5.6	<0.56	<0.56	<5.6	<0.56
trans-1,4-Dichloro-2-butene	µg/L	1.8	<1.1	<1.1	<11	<1.1	<1.1	<11	<1.1
Tribromomethane	µg/L	80	<0.78	<0.78	<7.8	<0.78	<0.78	<7.8	<0.78
Trichloroethylene	µg/L	5	<0.43	<0.43	<4.3	<0.43	<0.43	<4.3	<0.43
Trichlorofluoromethane	µg/L	2000	<0.38	<0.38	<3.8	<0.38	<0.38	<3.8	<0.38
Trichloromethane	µg/L	80	<1.3	<1.3	<13	<1.3	<1.3	<13	<1.3
Vinyl Acetate	µg/L	NS	<2.5	<2.5	<25	<2.5	<2.5	<25	<2.5
Vinyl Chloride	µg/L	2	<0.18	<0.18	<1.8	<0.18	<0.18	<1.8	<0.18
Xylenes	µg/L	10000	<0.4	<0.4	<4	<0.4	<0.4	<4	<0.4

Detections at or above the RL are shown in bold italics on gray background.

Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.

NS = No standard

Black Hawk County Landfill
Appendix H Results
Monitoring Well OW-224B

Constituent Name	Units	UPL	9/2/24	12/12/24
Alcohols/Glycols by GC				
Acetonitrile	ug/L	NA	<170	<2400
Isobutanol	ug/L	2150	<530	<2400
Pesticides (GC)				
2,4,5-T	ug/L	70	<0.024	<0.253
2,4-D	ug/L	70	<0.0886	<0.126
Silvex (2,4,5-TP)	ug/L	50	<0.0886	<0.126
Energetics				
2,4-DNT	ug/L	109	<0.3	<3.5
Tetryl	ug/L	2	<0.18	<0.11
RDX	ug/L	NA	<0.03	<1.011
TNT	ug/L	4500	<2.3	<2.3
PCBs (EPA Method 8082)				
PCB-1016	ug/L	NA	<0.177	<0.782
PCB-1221	ug/L	NA	<0.177	<0.782
PCB-1232	ug/L	NA	<0.177	<0.782
PCB-1242	ug/L	NA	<0.177	<0.782
PCB-1248	ug/L	NA	<0.112	<0.0228
PCB-1254	ug/L	NA	<0.155	<0.668
PCB-1260	ug/L	NA	<0.155	<0.668
Pesticides (EPA Method 8081A)				
4,4'-DDD	ug/L	0.75	<0.0181	<0.0238
4,4'-DDE	ug/L	0.32	<0.0181	<0.0286
4,4'-DDT	ug/L	0.16	<0.0108	<0.0191
Aldrin	ug/L	0.05	<0.0333	<0.021
Alpha-BHC	ug/L	0.038	<0.0302	<0.000544
beta-BHC	ug/L	0.042	<0.0381	<0.0493
Delta-BHC	ug/L	1.1	<0.0284	<0.0493
Alpha-BHC	ug/L	1.1	<0.034	<0.0595
Dieldrin	ug/L	0.033	<0.0377	<0.02
Endosulfan I	ug/L	42	<0.0341	<0.0267
Endosulfan II	ug/L	42	<0.0302	<0.0248
Endosulfan sulfate	ug/L	NA	<0.0313	<0.0172
Endrin	ug/L	2	<0.0271	<0.0267
Endrin aldehyde	ug/L	2.1	<0.0362	<0.0267
gamma-BHC (Lindane)	ug/L	0.2	<0.0371	<0.000544
Heptachlor	ug/L	0.4	<0.0344	<0.0219
Heptachlor epoxide	ug/L	0.2	<0.0382	<0.0381
Methoxychlor	ug/L	40	<0.0427	<0.0595
Toxaphene	ug/L	3	<0.719	<0.954
Semivolatile Organics by GC/MS				
1,2,4,5-Tetrachlorobenzene	ug/L	2.3	<0.529	<0.54
1,2,4-Trimethylbenzene	ug/L	NA	<2.25	<2.3
1,3-Dinitrobenzene	ug/L	3	<3.18	<3.2
1,4-Naphthoquinone	ug/L	NA	<1.13	<1.6
1,4-Phenylenediamine	ug/L	NA	<1.86	<3.9
1-Naphthylamine	ug/L	NA	<2.42	<2.5
2,4,5-Trichlorophenol	ug/L	NA	<5.2	<5.3
2,4,6-Trichlorophenol	ug/L	700	<5.2	<5.3
2,4-Dichlorophenol	ug/L	16	<4.9	<5
2,4-Dimethylphenol	ug/L	60	<0.833	<0.85
2,4-Dinitrophenol	ug/L	11	<0.0337	<0.02
2,4-Dinitrotoluene	ug/L	1.6	<3.2.7	<3.8
2,6-Dinitrotoluene	ug/L	0.49	<6.47	<6.4
2,6-Dichlorophenol	ug/L	NA	<0.676	<0.68
2,6-Dinitrotoluene	ug/L	0.26	<0.35	<0.52
2-Acetylaminofluorene	ug/L	NA	<2.61	<2.7
2-Chloronaphthalene	ug/L	560	<0.627	<0.64
2-Chlorophenol	ug/L	40	<0.249	<0.44
2-Methylnaphthalene	ug/L	28	<0.178	<0.58
2-Methylphenol (o-Cresol)	ug/L	31	<0.637	<0.66
2-Naphthylamine	ug/L	0.057	<2.86	<2.9
2-Nitroaniline	ug/L	60	<0.27	<0.23
2-Nitrophenol	ug/L	NA	<0.35	<0.8
3,3'-Dichlorobenzidine	ug/L	0.39	<1.37	<1.8
3,3'-Dimethylbenzidine	ug/L	NA	<1.47	<1.5
3-Methylphenol	ug/L	70	<0.686	<0.7
3-Methylcholanthrene	ug/L	NA	<0.314	<0.32
3-Nitroaniline	ug/L	NA	<2.66	<2.7
4,6-Dinitro-2-methylphenol	ug/L	NA	<6.76	<6.8
4-Aminobiphenyl	ug/L	0.00053	<2.16	<2.2
4-Bromophenyl phenyl ether	ug/L	NA	<0.686	<0.7
4-Chloro-3-methylphenol	ug/L	700	<0.824	<0.84
4-Chloroaniline	ug/L	49	<0.688	<0.62
4-Chlorophenyl phenyl ether	ug/L	NA	<0.676	<0.68
4-Nitroaniline	ug/L	NA	<0.27	<0.23
4-Nitrophenol	ug/L	60	<7.45	<7.6
4-Nitroquinoline-n-oxidine	ug/L	NA	<2.35	<2.8
5,12-Dimethylbenz(a)anthracene	ug/L	NA	<1.06	<1.9
Acenaphthene	ug/L	420	*0.013 J*	<0.64
Acenaphthylene	ug/L	210	<0.706	<0.72
Acetophenone	ug/L	NA	<0.676	<0.69
Aniline	ug/L	2100	<0.855	<0.87
Benzo (a) anthracene	ug/L	0.24	<0.833	<0.85
Benzo (a) pyrene	ug/L	0.2	<7.68	<8.1
Benzo (b) fluoranthene	ug/L	0.24	<4.8	<4.9
Benzo (g,h,i) perylene	ug/L	210	<2.18	<2.2
Benzo (k) fluoranthene	ug/L	2.4	<2.18	<2.2
Benzyl alcohol	ug/L	700	<1.27	<1.3
Bis(2-chloroethoxy)methane	ug/L	NA	<0.705	<0.76
Bis(2-chloroethyl) ether	ug/L	0.16	<0.804	<0.82
Bis(2-chloroisopropyl) ether	ug/L	200	<0.529	<0.54
Bis(2-ethylhexyl)phthalate	ug/L	6	<1.39	<1.5
Butyl benzyl phthalate	ug/L	140	<1.35	<1.4
Chrysene	ug/L	NA	<1.33	<1.6
Dibenz (a,h) anthracene	ug/L	2.1	<0.833	<0.87
Diallate (cis or trans)	ug/L	NA	<1.92	<1
Dibenzofuran	ug/L	0.123	<0.706	<0.72
Diethyl ether	ug/L	1	<0.725	<0.74
Diethyl phthalate	ug/L	6400	<1.67	<1.7
Dimethoate	ug/L	1.4	<3.35	<3.6
Dimethyl phthalate	ug/L	NA	<0.98	<1
Di-n-butyl phthalate	ug/L	700	*0.79 J*	<3.6
Di-n-octyl phthalate	ug/L	140	<6.86	<7
Ethinamate	ug/L	7	<2.35	<2.4
Ethyl methanesulfonate	ug/L	100	<1.88	<6
Fluoranthene	ug/L	0.7	<2.45	<2.4
Hexachlorobenzene	ug/L	NA	<1.53	<1.6
Isophorone	ug/L	NA	<1.53	<1.6
Isosafrole	ug/L	200	<1.92	<1.9
Methapyrilene	ug/L	180	<3.38	<3.5
Methyl Methanesulfonate	ug/L	NA	<0.98	<1
Naphthalene	ug/L	14	<0.784	<0.8
N-Nitrosodibutylamine	ug/L	NA	<1.35	<2.4
N-Nitrosodiethylamine	ug/L	0.0055	<0.706	<0.72
N-Nitrosodi-n-butylamine	ug/L	0.032	<3.42	<3.5
N-Nitrosodi-n-propylamine	ug/L	NA	<0.902	<0.92
N-Nitrosodiphenylamine	ug/L	99	<0.735	<0.75
N-Nitrosomethylethylamine	ug/L	0.008	<4.8	<4.9
N-Nitrosopiperidine	ug/L	NA	<1.66	<2.7
N-Nitrosopyrrolidine	ug/L	0.081	<3.53	<3.6
O,O,O-Triethylphosphorothioate	ug/L	NA	<2.84	<2.9
O-Toluidine	ug/L	13	<2.84	<2.9
O,O-Diethyl O-pyrazinyl phosphorothioate	ug/L	NA	<2.16	<2.2
Parathion ethyl	ug/L	NA	<2.16	<2.2
Parathion methyl	ug/L	3	<2.25	<2.3
Pentachlorobenzene	ug/L	NA	<2.75	<2.8
Pentachloronitrobenzene	ug/L	NA	<1.49	<1.8
Pentachlorophenol	ug/L	1	<36.41	<9.6
Pharmacide	ug/L	NA	<1.06	<1.9
Pronamide	ug/L	210	<0.775	<0.79
Phenol	ug/L	2000	<1.08	<1.1
Pyrene	ug/L	1.8	<3.18	<3.2
Pyridine	ug/L	3	<2.66	<2.7
Safrole	ug/L	0.2	<2.84	<2.9
Sulfotep	ug/L	NA	<2.75	<2.8
Thionazin	ug/L	NA	<3.03	*3.29 J*
Volatile Organic Compounds				
1,1-Dichloroethane	ug/L	NA	<0.43	<0.43
1,1,2-Trichlorotrifluoroethane	ug/L	70	<0.76	<0.76
1,1-Dichloroethene	ug/L	600	<0.3	<0.3
1,2-Dichloropropane	ug/L	NA	<0.8	<0.8
1,2-Dichloropropene	ug/L	NA	<0.68	<0.68
Acrolein	ug/L	NA	<1.6	<1.6
Allyl chloride	ug/L	NA	<0.7	<0.7
Benzene	ug/L	5	<0.17	<0.17
Bis(chloromethyl)ether	ug/L	0.01	<0.22	<0.22
Ethyl Methacrylate	ug/L	NA	<0.68	<0.68
Methacrylonitrile	ug/L	NA	<1.1	<1.1
Methyl Methacrylate	ug/L	NA	<0.76	<0.76
Naphthalene	ug/L	100	<1	<1
Propionitrile	ug/L	NA	<1.4	<1.4

Detections at or above the RL are shown in bold italics on gray background.
Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.
NA = No standard

Black Hawk County Landfill
Appendix I Results
Monitoring Well OW-225B

Parameter Name	Units	GPS	Jan-23	Mar-23	Aug-23	Sep-23	Dec-23	Apr-24	Jul-24	Oct-24
Appendix I Inorganics										
Total Suspended Solids	mg/L	NS	***9***	***16.7***	***10.4***	***17.5***	***15.5***	***42.5***	***34***	***18.2***
Turbidity, Field	NTU	NS	***6.26***	***35.7***	***7.74***	***5.71***	***17.09***	***48.28***	***60.59***	***19.72***
Turbidity, Lab	NTU	NS	--	--	--	--	--	--	--	--
Antimony	µg/L	6	<0.69	<0.69	<1	<1	<1	<1	--	<1
Antimony, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	***1.45 J***	***1.68 J***	***2.42***	***2.16***	***2.74***	***5.86***	***6.52***	***6.29***
Arsenic, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--
Barium	µg/L	2000	***1510***	***1360***	***1680***	***1070***	***1420***	***1710***	--	***1380***
Barium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	<0.27	<0.27	<0.33	<0.33	<0.33	<0.33	--	<0.33
Beryllium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	***0.895***	***0.646***	***0.999***	***0.484***	***0.522***	***0.398***	--	***0.502***
Cadmium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--
Chromium	µg/L	100	***3.92 J***	***4.47 J***	***4.25 J***	***3.15 J***	***4.4 J***	***4.47 J***	--	***10.4***
Chromium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--
Cobalt	µg/L	9.83	***26.9***	***30.9***	***34.9***	***21***	***30.6***	***33.3***	--	***30***
Cobalt, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--
Copper	µg/L	1300	***7.26***	***5.56***	***5.84***	***3.45 J***	***5.8***	***3.23 J***	--	***3.48 J***
Copper, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--
Lead	µg/L	15	***0.416 J***	***0.333 J***	***0.886***	***0.561***	***0.673***	***0.957***	--	***1.55***
Lead, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--
Nickel	µg/L	722	***102***	***120***	***126***	***85***	***126***	***144***	--	***124***
Nickel, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--
Selenium	µg/L	50	***1.41 J***	***1.35 J***	***1.44 J***	<1.4	<1.4	<1.4	--	<1.4
Selenium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--
Silver	µg/L	100	<0.49	<0.49	<0.5	<0.5	<0.5	<0.5	--	<0.5
Silver, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--
Thallium	µg/L	2	<0.26	<0.26	<0.26	<0.26	<0.26	<0.57	--	<0.57
Thallium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--
Vanadium	µg/L	35	***1.15 J***	***1.23 J***	***2.37 J***	<1.1	***1.59 J***	***1.81 J***	--	***2.36 J***
Vanadium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--
Zinc	µg/L	2000	<10	<10	<6.4	<6.4	<6.4	<9.7	--	<9.7
Zinc, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--
Appendix I Organics										
1,1,1,2-Tetrachloroethane	µg/L	70	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	--	<0.38
1,1,1-Trichloroethane	µg/L	200	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	--	<0.19
1,1,2,2-Tetrachloroethane	µg/L	0.3	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	--	<0.47
1,1,2-Trichloroethane	µg/L	5	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	--	<0.45
1,1-Dichloroethane	µg/L	140	***0.317 J***	***0.443 J***	<0.22	***0.287 J***	***0.331 J***	***0.274 J***	--	<0.22
1,1-Dichloroethylene	µg/L	7	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	--	<0.56
1,2,3-Trichloropropane	µg/L	0.0058	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	--	<0.59
1,2-Dibromo-3-chloropropane	µg/L	0.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	--	<1.2
1,2-Dibromoethane	µg/L	0.05	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	--	<0.34
1,2-Dichlorobenzene	µg/L	600	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	--	<0.37
1,2-Dichloroethane	µg/L	5	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	--	<0.39
1,2-Dichloropropane	µg/L	5	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	--	<0.27
1,4-Dichlorobenzene	µg/L	75	<0.23	***1.25***	***0.498 J***	***1.07***	***0.875 J***	***0.791 J***	--	***0.738 J***
2-Butanone	µg/L	4000	<2.1	***6.58 J***	<2.1	***5.86 J***	***5.43 J***	***6.31 J***	--	<2.1
2-Hexanone	µg/L	NS	<2	<2	<2	<2	<2	<2	--	<2
4-Methyl-2-pentanone	µg/L	560	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	--	<2.1
Acetone	µg/L	6300	<3.1	<3.1	***5.85 J***	***6.68 J***	<3.1	***40.9***	--	***5.1 J***
Acrylonitrile	µg/L	0.32	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	--	<2.2
Benzene	µg/L	5	***0.777***	***0.972***	***1***	***1.28***	***1.2***	***1.18***	--	***0.983***
Bromochloromethane	µg/L	90	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	--	<0.54
Bromodichloromethane	µg/L	80	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	--	<0.39
Bromomethane	µg/L	10	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	--	<1.1
Carbon disulfide	µg/L	700	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	--	<0.45
Carbon Tetrachloride	µg/L	5	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	--	<0.65
Chlorobenzene	µg/L	100	***0.531 J***	***0.865 J***	***0.542 J***	***0.988 J***	***0.728 J***	***0.772 J***	--	<0.4
Chloroethane	µg/L	2800	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	--	<0.79
Chloromethane	µg/L	NS	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	--	<0.61
cis-1,2-Dichloroethylene	µg/L	70	***0.844 J***	***0.749 J***	<0.21	***1.16***	***1.17***	***0.778 J***	--	***0.842 J***
cis-1,3-Dichloropropene	µg/L	NS	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	--	<0.25
Dibromochloromethane	µg/L	80	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	--	<0.75
Dibromomethane	µg/L	70	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	--	<0.33
Dichloromethane	µg/L	5	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	--	<1.7
Ethylbenzene	µg/L	700	<0.31	***0.626 J***	<0.31	***0.504 J***	<0.31	<0.31	--	<0.31
Iodomethane	µg/L	NS	<7	<7	<7	<7	<7	<7	--	<7
Styrene	µg/L	100	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	--	<0.37
Tetrachloroethylene	µg/L	5	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	--	<0.48
Toluene	µg/L	1000	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	--	<0.43
Trans-1,2-dichloroethylene	µg/L	100	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	--	<0.27
trans-1,3-Dichloropropene	µg/L	NS	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	--	<0.56
trans-1,4-Dichloro-2-butene	µg/L	1.8	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	--	<1.1
Tribromomethane	µg/L	80	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	--	<0.78
Trichloroethylene	µg/L	5	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	--	<0.43
Trichlorofluoromethane	µg/L	2000	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	--	<0.38
Trichloromethane	µg/L	80	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	--	<1.3
Vinyl Acetate	µg/L	NS	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	--	<2.5
Vinyl Chloride	µg/L	2	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	--	<0.18
Xylenes	µg/L	10000	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	--	<0.4

Detections at or above the RL are shown in bold italics on gray background.

Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.

NS = No standard

Black Hawk County Landfill
Appendix H Results
Monitoring Well OW-225B

Constituent Name	Units	UPL	9/6/23	12/12/23
Alcohols/Glycols by GC				
Acetonitrile	ug/L	NA	<11	<.2469
Isobutanol	ug/L	2193	***85.7 J***	<.5468
Perchlorate (LC)				
ClO4-T	ug/L	70	<0.128	<0.0671
Nitrate	mg/L	10	<0.0662	**0.0811**
Nitrate + Nitrite (as N)	mg/L	10	<0.0662	**0.0811**
Inorganics				
Ammonia	ug/L	209	<14	***430 J***
Mercury	ug/L	2	<0.14	<0.11
Sulfide	ug/L	NA	***302 J***	<1.810
TOC	mg/L	4260	<2.2	<2.2
PCBs (EPA Method 8082)				
PCB-1016	ug/L	NA	<0.17	<0.1791
PCB-1221	ug/L	NA	<0.17	<0.1791
PCB-1232	ug/L	NA	<0.17	<0.1791
PCB-1242	ug/L	NA	<0.17	<0.1791
PCB-1248	ug/L	NA	<0.17	<0.1689
PCB-1254	ug/L	NA	<0.11	<0.1689
PCB-1260	ug/L	NA	<0.11	<0.0685
Pesticides (EPA Method 8081A)				
4,4'-DDD	ug/L	0.73	<0.027	<0.0242
4,4'-DDE	ug/L	0.32	<0.027	<0.0201
4,4'-DDT	ug/L	0.31	<0.042	<0.0194
Aldrin	ug/L	0.05	<0.0202	<0.0213
Alpha-BHC	ug/L	0.038	<0.029	<0.0097
beta-BHC	ug/L	0.042	<0.037	<0.0087
delta-BHC	ug/L	1.1	<0.0202	<0.0111
Alpha-BHC	ug/L	1.1	<0.021	<0.011
Chlordane	ug/L	0.033	<0.026	<0.0202
Endosulfan I	ug/L	42	<0.0353	<0.0073
Endosulfan II	ug/L	42	<0.029	<0.0052
Endosulfan sulfate	ug/L	NA	<0.03	<0.0176
Endrin	ug/L	2	<0.026	<0.0071
Endrin aldehyde	ug/L	2.1	<0.026	<0.0262
gamma-BHC (Lindane)	ug/L	0.2	<0.036	<0.0095
Heptachlor	ug/L	0.4	<0.033	<0.0223
Heptachlor epoxide	ug/L	0.2	<0.029	<0.0151
Methoxychlor	ug/L	40	<0.083	<0.035
Toxaphene	ug/L	3	<0.66	<0.97
Semivolatile Organics by GC/MS				
1,2,4,5-Tetrachlorobenzene	ug/L	2.3	<0.414	<0.1063
1,2,4-Trimethylbenzene	ug/L	NA	<2.05	<1.3
1,2,5-Oxadiazole	ug/L	1	<3.64	<3.35
1,2-Naphthoquinone	ug/L	NA	<4.09	<3.72
1,2-Phenylenediamine	ug/L	NA	<2.16	<1.98
1-Naphthylamine	ug/L	NA	<2.84	<2.6
2,4,5,6-Tetrachlorophenol	ug/L	NA	<6.03	<5.67
2,4,5-Trichlorophenol	ug/L	390	<6.02	<5.52
2,4,6-Trichlorophenol	ug/L	16	<3.68	<3.33
2,4-Dichlorophenol	ug/L	60	<0.966	<0.895
2,4-Dimethylphenol	ug/L	120	<2.84	<2.61
2,4-Dinitrophenol	ug/L	14	<14.8	<13.5
2,4-Dinitrotoluene	ug/L	0.49	<7.27	<6.91
2,6-Dichlorophenol	ug/L	NA	<0.784	<0.719
2,6-Dinitrotoluene	ug/L	0.26	<0.581	<0.542
2-Acetylaminofluorene	ug/L	NA	<3.07	<2.81
2-Chloronaphthalene	ug/L	560	<0.727	<0.667
2-Chlorophenol	ug/L	40	<0.414	<0.3663
2-Methylnaphthalene	ug/L	20	<0.45	<0.0412
2-Methylphenol (o-Cresol)	ug/L	30	<0.709	<0.617
2-Naphthylamine	ug/L	0.057	<2.39	<2.19
2-Nitroaniline	ug/L	0.19	<2.16	<1.98
2-Nitrophenol	ug/L	NA	<7.73	<7.08
3,3'-Dichlorobenzidine	ug/L	0.39	<1.58	<1.46
3,3'-Dimethylbenzidine	ug/L	NA	<1.7	<1.56
3-(Methylthio)propionitrile	ug/L	70	<0.795	<0.723
3-Methylcholanthrene	ug/L	NA	<0.364	<0.333
3-Nitroaniline	ug/L	NA	<3.07	<2.81
4,6-Dinitro-2-methylphenol	ug/L	NA	<7.84	<7.19
4-Aminobiphenyl	ug/L	0.0083	<2.5	<2.29
4-Bromophenyl phenyl ether	ug/L	NA	<0.795	<0.729
4-Chloro-3-methylphenol	ug/L	700	<0.902	<0.8271
4-Chloroaniline	ug/L	49	<0.709	<0.6498
4-Chlorophenyl phenyl ether	ug/L	NA	<0.784	<0.719
4-Nitroaniline	ug/L	0.19	<2.16	<1.98
4-Nitrophenol	ug/L	60	<6.64	<7.02
4-Nitroquinoline	ug/L	NA	<3.18	<2.92
5,12-Dimethylbenz[a]anthracene	ug/L	NA	<2.16	<1.98
Acenaphthene	ug/L	420	<0.727	<0.667
Acenaphthylene	ug/L	210	<0.818	<0.75
Acetophenone	ug/L	NA	<0.784	<0.719
Aniline	ug/L	2193	<0.909	<0.8336
Benzo (a) anthracene	ug/L	0.24	<0.966	<0.885
Benzo (a) pyrene	ug/L	0.2	<3.2	<2.48
Benzo (b) fluoranthene	ug/L	0.24	<3.32	<3.3
Benzo (g,h,i) perylene	ug/L	210	<2.16	<1.98
Benzo (k) fluoranthene	ug/L	2.4	<2.5	<2.29
Benzyl alcohol	ug/L	780	<1.48	<1.35
Bis(2-chloroethoxy)methane	ug/L	NA	<0.864	<0.7792
Bis(2-chloroethyl) ether	ug/L	0.16	<0.932	<0.854
Bis(2-chloroisopropyl) ether	ug/L	200	<0.414	<0.3663
Bis(2-ethylhexyl)phthalate	ug/L	6	<6.25	<5.73
Butyl benzyl phthalate	ug/L	140	<6.14	<5.63
Carbazole	ug/L	NA	<4.09	<3.75
Chrysene	ug/L	24	<0.909	<0.806
Diallate (cis or trans)	ug/L	NA	<4.55	<4.17
Dibenz(a,h) anthracene	ug/L	0.024	<0.966	<0.885
Dibenzofuran	ug/L	7	<0.841	<0.771
Diethyl phthalate	ug/L	6600	<1.93	<1.77
Dimethoate	ug/L	1.4	<4.09	<3.75
Dimethyl phthalate	ug/L	NA	<1.14	<1.04
Di-n-butyl phthalate	ug/L	700	<6.36	<5.83
Di-n-octyl phthalate	ug/L	140	<7.95	<7.29
Diphenyl	ug/L	7	<0.73	<0.5
Diphenylamine	ug/L	180	<5.92	<6.26
Disulfoton	ug/L	0.7	<2.73	<2.5
Ethyl Methanesulfonate	ug/L	NA	<4.09	<3.75
Famphur	ug/L	NA	<4.32	<3.96
Fluoranthene	ug/L	280	<1.93	<1.77
Fluorene	ug/L	280	<0.909	<0.833
Hexachlorobenzene	ug/L	1	<0.795	<0.729
Hexachlorobutadiene	ug/L	5	<0.977	<0.896
Hexachlorocyclopentadiene	ug/L	50	<3.68	<3.33
Hexachloroethane	ug/L	5	<1.1	<1.01
Hexachloropropene	ug/L	NA	<2.95	<2.71
Indeno (1,2,3-cd) pyrene	ug/L	0.24	<4.77	<4.38
Isodrin	ug/L	NA	<5.38	<4.9
Isophorone	ug/L	100	<1.06	<0.969
Isosafrole	ug/L	NA	<2.05	<1.8
Kepone	ug/L	NA	<1.14	<1.04
Methapyrilene	ug/L	NA	<4.09	<3.75
Methyl Methanesulfonate	ug/L	1.8	<3.75	<3.42
Naphthalene	ug/L	14	<0.909	<0.833
N-Nitrosodibutylamine	ug/L	NA	<2.86	<2.54
N-Nitrosodiethylamine	ug/L	0.0054	<0.818	<0.75
N-Nitrosodimethylamine	ug/L	0.032	<4.43	<4.06
N-Nitrosodi-n-propylamine	ug/L	NA	<1.05	<0.958
N-Nitrosodiphenylamine	ug/L	99	<0.414	<0.701
N-Nitrosomethylethylamine	ug/L	0.008	<3.52	<3.3
N-Nitrosopiperidine	ug/L	NA	<3.07	<2.81
N-Nitrosopyrrolidine	ug/L	0.161	<4.09	<3.75
O,O,O-Triethylphosphorothioate	ug/L	NA	<3.07	<2.81
O-Toluidine	ug/L	13	<3.3	<3.03
O,O-Diethyl O-pyrazinyl phosphorothioate	ug/L	NA	<2.5	<2.29
Parathion ethyl	ug/L	NA	<2.5	<2.29
Parathion methyl	ug/L	3	<2.05	<1.8
Pentachlorobenzene	ug/L	NA	<3.18	<2.92
Pentachloronitrobenzene	ug/L	NA	<4.18	<4.04
Pentachlorophenol	ug/L	1	<10.8	<7.98
Pharmacetin	ug/L	NA	<1.36	<1.98
Phenacetin	ug/L	210	<0.898	<0.813
Phenol	ug/L	2000	<1.25	<1.15
Pronamide	ug/L	5.4	<3.68	<3.33
Propionitrile	ug/L	5	<3.07	<2.81
Pyridine	ug/L	37	<0.909	<0.833
Safrole	ug/L	NA	<3.18	<2.92
Thionazin	ug/L	NA	<3.98	<3.65
Volatile Organic Compounds				
1,1,1,2-Tetrachloroethane	ug/L	NA	<0.45	<0.42
1,1,1-Trichloroethane	ug/L	70	<0.76	<0.75
1,1,2-Trichloroethane	ug/L	680	<0.3	<0.3
1,1-Dichloropropene	ug/L	NA	<0.4	<0.4
1,2,3-Trichloropropane	ug/L	NA	<0.68	<0.68
1,2-Dibromo-3-chloropropane	ug/L	NA	<1.6	<1.6
1,2-Dichloroethane	ug/L	NA	<0.7	<0.7
1,2-Dichloropropane	ug/L	1000	<0.32	<0.32
1,3-Dichloropropane	ug/L	NA	<0.68	<0.68
1,4-Dichlorobutane	ug/L	NA	<1.3	<1.3
1-Methylnaphthalene	ug/L	NA	<0.76	<0.76
2,2-Dichloropropane	ug/L	100	<1	<1
2-Butanone	ug/L	NA	<3.4	<3.4

Detections at or above the RL are shown in bold italics on gray background.
Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.
NA = No standard

Black Hawk County Landfill
Appendix I Results
Monitoring Well OW-226B

Parameter Name	Units	GPS	Jan-23	Mar-23	Aug-23	Sep-23	Dec-23	May-24	Jul-24	Oct-24
Appendix I Inorganics										
Total Suspended Solids	mg/L	NS	***112***	***74***	***62***	***57***	***10***	***48***	***49***	***56***
Turbidity, Field	NTU	NS	***138.17***	***40.59***	***22.77***	***82.31***	***41.44***	***24.86***	***19.15***	***37.92***
Turbidity, Lab	NTU	NS	--	--	--	--	--	--	--	--
Antimony	µg/L	6	<0.69	<2.76	<1	<5	<1	<1	--	<1
Antimony, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	***5.53***	***5.08***	***7.88***	***8.57 J***	***8.09***	***8.05***	***7.48***	***10***
Arsenic, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--
Barium	µg/L	2000	***1400***	***1790***	***1720***	***1500***	***1660***	***1450***	--	***1830***
Barium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	<0.27	<1.08	<0.33	<1.65	<0.33	<0.33	--	<0.33
Beryllium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	***0.19***	***0.188***	***0.508***	<0.5	***0.26***	***0.148 J***	--	***0.23***
Cadmium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--
Chromium	µg/L	100	***9.42***	***8.87***	***9.03***	***10.4 J***	***9.11***	***9.35***	--	***11.2***
Chromium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--
Cobalt	µg/L	9.83	***34.5***	***28.7***	***26***	***19.7***	***24.6***	***18.8***	--	***25***
Cobalt, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--
Copper	µg/L	1300	***3.99 J***	<7.2	***2.51 J***	<9	***3.09 J***	***3.06 J***	--	***5.35***
Copper, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--
Lead	µg/L	15	***2.61***	***1.27***	***1.28***	***1.81 J***	***2.02***	***0.978***	--	***2.47***
Lead, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--
Nickel	µg/L	722	***84.3***	***81.2***	***78.9***	***66.6***	***85.1***	***70.5***	--	***94.7***
Nickel, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--
Selenium	µg/L	50	***1.46 J***	***1.6 J***	<1.4	<7	<1.4	<1.4	--	<1.4
Selenium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--
Silver	µg/L	100	<0.49	<0.49	<0.5	<2.5	<0.5	<0.5	--	<0.5
Silver, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--
Thallium	µg/L	2	<0.26	<0.26	<1.04	<1.3	<0.26	<0.57	--	***0.955 J***
Thallium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--
Vanadium	µg/L	35	***4.35 J***	***4.24 J***	***8.12 J***	<5.5	***2.88 J***	***2.74 J***	--	***4.09 J***
Vanadium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--
Zinc	µg/L	2000	<10	<40	<6.4	<32	<6.4	<9.7	--	<9.7
Zinc, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--
Appendix I Organics										
1,1,1,2-Tetrachloroethane	µg/L	70	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	--	<0.38
1,1,1-Trichloroethane	µg/L	200	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	--	<0.19
1,1,2,2-Tetrachloroethane	µg/L	0.3	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	--	<0.47
1,1,2-Trichloroethane	µg/L	5	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	--	<0.45
1,1-Dichloroethane	µg/L	140	***0.917 J***	***1.15***	<0.22	***0.752 J***	***0.913 J***	***0.755 J***	--	***0.942 J***
1,1-Dichloroethylene	µg/L	7	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	--	<0.56
1,2,3-Trichloropropane	µg/L	0.0058	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	--	<0.59
1,2-Dibromo-3-chloropropane	µg/L	0.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	--	<1.2
1,2-Dibromoethane	µg/L	0.05	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	--	<0.34
1,2-Dichlorobenzene	µg/L	600	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	--	<0.37
1,2-Dichloroethane	µg/L	5	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	--	<0.39
1,2-Dichloropropane	µg/L	5	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	--	<0.27
1,4-Dichlorobenzene	µg/L	75	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	--	<0.23
2-Butanone	µg/L	4000	<2.1	***4.34 J***	<2.1	***5.17 J***	<2.1	<2.1	--	<2.1
2-Hexanone	µg/L	NS	<2	<2	<2	<2	<2	<2	--	<2
4-Methyl-2-pentanone	µg/L	560	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	--	<2.1
Acetone	µg/L	6300	<3.1	<3.1	***5.81 J***	***12.3***	***4.46 J***	***5.36 J***	--	***9.02 J***
Acrylonitrile	µg/L	0.32	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	--	<2.2
Benzene	µg/L	5	***2.41***	***2.51***	***2.44***	***2.16***	***2.77***	***2.02***	--	***2.59***
Bromochloromethane	µg/L	90	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	--	<0.54
Bromodichloromethane	µg/L	80	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	--	<0.39
Bromomethane	µg/L	10	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	--	<1.1
Carbon disulfide	µg/L	700	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	--	<0.45
Carbon Tetrachloride	µg/L	5	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	--	<0.65
Chlorobenzene	µg/L	100	<0.4	<0.4	<0.4	***0.588 J***	<0.4	<0.4	--	***0.492 J***
Chloroethane	µg/L	2800	***1.52 J***	***0.811 J***	<0.79	<0.79	<0.79	<0.79	--	<0.79
Chloromethane	µg/L	NS	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	--	<0.61
cis-1,2-Dichloroethylene	µg/L	70	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	--	<0.21
cis-1,3-Dichloropropene	µg/L	NS	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	--	<0.25
Dibromochloromethane	µg/L	80	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	--	<0.75
Dibromomethane	µg/L	70	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	--	<0.33
Dichloromethane	µg/L	5	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	--	<1.7
Ethylbenzene	µg/L	700	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	--	***0.439 J***
Iodomethane	µg/L	NS	<7	<7	<7	<7	<7	<7	--	<7
Styrene	µg/L	100	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	--	<0.37
Tetrachloroethylene	µg/L	5	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	--	<0.48
Toluene	µg/L	1000	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	--	<0.43
Trans-1,2-dichloroethylene	µg/L	100	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	--	<0.27
trans-1,3-Dichloropropene	µg/L	NS	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	--	<0.56
trans-1,4-Dichloro-2-butene	µg/L	1.8	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	--	<1.1
Tribromomethane	µg/L	80	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	--	<0.78
Trichloroethylene	µg/L	5	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	--	<0.43
Trichlorofluoromethane	µg/L	2000	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	--	<0.38
Trichloromethane	µg/L	80	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	--	<1.3
Vinyl Acetate	µg/L	NS	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	--	<2.5
Vinyl Chloride	µg/L	2	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	--	<0.18
Xylenes	µg/L	10000	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	--	<0.4

Detections at or above the RL are shown in bold italics on gray background.

Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.

NS = No standard

Black Hawk County Landfill
Appendix II Results
Monitoring Well OW-226B

Parameter Name	Units	GPS	Sep-23	Dec-23	May-24	Jul-24	Oct-24
Alcohols/Gycols by GC							
Acetonitrile	µg/L	NS	<11	--	--	--	<2600
Isobutanol	µg/L	2100	<30	--	--	--	<2400
Herbicides (GC)							
2,4,5-T	µg/L	70	<0.156	--	--	--	<0.34
2,4-D	µg/L	70	<0.333	--	--	--	<1.31
Silvex (2,4,5-TP)	µg/L	50	<0.0904	--	--	--	<0.115
Inorganics							
Cyanide	µg/L	200	<4.3	--	--	--	***3.99 J***
Mercury	µg/L	2	<0.42	--	--	--	<0.11
Sulfide	µg/L	NS	***2310***	***2000***	<1410	<1410	<1410
Tin	µg/L	4200	<11.5	--	--	--	<2.3
PCBs (EPA Method 8082)							
PCB-1016	µg/L	NS	<0.185	--	--	--	<0.738
PCB-1221	µg/L	NS	<0.185	--	--	--	<0.738
PCB-1232	µg/L	NS	<0.185	--	--	--	<0.738
PCB-1242	µg/L	NS	<0.185	--	--	--	<0.738
PCB-1248	µg/L	NS	<0.12	--	--	--	<0.621
PCB-1254	µg/L	NS	<0.12	--	--	--	<0.621
PCB-1260	µg/L	NS	<0.12	--	--	--	<0.621
Pesticides (EPA Method 8081A)							
4,4'-DDD	µg/L	0.73	<0.0293	--	--	--	<0.0225
4,4'-DDE	µg/L	0.51	<0.0293	--	--	--	<0.027
4,4'-DDT	µg/L	0.51	<0.0457	--	--	--	<0.018
Aldrin	µg/L	0.01	<0.0348	--	--	--	<0.0198
alpha-BHC	µg/L	0.028	<0.0315	--	--	--	<0.009
beta-BHC	µg/L	0.042	<0.0402	--	--	--	<0.0378
Chlordane	µg/L	2	<0.88	--	--	--	<0.351
delta-BHC	µg/L	2.1	<0.0293	--	--	--	<0.0288
Dieldrin	µg/L	0.011	<0.0283	--	--	--	<0.0189
Endosulfan I	µg/L	42	<0.0359	--	--	--	<0.0252
Endosulfan II	µg/L	42	<0.0315	--	--	--	<0.0234
Endosulfan sulfate	µg/L	NS	<0.0326	--	--	--	<0.0162
Endrin	µg/L	2	<0.0283	--	--	--	<0.0252
Endrin aldehyde	µg/L	2.1	<0.0315	--	--	--	<0.0243
gamma-BHC (Lindane)	µg/L	0.2	<0.0391	--	--	--	<0.009
Heptachlor	µg/L	0.4	<0.0359	--	--	--	<0.0207
Heptachlor epoxide	µg/L	0.2	<0.0315	--	--	--	<0.0288
Methoxychlor	µg/L	40	<0.0446	--	--	--	<0.0288
Toxaphene	µg/L	3	<0.75	--	--	--	<0.9
Semivolatile Organics by GC/MS							
1,2,4,5-Tetrachlorobenzene	µg/L	2.1	<0.563	--	--	--	<0.563
1,3,5-Trinitrobenzene	µg/L	NS	<2.4	--	--	--	<2.4
1,3-Dinitrobenzene	µg/L	1	<3.33	--	--	--	<3.33
1,4-Naphthoquinone	µg/L	NS	<3.75	--	--	--	<3.75
1,4-Phenylenediamine	µg/L	NS	<1.98	--	--	--	<1.98
1-Naphthylamine	µg/L	NS	<2.6	--	--	--	<2.6
2,3,4,6-Tetrachlorophenol	µg/L	NS	<5.52	--	--	--	<5.52
2,4,5-Trichlorophenol	µg/L	700	<5.52	--	--	--	<5.52
2,4,6-Trichlorophenol	µg/L	16	<5.21	--	--	--	<5.21
2,4-Dichlorophenol	µg/L	20	<0.885	--	--	--	<0.885
2,4-Dimethylphenol	µg/L	100	<0.604	--	--	--	<0.604
2,4-Dinitrophenol	µg/L	14	<13.5	--	--	--	<13.5
2,4-Dinitrotoluene	µg/L	0.25	<6.67	--	--	--	<6.67
2,6-Dichlorophenol	µg/L	NS	<0.719	--	--	--	<0.719
2,6-Dinitrotoluene	µg/L	0.26	<0.542	--	--	--	<0.542
2-Acetylaminofluorene	µg/L	NS	<2.81	--	--	--	<2.81
2-Chloronaphthalene	µg/L	560	<0.667	--	--	--	<0.667
2-Chlorophenol	µg/L	40	<0.563	--	--	--	<0.563
2-Methylnaphthalene	µg/L	28	<0.615	--	--	--	<0.615
2-Methylphenol (o-Cresol)	µg/L	35	<0.677	--	--	--	<0.677
2-Naphthylamine	µg/L	0.097	<2.19	--	--	--	<2.19
2-Nitroaniline	µg/L	NS	<6.15	--	--	--	<6.15
2-Nitrophenol	µg/L	NS	<7.08	--	--	--	<7.08
3,3'-Dichlorobenzidine	µg/L	0.39	<1.46	--	--	--	<1.46
3,3'-Dimethylbenzidine	µg/L	NS	<1.56	--	--	--	<1.56
3/4-Methylphenol	µg/L	70	<0.729	--	--	--	<0.729
3-Methylcholanthrene	µg/L	NS	<0.333	--	--	--	<0.333
3-Nitroaniline	µg/L	NS	<2.81	--	--	--	<2.81
4,6-Dinitro-2-methylphenol	µg/L	NS	<7.19	--	--	--	<7.19
4-Aminobiphenyl	µg/L	0.0083	<2.29	--	--	--	<2.29
4-Bromophenyl phenyl ether	µg/L	NS	<0.729	--	--	--	<0.729
4-Chloro-3-methylphenol	µg/L	700	<0.875	--	--	--	<0.875
4-Chloroaniline	µg/L	28	<0.646	--	--	--	<0.646
4-Chlorophenyl phenyl ether	µg/L	NS	<0.719	--	--	--	<0.719
4-Nitroaniline	µg/L	NS	<1.35	--	--	--	<1.35
4-Nitrophenol	µg/L	60	<7.92	--	--	--	<7.92
5-Nitro-o-toluidine	µg/L	NS	<2.92	--	--	--	<2.92
7,12-Dimethylbenz (a) anthracene	µg/L	NS	<1.98	--	--	--	<1.98
Acenaphthene	µg/L	420	<0.667	--	--	--	<0.667
Acenaphthylene	µg/L	210	<0.75	--	--	--	<0.75
Acetophenone	µg/L	NS	<0.719	--	--	--	<0.719
Anthracene	µg/L	2100	<0.906	--	--	--	<0.906
Benzo (a) anthracene	µg/L	0.24	<0.885	--	--	--	<0.885
Benzo (a) pyrene	µg/L	0.2	<8.44	--	--	--	<8.44
Benzo (b) fluoranthene	µg/L	0.24	<5.1	--	--	--	<5.1
Benzo (g,h,i) perylene	µg/L	21	<6.56	--	--	--	<6.56
Benzo (k) fluoranthene	µg/L	2.4	<2.29	--	--	--	<2.29
Benzyl alcohol	µg/L	700	<1.35	--	--	--	<1.35
Bis(2-chloroethoxy)methane	µg/L	NS	<0.792	--	--	--	<0.792
Bis(2-chloroethyl)ether	µg/L	0.16	<0.854	--	--	--	<0.854
Bis(2-chloroisopropyl) ether	µg/L	300	<0.563	--	--	--	<0.563
Bis(2-ethylhexyl)phthalate	µg/L	6	<5.73	--	--	--	<5.73
Butyl benzyl phthalate	µg/L	140	<5.63	--	--	--	<5.63
Chlorobenzilate	µg/L	NS	<3.75	--	--	--	<3.75
Chrysene	µg/L	24	<0.906	--	--	--	<0.906
Diallate (cis or trans)	µg/L	NS	<4.17	--	--	--	<4.17
Dibenzo (a,h) anthracene	µg/L	0.024	<4.06	--	--	--	<4.06
Dibenzofuran	µg/L	7	<0.771	--	--	--	<0.771
Diethyl phthalate	µg/L	5600	<1.77	--	--	--	<1.77
Dimethoate	µg/L	1.4	<3.75	--	--	--	<3.75
Dimethyl phthalate	µg/L	NS	<1.04	--	--	--	<1.04
Di-n-butyl phthalate	µg/L	700	<5.83	--	--	--	<5.83
Di-n-octyl phthalate	µg/L	140	<7.29	--	--	--	<7.29
Dinoseb	µg/L	7	<2.5	--	--	--	<2.5
Diphenylamine	µg/L	180	<6.25	--	--	--	<6.25
Disulfoton	µg/L	0.7	<2.5	--	--	--	<2.5
Ethyl Methanesulfonate	µg/L	NS	<3.75	--	--	--	<3.75
Famphur	µg/L	NS	<3.96	--	--	--	<3.96
Fluoranthene	µg/L	280	<1.77	--	--	--	<1.77
Fluorene	µg/L	280	<0.823	--	--	--	<0.823
Hexachlorobenzene	µg/L	1	<0.729	--	--	--	<0.729
Hexachlorobutadiene	µg/L	1	<0.896	--	--	--	<0.896
Hexachlorocyclopentadiene	µg/L	50	<5.31	--	--	--	<5.31
Hexachloroethane	µg/L	1	<1.01	--	--	--	<1.01
Hexachloropropene	µg/L	NS	<2.71	--	--	--	<2.71
Indeno (1,2,3-cd) pyrene	µg/L	0.24	<4.38	--	--	--	<4.38
Isodrin	µg/L	NS	<4.9	--	--	--	<4.9
Isophorone	µg/L	100	<0.969	--	--	--	<0.969
Isosafrole	µg/L	NS	<2.4	--	--	--	<2.4
Kepone	µg/L	NS	<1.04	--	--	--	<1.04
Methapyrilene	µg/L	NS	<0.792	--	--	--	<0.792
Methyl Methanesulfonate	µg/L	1.8	<3.44	--	--	--	<3.44
Nitrobenzene	µg/L	14	<0.833	--	--	--	<0.833
N-Nitrosodiethylamine	µg/L	NS	<3.54	--	--	--	<3.54
N-Nitrosodimethylamine	µg/L	0.0034	<0.75	--	--	--	<0.75
N-Nitrosodi-n-butylamine	µg/L	0.032	<4.06	--	--	--	<4.06
N-Nitrosodi-n-propylamine	µg/L	NS	<0.958	--	--	--	<0.958
N-Nitrosodiphenylamine	µg/L	36	<0.781	--	--	--	<0.781
N-Nitrosomethylethylamine	µg/L	0.008	<5.1	--	--	--	<5.1
N-Nitrosopiperidine	µg/L	NS	<2.81	--	--	--	<2.81
N-Nitrosopyrrolidine	µg/L	0.083	<3.75	--	--	--	<3.75
O,O,O-Triethyl phosphorothioate	µg/L	NS	<3.33	--	--	--	<3.33
o-Toluidine	µg/L	11	<3.02	--	--	--	<3.02
p-(Dimethylamino)azobenzene	µg/L	NS	<2.29	--	--	--	<2.29
Parathion-ethyl	µg/L	NS	<2.29	--	--	--	<2.29
Parathion-methyl	µg/L	1	<2.4	--	--	--	<2.4
Pentachlorobenzene	µg/L	NS	<2.92	--	--	--	<2.92
Pentachloronitrobenzene	µg/L	NS	<6.04	--	--	--	<6.04
Pentachlorophenol	µg/L	1	<10	--	--	--	<10
Phenacetin	µg/L	NS	<1.98	--	--	--	<1.98
Phenanthrene	µg/L	210	<0.823	--	--	--	<0.823
Phenol	µg/L	2000	<1.15	--	--	--	<1.15
Phorate	µg/L	1.4	<3.33	--	--	--	<3.33
Pronamide	µg/L	5	<2.81	--	--	--	<2.81
Pyrene	µg/L	210	<0.823	--	--	--	<0.823
Safrole	µg/L	NS	<2.92	--	--	--	<2.92
Thionazin	µg/L	NS	<3.65	--	--	--	<3.65
Volatile Organic Compounds							
1,1-Dichloropropene	µg/L	NS	<0.43	--	--	--	<0.43
1,2,4-Trichlorobenzene	µg/L	70	<0.75	--	--	--	<0.75
1,3-Dichlorobenzene	µg/L	600	<0.3	--	--	--	<0.3
1,3-Dichloropropane	µg/L	NS	<0.4	--	--	--	<0.4
2,2-Dichloropropane	µg/L	NS	<0.69	--	--	--	<0.69
Acrolein	µg/L	NS	<3.6	--	--	--	<3.6
Allyl chloride	µg/L	NS	<0.7	--	--	--	<0.7
Chloroprene	µg/L	NS	<0.23	--	--	--	<0.23
Dichlorodifluoromethane	µg/L	1000	***1.23 J***	--	--	--	***1.7 J***
Ethyl Methacrylate	µg/L	NS	<0.68	--	--	--	<0.68
Methacrylonitrile	µg/L	NS	<3.3	--	--	--	<3.3
Methyl Methacrylate	µg/L	NS	<0.76	--	--	--	<0.76
Naphthalene	µg/L	100	<3	--	--	--	***9.24***
Propionitrile	µg/L	NS	<3.4	--	--	--	<3.4

Detections at or above the RL are shown in bold italics on gray background.

Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.

NS = No standard

Black Hawk County Landfill
Appendix I Results
Monitoring Well OW-227B

Parameter Name	Units	GPS	Jan-23	Mar-23	Aug-23	Sep-23	Dec-23	May-24	Oct-24
Appendix I Inorganics									
Total Suspended Solids	mg/L	NS	***30***	***10.3***	***16***	***30***	***27***	***68***	***46***
Turbidity, Field	NTU	NS	***32.27***	***21.58***	***1.32***	***7.88***	***1.03***	***9.52***	***6.55***
Turbidity, Lab	NTU	NS	--	--	--	--	--	--	--
Antimony	µg/L	6	<0.69	<0.69	<1	<1	<1	<1	<1
Antimony, Dissolved	µg/L	NS	--	--	--	--	--	--	--
Arsenic	µg/L	10	***6.91***	***2.67***	***4.14***	***7.85***	***5.32***	***16.9***	***16.2***
Arsenic, Dissolved	µg/L	NS	--	--	--	--	--	--	--
Barium	µg/L	2000	***1330***	***1690***	***1740***	***1460***	***1560***	***1920***	***2080***
Barium, Dissolved	µg/L	NS	--	--	--	--	--	--	--
Beryllium	µg/L	4	<0.27	<0.27	<0.33	<0.33	<0.33	<0.33	<0.33
Beryllium, Dissolved	µg/L	NS	--	--	--	--	--	--	--
Cadmium	µg/L	5	***0.387***	***0.54***	***0.771***	***0.71***	***0.398***	***0.216***	***0.165 J***
Cadmium, Dissolved	µg/L	NS	--	--	--	--	--	--	--
Chromium	µg/L	100	***6.13***	***5.3***	***6.68***	***5.8***	***6.04***	***6.53***	***7.49***
Chromium, Dissolved	µg/L	NS	--	--	--	--	--	--	--
Cobalt	µg/L	9.83	***17.2***	***25.6***	***33***	***34.1***	***26.4***	***23.5***	***22.1***
Cobalt, Dissolved	µg/L	NS	--	--	--	--	--	--	--
Copper	µg/L	1300	***11.6***	***6.2***	***3.81 J***	***2.65 J***	***1.82 J***	<1.8	<1.8
Copper, Dissolved	µg/L	NS	--	--	--	--	--	--	--
Lead	µg/L	15	<0.24	<0.24	***0.464 J***	***0.388 J***	***0.465 J***	***0.659***	***0.582***
Lead, Dissolved	µg/L	NS	--	--	--	--	--	--	--
Nickel	µg/L	722	***73.5***	***90.1***	***98.9***	***76***	***83.6***	***78.4***	***87***
Nickel, Dissolved	µg/L	NS	--	--	--	--	--	--	--
Selenium	µg/L	50	***1.79 J***	***1.48 J***	<1.4	<1.4	<1.4	<1.4	<1.4
Selenium, Dissolved	µg/L	NS	--	--	--	--	--	--	--
Silver	µg/L	100	<0.49	<0.49	<0.5	<0.5	<0.5	<0.5	<0.5
Silver, Dissolved	µg/L	NS	--	--	--	--	--	--	--
Thallium	µg/L	2	<0.26	<0.26	<1.04	<0.26	<0.26	<0.57	***0.867 J***
Thallium, Dissolved	µg/L	NS	--	--	--	--	--	--	--
Vanadium	µg/L	35	***1.78 J***	***1.82 J***	***6.34 J***	***1.51 J***	***1.67 J***	***2.48 J***	***2.38 J***
Vanadium, Dissolved	µg/L	NS	--	--	--	--	--	--	--
Zinc	µg/L	2000	<10	<10	<6.4	<6.4	<6.4	<9.7	<9.7
Zinc, Dissolved	µg/L	NS	--	--	--	--	--	--	--
Appendix I Organics									
1,1,1,2-Tetrachloroethane	µg/L	70	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38
1,1,1-Trichloroethane	µg/L	200	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19
1,1,2,2-Tetrachloroethane	µg/L	0.3	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47
1,1,2-Trichloroethane	µg/L	5	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45
1,1-Dichloroethane	µg/L	140	***0.425 J***	***0.543 J***	<0.22	<0.22	***0.555 J***	***0.647 J***	***0.505 J***
1,1-Dichloroethylene	µg/L	7	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56
1,2,3-Trichloropropane	µg/L	0.0058	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59
1,2-Dibromo-3-chloropropane	µg/L	0.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2
1,2-Dibromoethane	µg/L	0.05	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34
1,2-Dichlorobenzene	µg/L	600	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37
1,2-Dichloroethane	µg/L	5	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39
1,2-Dichloropropane	µg/L	5	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27
1,4-Dichlorobenzene	µg/L	75	***0.45 J***	<0.23	<0.23	<0.23	***0.244 J***	***0.371 J***	<0.23
2-Butanone	µg/L	4000	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1
2-Hexanone	µg/L	NS	<2	<2	<2	<2	<2	<2	<2
4-Methyl-2-pentanone	µg/L	560	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1
Acetone	µg/L	6300	<3.1	<3.1	***5.57 J***	***8.32 J***	***6.19 J***	***8.33 J***	***9.25 J***
Acrylonitrile	µg/L	0.32	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2
Benzene	µg/L	5	***1.31***	***1.95***	***2.69***	***2.77***	***2.78***	***2.99***	***2.92***
Bromochloromethane	µg/L	90	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54
Bromodichloromethane	µg/L	80	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39
Bromomethane	µg/L	10	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Carbon disulfide	µg/L	700	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45
Carbon Tetrachloride	µg/L	5	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65
Chlorobenzene	µg/L	100	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Chloroethane	µg/L	2800	***2.03 J***	***1.22 J***	<0.79	<0.79	***1.11 J***	***0.804 J***	***0.805 J***
Chloromethane	µg/L	NS	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61
cis-1,2-Dichloroethylene	µg/L	70	<0.21	<0.21	<0.21	<0.21	***0.285 J***	<0.21	***0.242 J***
cis-1,3-Dichloropropene	µg/L	NS	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Dibromochloromethane	µg/L	80	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75
Dibromomethane	µg/L	70	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Dichloromethane	µg/L	5	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7
Ethylbenzene	µg/L	700	<0.31	<0.31	<0.31	***0.347 J***	<0.31	<0.31	<0.31
Iodomethane	µg/L	NS	<7	<7	<7	<7	<7	<7	<7
Styrene	µg/L	100	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37
Tetrachloroethylene	µg/L	5	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48
Toluene	µg/L	1000	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43
Trans-1,2-dichloroethylene	µg/L	100	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27
trans-1,3-Dichloropropene	µg/L	NS	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56
trans-1,4-Dichloro-2-butene	µg/L	1.8	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Tribromomethane	µg/L	80	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78
Trichloroethylene	µg/L	5	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43
Trichlorofluoromethane	µg/L	2000	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38
Trichloromethane	µg/L	80	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3
Vinyl Acetate	µg/L	NS	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Vinyl Chloride	µg/L	2	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18
Xylenes	µg/L	10000	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Detections at or above the RL are shown in bold italics on gray background.

Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.

NS = No standard

Black Hawk County Landfill
Appendix II Results
Monitoring Well OW-227B

Parameter Name	Units	GPS	Sep-23	Dec-23	May-24	Jul-24	Oct-24
Alcohols/Gycols by GC							
Acetonitrile	µg/L	NS	<570	--	--	--	<2600
Isobutanol	µg/L	2100	<550	--	--	--	<2400
Herbicides (GC)							
2,4,5-T	µg/L	70	<0.161	--	--	--	<0.713
2,4-D	µg/L	70	<0.344	--	--	--	<2.74
Silvex (2,4,5-TP)	µg/L	50	<0.0935	--	--	--	<0.241
Inorganics							
Cyanide	µg/L	200	<4.3	--	--	--	***4.98 J***
Mercury	µg/L	2	<0.14	--	--	--	<0.11
Sulfide	µg/L	NS	***1690***	***1240***	<1410	<1410	<1410
Tin	µg/L	4200	<2.3	--	--	--	<2.3
PCBs (EPA Method 8082)							
PCB-1016	µg/L	NS	<0.181	--	--	--	<0.721
PCB-1221	µg/L	NS	<0.181	--	--	--	<0.721
PCB-1232	µg/L	NS	<0.181	--	--	--	<0.721
PCB-1242	µg/L	NS	<0.181	--	--	--	<0.721
PCB-1248	µg/L	NS	<0.117	--	--	--	<0.607
PCB-1254	µg/L	NS	<0.117	--	--	--	<0.607
PCB-1260	µg/L	NS	<0.117	--	--	--	<0.607
Pesticides (EPA Method 8081A)							
4,4'-DDD	µg/L	0.73	<0.0287	--	--	--	<0.022
4,4'-DDE	µg/L	0.51	<0.0287	--	--	--	<0.0264
4,4'-DDT	µg/L	0.51	<0.0447	--	--	--	<0.0176
Aldrin	µg/L	0.01	<0.034	--	--	--	<0.0193
alpha-BHC	µg/L	0.028	<0.0309	--	--	--	<0.00879
beta-BHC	µg/L	0.042	<0.0394	--	--	--	<0.0369
Chlordane	µg/L	2	<0.862	--	--	--	<0.343
delta-BHC	µg/L	2.1	<0.0287	--	--	--	<0.0281
Dieldrin	µg/L	0.011	<0.0277	--	--	--	<0.0185
Endosulfan I	µg/L	42	<0.0351	--	--	--	<0.0246
Endosulfan II	µg/L	42	<0.0309	--	--	--	<0.0229
Endosulfan sulfate	µg/L	NS	<0.0319	--	--	--	<0.0158
Endrin	µg/L	2	<0.0277	--	--	--	<0.0246
Endrin aldehyde	µg/L	2.1	<0.0309	--	--	--	<0.0237
gamma-BHC (Lindane)	µg/L	0.2	<0.0383	--	--	--	<0.00879
Heptachlor	µg/L	0.4	<0.0351	--	--	--	<0.0202
Heptachlor epoxide	µg/L	0.2	<0.0309	--	--	--	<0.0281
Methoxychlor	µg/L	40	<0.0436	--	--	--	<0.0281
Toxaphene	µg/L	3	<0.734	--	--	--	<0.879
Semivolatile Organics by GC/MS							
1,2,4,5-Tetrachlorobenzene	µg/L	2.1	<0.509	--	--	--	<0.563
1,3,5-Trinitrobenzene	µg/L	NS	<2.17	--	--	--	<2.4
1,3-Dinitrobenzene	µg/L	1	<3.02	--	--	--	<3.33
1,4-Naphthoquinone	µg/L	NS	<3.4	--	--	--	<3.75
1,4-Phenylenediamine	µg/L	NS	<1.79	--	--	--	<1.98
1-Naphthylamine	µg/L	NS	<2.36	--	--	--	<2.6
2,3,4,6-Tetrachlorophenol	µg/L	NS	<5	--	--	--	<5.52
2,4,5-Trichlorophenol	µg/L	700	<5	--	--	--	<5.52
2,4,6-Trichlorophenol	µg/L	16	<4.72	--	--	--	<5.21
2,4-Dichlorophenol	µg/L	20	<0.802	--	--	--	<0.885
2,4-Dimethylphenol	µg/L	100	<0.547	--	--	--	<0.604
2,4-Dinitrophenol	µg/L	14	<12.3	--	--	--	<13.5
2,4-Dinitrotoluene	µg/L	0.25	<6.04	--	--	--	<6.67
2,6-Dichlorophenol	µg/L	NS	<0.651	--	--	--	<0.719
2,6-Dinitrotoluene	µg/L	0.26	<0.491	--	--	--	<0.542
2-Acetylaminofluorene	µg/L	NS	<2.55	--	--	--	<2.81
2-Chloronaphthalene	µg/L	560	<0.604	--	--	--	<0.667
2-Chlorophenol	µg/L	40	<0.509	--	--	--	<0.563
2-Methylnaphthalene	µg/L	28	<0.557	--	--	--	<0.615
2-Methylphenol (o-Cresol)	µg/L	35	<0.613	--	--	--	<0.677
2-Naphthylamine	µg/L	0.097	<1.98	--	--	--	<2.19
2-Nitroaniline	µg/L	NS	<5.57	--	--	--	<6.15
2-Nitrophenol	µg/L	NS	<6.42	--	--	--	<7.08
3,3'-Dichlorobenzidine	µg/L	0.39	<1.32	--	--	--	<1.46
3,3'-Dimethylbenzidine	µg/L	NS	<1.42	--	--	--	<1.56
3/4-Methylphenol	µg/L	70	<0.66	--	--	--	<0.729
3-Methylcholanthrene	µg/L	NS	<0.302	--	--	--	<0.333
3-Nitroaniline	µg/L	NS	<2.55	--	--	--	<2.81
4,6-Dinitro-2-methylphenol	µg/L	NS	<6.51	--	--	--	<7.19
4-Aminobiphenyl	µg/L	0.0083	<2.08	--	--	--	<2.29
4-Bromophenyl phenyl ether	µg/L	NS	<0.66	--	--	--	<0.729
4-Chloro-3-methylphenol	µg/L	700	<0.792	--	--	--	<0.875
4-Chloroaniline	µg/L	28	<0.585	--	--	--	<0.646
4-Chlorophenyl phenyl ether	µg/L	NS	<0.651	--	--	--	<0.719
4-Nitroaniline	µg/L	NS	<1.23	--	--	--	<1.35
4-Nitrophenol	µg/L	60	<7.17	--	--	--	<7.92
5-Nitro-o-toluidine	µg/L	NS	<2.64	--	--	--	<2.92
7,12-Dimethylbenz (a) anthracene	µg/L	NS	<1.79	--	--	--	<1.98
Acenaphthene	µg/L	420	<0.604	--	--	--	<0.667
Acenaphthylene	µg/L	210	<0.679	--	--	--	<0.75
Acetophenone	µg/L	NS	<0.651	--	--	--	<0.719
Anthracene	µg/L	2100	<0.821	--	--	--	<0.906
Benzo (a) anthracene	µg/L	0.24	<0.802	--	--	--	<0.885
Benzo (a) pyrene	µg/L	0.2	<7.64	--	--	--	<8.44
Benzo (b) fluoranthene	µg/L	0.24	<4.62	--	--	--	<5.1
Benzo (g,h,i) perylene	µg/L	21	<5.94	--	--	--	<6.56
Benzo (k) fluoranthene	µg/L	2.4	<2.08	--	--	--	<2.29
Benzyl alcohol	µg/L	700	<1.23	--	--	--	<1.35
Bis(2-chloroethoxy)methane	µg/L	NS	<0.717	--	--	--	<0.792
Bis(2-chloroethyl)ether	µg/L	0.16	<0.774	--	--	--	<0.854
Bis(2-chloroisopropyl) ether	µg/L	300	<0.509	--	--	--	<0.563
Bis(2-ethylhexyl)phthalate	µg/L	6	<5.19	--	--	--	<5.73
Butyl benzyl phthalate	µg/L	140	<5.09	--	--	--	<5.63
Chlorobenzilate	µg/L	NS	<3.4	--	--	--	<3.75
Chrysene	µg/L	24	<0.821	--	--	--	<0.906
Diallate (cis or trans)	µg/L	NS	<3.77	--	--	--	<4.17
Dibenzo (a,h) anthracene	µg/L	0.024	<3.68	--	--	--	<4.06
Dibenzofuran	µg/L	7	<0.698	--	--	--	<0.771
Diethyl phthalate	µg/L	5600	<1.6	--	--	--	<1.77
Dimethoate	µg/L	1.4	<3.4	--	--	--	<3.75
Dimethyl phthalate	µg/L	NS	<0.943	--	--	--	<1.04
Di-n-butyl phthalate	µg/L	700	<5.28	--	--	--	<5.83
Di-n-octyl phthalate	µg/L	140	<6.6	--	--	--	<7.29
Dinoseb	µg/L	7	<2.26	--	--	--	<2.5
Diphenylamine	µg/L	180	<5.66	--	--	--	<6.25
Disulfoton	µg/L	0.7	<2.26	--	--	--	<2.5
Ethyl Methanesulfonate	µg/L	NS	<3.4	--	--	--	<3.75
Famphur	µg/L	NS	<3.58	--	--	--	<3.96
Fluoranthene	µg/L	280	<1.6	--	--	--	<1.77
Fluorene	µg/L	280	<0.745	--	--	--	<0.823
Hexachlorobenzene	µg/L	1	<0.66	--	--	--	<0.729
Hexachlorobutadiene	µg/L	1	<0.811	--	--	--	<0.896
Hexachlorocyclopentadiene	µg/L	50	<4.81	--	--	--	<5.31
Hexachloroethane	µg/L	1	<0.915	--	--	--	<1.01
Hexachloropropene	µg/L	NS	<2.45	--	--	--	<2.71
Indeno (1,2,3-cd) pyrene	µg/L	0.24	<3.96	--	--	--	<4.38
Isodrin	µg/L	NS	<4.43	--	--	--	<4.9
Isophorone	µg/L	100	<0.877	--	--	--	<0.969
Isosafrole	µg/L	NS	<2.17	--	--	--	<2.4
Kepone	µg/L	NS	<0.943	--	--	--	<1.04
Methapyrilene	µg/L	NS	<0.717	--	--	--	<0.792
Methyl Methanesulfonate	µg/L	1.8	<3.11	--	--	--	<3.44
Nitrobenzene	µg/L	14	<0.755	--	--	--	<0.833
N-Nitrosodiethylamine	µg/L	NS	<3.21	--	--	--	<3.54
N-Nitrosodimethylamine	µg/L	0.0034	<0.679	--	--	--	<0.75
N-Nitrosodi-n-butylamine	µg/L	0.032	<3.68	--	--	--	<4.06
N-Nitrosodi-n-propylamine	µg/L	NS	<0.868	--	--	--	<0.958
N-Nitrosodiphenylamine	µg/L	36	<0.708	--	--	--	<0.781
N-Nitrosomethylethylamine	µg/L	0.008	<4.62	--	--	--	<5.1
N-Nitrosopiperidine	µg/L	NS	<2.55	--	--	--	<2.81
N-Nitrosopyrrolidine	µg/L	0.083	<3.4	--	--	--	<3.75
O,O,O-Triethyl phosphorothioate	µg/L	NS	<3.02	--	--	--	<3.33
o-Toluidine	µg/L	11	<2.74	--	--	--	<3.02
p-(Dimethylamino)azobenzene	µg/L	NS	<2.08	--	--	--	<2.29
Parathion-ethyl	µg/L	NS	<2.08	--	--	--	<2.29
Parathion-methyl	µg/L	1	<2.17	--	--	--	<2.4
Pentachlorobenzene	µg/L	NS	<2.64	--	--	--	<2.92
Pentachloronitrobenzene	µg/L	NS	<5.47	--	--	--	<6.04
Pentachlorophenol	µg/L	1	<9.06	--	--	--	<10
Phenacetin	µg/L	NS	<1.79	--	--	--	<1.98
Phenanthrene	µg/L	210	<0.745	--	--	--	<0.823
Phenol	µg/L	2000	<1.04	--	--	--	<1.15
Phorate	µg/L	1.4	<3.02	--	--	--	<3.33
Pronamide	µg/L	5	<2.55	--	--	--	<2.81
Pyrene	µg/L	210	<0.745	--	--	--	<0.823
Safrole	µg/L	NS	<2.64	--	--	--	<2.92
Thionazin	µg/L	NS	<3.3	--	--	--	<3.65
Volatile Organic Compounds							
1,1-Dichloropropene	µg/L	NS	<0.43	--	--	--	<0.43
1,2,4-Trichlorobenzene	µg/L	70	<0.75	--	--	--	<0.75
1,3-Dichlorobenzene	µg/L	600	<0.3	--	--	--	<0.3
1,3-Dichloropropane	µg/L	NS	<0.4	--	--	--	<0.4
2,2-Dichloropropane	µg/L	NS	<0.69	--	--	--	<0.69
Acrolein	µg/L	NS	<3.6	--	--	--	<3.6
Allyl chloride	µg/L	NS	<0.7	--	--	--	<0.7
Chloroprene	µg/L	NS	<0.23	--	--	--	<0.23
Dichlorodifluoromethane	µg/L	1000	<0.25	--	--	--	<0.25
Ethyl Methacrylate	µg/L	NS	<0.68	--	--	--	<0.68
Methacrylonitrile	µg/L	NS	<3.3	--	--	--	<3.3
Methyl Methacrylate	µg/L	NS	<0.76	--	--	--	<0.76
Naphthalene	µg/L	100	<3	--	--	--	<3
Propionitrile	µg/L	NS	<3.4	--	--	--	<3.4

Detections at or above the RL are shown in bold italics on gray background.

Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.

NS = No standard

Black Hawk County Landfill
Appendix I Results
Monitoring Well MW-319B

Parameter Name	Units	GPS	Sep-08	Dec-08	Feb-09	May-09	Aug-09	Nov-09	Mar-10	May-10	Jul-10	Sep-10	Feb-11	May-11	Aug-11	Nov-11	May-12	Dec-12	Apr-13	Oct-13	Mar-14	Sep-14	Mar-15	Sep-15	Mar-16	Sep-16	Mar-17	Sep-17	Mar-18	Aug-18	Dec-18	Apr-19	Sep-19	Mar-20	Sep-20	Mar-21	Nov-21	Apr-22	Oct-22	Apr-23	Sep-23	May-24	Oct-24
Appendix I Inorganics																																											
Total Suspended Solids	mg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<1.26	<1.6	<1.2	<0.581	***0.75 J***	***1 J***	***3.13***	***1 J***	***2.5***	***1 J***	<0.638	***1.88***	***1 J***	***1.5 J***	***1.25 J***	***2.38***	***1.75 J***	***0.75 J***	<1.7	***1.63 J***	***4.75***	***1.5 J***
Turbidity, Field	NTU	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	***0.6806***	***1.97***	***3.149***	***5.92***	***6.104***	***0.4582***	***1.952***	***3.445***	***4.879***	***2.34***	***3.54***	***7.69***	***0.69***	***1.81***	0	***1.89***	***3.58***	***0.16***	***1.03***	***2.88***	***6.36***	***1.94***
Turbidity, Lab	NTU	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.6	***1.4***	<0.7	<0.4	***0.6 J***	***0.6 J***	***3.1***	***0.6 J***	***1.9***	***1.8***	***1.7***	***2.59***	***0.68 J***	--	--	--	--	--	--	--	--	--	--
Antimony	µg/L	6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<2.73	<0.584	<0.584	<0.271	<0.4	<0.4	***0.202 J***	<0.161	***0.169 J***	<0.237	<0.237	<0.185	<0.185	<0.42	<0.42	--	<0.53	<0.53	<0.58	<0.51	<1.1	<1.1	***0.774 J***	<0.69	<1	<1	<1	<1
Antimony, Dissolved	µg/L	NS	--	--	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<2.73	<0.584	<0.584	<0.271	<0.4	<0.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	<1	***6.08***	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<0.6	<0.185	<0.185	<2.72	<0.33	***0.555 J***	<0.945	<0.945	<0.945	<0.672	<0.672	<0.505	<0.505	<0.57	<0.57	--	<0.75	<0.75	<0.88	<0.88	<0.75	<0.75	<0.75	<0.53	<0.53	<0.53	***1.11 J***
Arsenic, Dissolved	µg/L	NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<2	<0.47	<0.185	<0.185	<2.72	<0.33	<0.33	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	***220***	***227***	***223***	***184***	***154***	***180***	***173***	***165***	***181***	***179***	***171***	***174***	***172***	***181***	***243***	***276***	***197***	***228***	***277***	***165***	***67.6***	***161***	***198***	***199***	***231***	***204***	***208***	***226***	--	***252***	***247***	***212***	***201***	***226***	***248***	***139***	***247***	***214***	***184***	***223***	***211***
Barium, Dissolved	µg/L	NS	***220***	***223***	***225***	***172***	***163***	***171***	***158***	***173***	***185***	***188***	***155***	***179***	***154***	***158***	***235***	***264***	***157***	***211***	***259***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.051	<0.169	<0.169	<0.348	<0.08	<0.08	<0.039	<0.039	<0.039	<0.221	<0.221	<0.125	<0.125	<0.19	<0.19	--	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.33	<0.33	<0.33	<0.33
Beryllium, Dissolved	µg/L	NS	--	--	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	***0.056 J***	<0.169	<0.169	<0.348	<0.08	<0.08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	***0.132 J***	<0.195	<0.195	<0.53	<0.1	<0.1	<0.112	<0.112	<0.112	<0.0351	<0.0351	<0.0441	<0.0441	<0.06	<0.06	--	<0.077	<0.039	<0.039	<0.049	<0.051	<0.051	<0.055	<0.055	<0.1	<0.1	<0.1	<0.1
Cadmium, Dissolved	µg/L	NS	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.124	<0.195	<0.195	<0.53	<0.1	<0.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	<20	<20	<20	<20	<20	<20	***55.6***	***21***	***108***	<20	***579***	***50.9***	<20	<20	<1.81	***5.38 J***	***85.5***	***2.24 J***	***2.69***	***2920***	***3.88 J***	<1.24	***7.14***	***2.06 J***	***1.14 J***	***1.01 J***	***3.44 J***	<0.76	***9.06***	***0.76***	***1.35 J***	***2.83 J***	***9.13***	***10.9***	***7.08***	***19.2***	***15.6***	***27***	***13.4***	***17.1***	***12.3***	***15.2***
Chromium, Dissolved	µg/L	NS	<2	<2	<2	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<1.81	***2.3 J***	***2.33 J***	<2.09	<0.5	***1.45 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	9.83	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<1.55	<1.55	***10.1 J***	***1.25 J***	***0.285 J***	***9.83***	***0.097 J***	***0.054 J***	***0.117 J***	***0.035 J***	***0.198 J***	***0.077 J***	***0.248 J***	***1.04***	***0.737***	--	***2.89***	***1.95***	***0.124 J***	***0.134 J***	***0.102 J***	***0.302 J***	***0.452 J***	<0.19	***0.253 J***	***0.446 J***	<0.17	***0.296 J***
Cobalt, Dissolved	µg/L	NS	--	--	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<1.55	<1.55	***2.36 J***	<0.277	<0.054	***0.563 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	1300	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<1.51	***7.54 J***	***11 J***	***5.59***	***5.12***	***13.7***	***1.77 J***	<0.485	<0.485	<1.22	<1.22	<2.19	<2.19	<1.6	<1.6	--	<2	***3.89 J***	<3.2	***1.66 J***	<1.4	***1.81 J***	***2.14 J***	***2.52 J***	<1.8	<1.8	<1.8	<1.8
Copper, Dissolved	µg/L	NS	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	***5.23 J***	<1.51	***2.49 J***	***1.84 J***	***0.877 J***	***0.582 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<1	***1.13 J***	<0.821	<1.04	***0.204 J***	***0.323 J***	<0.0967	<0.0967	***0.123 J***	<0.211	<0.211	<0.324	<0.324	<0.25	<0.25	--	<0.27	<0.27	<0.27	<0.11	<0.21	<0.21	<0.24	<0.24	<0.24	<0.24	<0.26	***0.278 J***
Lead, Dissolved	µg/L	NS	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<1	<0.821	<0.821	<1.04	<0.18	<0.18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	µg/L	722	<50	<50	<50	***50.1***	<50	<50	***105***	***163***	***141***	<50	***61.7***	***55.8***	<50	***36.7 J***	***60.2***	***693***	***70.2***	***52.2***	***722***	***64.4***	***17.7***	***52.7***	***49.3***	***71.4***	***46.2***	***47.8***	***344***	***210***	***399***	***223***	***229***	***81***	***56.9***	***59.3***	***52.1***	***47.9***	***57.4***	***64.8***	***39***	***60.2***	***38.4***
Nickel, Dissolved	µg/L	NS	--	--	<50	***57***	***62.3***	<50	***103***	***162***	***132***	***100***	<50	***62.9***	<50	***25.8 J***	***55.3***	***213***	***48.3***	***51.9***	***140***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<1.69	<1.83	<1.83	<7.3	<0.7	<0.7	<3.34	<3.34	<3.34	***0.809 J***	<0.63	<0.928	<0.928	<0.9	<0.9	--	<1	<1	<1	<1	<0.96	***1 J***	<0.96	***0.986 J***	<1.4	<1.4	<1.4	***2.61 J***
Selenium, Dissolved	µg/L	NS	--	--	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<1.69	<1.83	<1.83	<7.3	<0.7	<0.7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	µg/L	100	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<1.7	<1.7	<1.7	<1.7	<0.395	<0.033	<0.033	<0.042	<0.042	***0.108 J***	<0.153	<0.153	<0.14	<0.14	<0.3	<0.3	--	<0.37	<0.37	<0.37	<0.37	<0.42	<0.42	<0.49	<0.49	<0.5	<0.5	<0.5	<0.5
Silver, Dissolved	µg/L	NS	--	--	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<1.7	<1.7	<1.7	<1.7	<0.395	<0.033	<0.033	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<0.84	<0.523	<0.523	<0.134	<0.05	<0.05	<0.0325	<0.0325	<0.0325	<0.0255	<0.0255	<0.0644	<0.0644	<0.17	<0.17	--	<0.27	<0.27	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.57	<0.57
Thallium, Dissolved	µg/L	NS	--	--	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<0.84	<0.523	<0.523	<0.134	<0.05	<0.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium	µg/L	35	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<2.1	***3.38 J***	<2.1	<4.17	***1.25 J***	***97.5***	***0.754 J***	***0.576 J***	***0.936 J***	***0.448 J***	***0.641 J***	<0.84	<0.84	***0.653 J***	***0.828 J***	--	<0.82	***1.05 J***	<0.82	<0.85	<1.1	<1.1	<1.1	<1.1	<1.1	***1.27 J***	
Vanadium, Dissolved	µg/L	NS	--	--	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<2.1	***4.17 J***	<2.1	<4.17	***0.688 J***	***0.629 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	2000	***21***	<20	***23.1***	<20	***28.8***	<20	***34.3***	<20	***20.6***	<20	<20	<20	<20	<9.11	***11.4 J***	***11.1 J***	<3.13	***5.32 J***	***3.45 J***	***7.54 J***	<6.95	<6.95	<5.21	<5.21	<11.5	<11.5	<10	<10	--	<10	<10	<10	<10	<10	<10	<10	<10	<6.4	<6.4	<9.7	<9.7
Zinc, Dissolved	µg/L	NS	<20	<20	<20	<20	***25.9***	<20	***29.4***	<20	<20	<20	***22.7***	<20	<20	<9.11	<9.11	***9.47 J***	<3.13	***5.64 J***	<2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Appendix I Organics																																											
1,1,1,2-Tetrachloroethane	µg/L	70	<1	<1	<1	<1	<1	<1	<1	<4	<1	<5	<1	<1	<1	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.38	--	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38
1,1,1-Trichloroethane	µg/L	200	<1	<1	<1	<1	<1	<1	<1	<4	<1	<1	<1	<1	<1	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.19	--	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19
1,1,2,2-Tetrachloroethane	µg/L	0.3	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.47	--	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47
1,1,2-Trichloroethane	µg/L	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.45	--	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45
1,1-Dichloroethane	µg/L	140	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.22	--	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22
1,1-Dichloroethylene	µg/L	7	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.56	--	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56
1,2,3-Trichloropropane	µg/L	0.0058	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.59	--	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59
1,2-Dibromo-3-chloropropane	µg/L	0.2	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.5	<0.5	<0.5	<0.5	<0.5	<1.2	--	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2
1,2-Dibromoethane	µg/L	0.05	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.34	--	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34
1,2-Dichlorobenzene	µg/L	600	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.37	--	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37
1,2-Dichloroethane	µg/L	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.39	--	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39
1,2-Dichloropropane	µg/L	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.27	--	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27
1,4-Dichlorobenzene	µg/L	75	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.23	--	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23
2-Butanone	µg/L	4000	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.47	***0.78 J***	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<1.04	<1.04	<2.1	--	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1
2-Hexanone	µg/L	NS	<10	<10	<10	<10	<10	<10	<10	<20	<10	<10	<10	<10	<10	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	--	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
4-Methyl-2-pentanone	µg/L	560	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.22	***0.54 J***	***0.94 J***	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<2.1	--	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1
Acetone	µg/L	6300	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<1.79	<1.79	***5.04 J***	<1.79	<1.79	<1.79	<1.79	<1.79	<1.79	<1.79	***2.13 J***	<1.79	***2.11 J***	***2.35 J***	<3.1	--	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1
Acrylonitrile	µg/L	0.32	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<2.2	--	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2
Benzene	µg/L	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.22	--	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22
Bromochloromethane	µg/L	90	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.54	--	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54
Bromodichloromethane	µg/L	80	<1	<1	<1	<1	<1	<1	<1	<4	<1	<1	<1	<1	<1	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.39	--	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39
Bromomethane	µg/L	10	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<1.1	--	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Carbon disulfide	µg/L	700	<1	<1	<1	<1	<1	<1	<1	<4	<5	<10	<1	<1	<1	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.45	--	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45
Carbon Tetrachloride	µg/L	5	<2	<2	<2	<2	<2	<2	<2	<4	<5	<5	<2	<2	<2	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.65	--	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65
Chlorobenzene	µg/L	100	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.4	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Chloroethane	µg/L	2800	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<0.15	<0.15	***0.19 J***	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.79	--	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79
Chloromethane	µg/L	NS	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.61	--	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61
cis-1,2-Dichloroethylene	µg/L	70	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.21	--	<0.21	***0.521 J***	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21
cis-1,3-Dichloropropene	µg/L	NS	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<5	<5	<5	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.25	--	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Dibromochloromethane	µg/L	80	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.75	--	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75
Dibromomethane	µg/L	70	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.33	--	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Dichloromethane	µg/L	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<0.17	<0.17	<0.17	<0.17	<0.17	***0.725 J***	<0.17	<0.17	<0.17	<0.17	***0.473 J***	***0.369 J***	<0.17	<0.17	<1.7	--	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7
Ethylbenzene	µg/L	700	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.31	--	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31
Iodomethane	µg/L	NS	<10	<10

Black Hawk County Landfill
Appendix I Results
Monitoring Well MW-320B

Parameter Name	Units	GPS	May-24	Oct-24
Appendix I Inorganics				
Total Suspended Solids	mg/L	NS	***5.13***	***3.38***
Turbidity, Field	NTU	NS	***19.41***	***10.84***
Turbidity, Lab	NTU	NS	--	--
Antimony	µg/L	6	<1	<1
Antimony, Dissolved	µg/L	NS	--	--
Arsenic	µg/L	10	<0.53	***0.57 J***
Arsenic, Dissolved	µg/L	NS	--	--
Barium	µg/L	2000	***235***	***244***
Barium, Dissolved	µg/L	NS	--	--
Beryllium	µg/L	4	<0.33	<0.33
Beryllium, Dissolved	µg/L	NS	--	--
Cadmium	µg/L	5	<0.1	<0.1
Cadmium, Dissolved	µg/L	NS	--	--
Chromium	µg/L	100	***83.3***	***27.7***
Chromium, Dissolved	µg/L	NS	--	--
Cobalt	µg/L	9.83	***0.635***	***0.63***
Cobalt, Dissolved	µg/L	NS	--	--
Copper	µg/L	1300	***2.38 J***	***1.98 J***
Copper, Dissolved	µg/L	NS	--	--
Lead	µg/L	15	<0.26	<0.26
Lead, Dissolved	µg/L	NS	--	--
Nickel	µg/L	722	***31.6***	***19.7***
Nickel, Dissolved	µg/L	NS	--	--
Selenium	µg/L	50	<1.4	<1.4
Selenium, Dissolved	µg/L	NS	--	--
Silver	µg/L	100	<0.5	<0.5
Silver, Dissolved	µg/L	NS	--	--
Thallium	µg/L	2	<0.57	<0.57
Thallium, Dissolved	µg/L	NS	--	--
Vanadium	µg/L	35	***1.1 J***	***1.38 J***
Vanadium, Dissolved	µg/L	NS	--	--
Zinc	µg/L	2000	<9.7	<9.7
Zinc, Dissolved	µg/L	NS	--	--
Appendix I Organics				
1,1,1,2-Tetrachloroethane	µg/L	70	<0.38	<0.38
1,1,1-Trichloroethane	µg/L	200	<0.19	<0.19
1,1,2,2-Tetrachloroethane	µg/L	0.3	<0.47	<0.47
1,1,2-Trichloroethane	µg/L	5	<0.45	<0.45
1,1-Dichloroethane	µg/L	140	<0.22	<0.22
1,1-Dichloroethylene	µg/L	7	<0.56	<0.56
1,2,3-Trichloropropane	µg/L	0.0058	<0.59	<0.59
1,2-Dibromo-3-chloropropane	µg/L	0.2	<1.2	<1.2
1,2-Dibromoethane	µg/L	0.05	<0.34	<0.34
1,2-Dichlorobenzene	µg/L	600	<0.37	<0.37
1,2-Dichloroethane	µg/L	5	<0.39	<0.39
1,2-Dichloropropane	µg/L	5	<0.27	<0.27
1,4-Dichlorobenzene	µg/L	75	<0.23	<0.23
2-Butanone	µg/L	4000	<2.1	<2.1
2-Hexanone	µg/L	NS	<2	<2
4-Methyl-2-pentanone	µg/L	560	<2.1	<2.1
Acetone	µg/L	6300	<3.1	<3.1
Acrylonitrile	µg/L	0.32	<2.2	<2.2
Benzene	µg/L	5	<0.22	<0.22
Bromochloromethane	µg/L	90	<0.54	<0.54
Bromodichloromethane	µg/L	80	<0.39	<0.39
Bromomethane	µg/L	10	<1.1	<1.1
Carbon disulfide	µg/L	700	<0.45	<0.45
Carbon Tetrachloride	µg/L	5	<0.65	<0.65
Chlorobenzene	µg/L	100	<0.4	<0.4
Chloroethane	µg/L	2800	<0.79	<0.79
Chloromethane	µg/L	NS	<0.61	<0.61
cis-1,2-Dichloroethylene	µg/L	70	<0.21	<0.21
cis-1,3-Dichloropropene	µg/L	NS	<0.25	<0.25
Dibromochloromethane	µg/L	80	<0.75	<0.75
Dibromomethane	µg/L	70	<0.33	<0.33
Dichloromethane	µg/L	5	<1.7	<1.7
Ethylbenzene	µg/L	700	<0.31	<0.31
Iodomethane	µg/L	NS	<7	<7
Styrene	µg/L	100	<0.37	<0.37
Tetrachloroethylene	µg/L	5	<0.48	<0.48
Toluene	µg/L	1000	<0.43	<0.43
Trans-1,2-dichloroethylene	µg/L	100	<0.27	<0.27
trans-1,3-Dichloropropene	µg/L	NS	<0.56	<0.56
trans-1,4-Dichloro-2-butene	µg/L	1.8	<1.1	<1.1
Tribromomethane	µg/L	80	<0.78	<0.78
Trichloroethylene	µg/L	5	<0.43	<0.43
Trichlorofluoromethane	µg/L	2000	<0.38	<0.38
Trichloromethane	µg/L	80	<1.3	<1.3
Vinyl Acetate	µg/L	NS	<2.5	<2.5
Vinyl Chloride	µg/L	2	<0.18	<0.18
Xylenes	µg/L	10000	***0.404 J***	<0.4

Detections at or above the RL are shown in bold italics on gray background.

Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.

NS = No standard

Black Hawk County Landfill
Appendix I Results
Monitoring Well OW-401B

Parameter Name	Units	GPS	Sep-10	Feb-11	Mar-11	May-11	Jun-11	Aug-11	Nov-11	Feb-12	May-12	Dec-12	Apr-13	Oct-13	Apr-14	Aug-14	Mar-15	Aug-15	Mar-16	Oct-16	Dec-16	Apr-17	Sep-17	Apr-18	Sep-18	Apr-19	Oct-19	Apr-20	Oct-20	Apr-21	Jun-21	Nov-21	Apr-22	Nov-22	Mar-23	Sep-23	May-24	Jul-24	Oct-24
Appendix I Inorganics																																							
Total Suspended Solids	mg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	***77***	***68.7***	***56.9***	***89.8***	***74***	***77.9***	***83.1***	***58.5***	***56.1***	***86***	***92***	***64.7***	***68***	***72***	***26***	--	***90***	***102***	***85***	***48***	***76***	***76***	***73***	***77***
Turbidity, Field	NTU	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	***2.665***	***2.087***	***4.091***	***3.148***	***1.788***	***9.256***	***1.462***	***3.131***	***1.581***	***7.112***	***20.15***	***0.85***	***5.09***	***2.58***	***2.94***	***14.55***	***0.6***	0	0	***8.59***	***2.09***	***3.37***	***7.54***	***8.38***
Turbidity, Lab	NTU	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	***165***	***253***	***600***	***211***	***397***	***113***	***299***	***164***	***177***	***710***	***313***	***191***	***175***	--	--	--	--	--	--	--	--	--	--	--
Antimony	µg/L		<6	<6	<6	***6.3***	<6	***6.88***	<2.73	***0.27 J***	***8.91***	<0.584	<0.271	<0.4	<0.4	<0.161	<0.161	<0.161	<0.237	<0.237	<0.237	<0.185	***0.239 J***	<0.42	<0.42	<0.53	<0.53	<0.58	<0.51	<1.1	--	<1.1	<0.69	<0.69	<2.76	<1	<1	--	<1
Antimony, Dissolved	µg/L	NS	<6	<6	<6	<6	<6	<6	<2.73	***0.14 J***	***8.88***	<0.584	<0.271	<0.4	<0.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L		10	<10	***1.04***	<5	<6	<4	<4	<0.6	***7.54***	***0.62 J***	***1.08 J***	***7.45***	***6.04***	***6.42***	***8.94***	***9.13***	***10***	***8.98***	***13.1***	***12.7***	***11.5***	***12.6***	***11.6***	***10.5***	***12***	***11.7***	***12.8***	***14.3***	***13.7***	--	***10.6***	***10.4***	***7.2***	***5.96 J***	***4.75***	***5.67***	***7.25***	***8.77***
Arsenic, Dissolved	µg/L	NS	<1	<1	<3	<6	***9.84***	<1	<0.47	***7.14***	<0.37	***2.39***	***5.37***	***5.92***	***6.13***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	µg/L		2000	***220***	***462***	***167***	***373***	***198***	***209***	***183***	***256***	***214***	***256***	***207***	***283***	***235***	***312***	***280***	***307***	***317***	***442***	***441***	***427***	***775***	***575***	***591***	***870***	***1160***	***1650***	***1620***	***1800***	--	***1490***	***1300***	***1110***	***1230***	***1140***	***1710***	--	***1760***
Barium, Dissolved	µg/L	NS	***208***	***197***	***241***	***209***	***188***	***199***	***173***	***236***	***205***	***247***	***183***	***245***	***224***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	<1	<1	<1	<1	<1	<1	<0.051	***0.22 J***	<0.169	<0.169	<0.348	***0.167 J***	<0.08	<0.039	<0.039	<0.039	<0.221	<0.221	<0.221	<0.125	<0.125	<0.19	<0.19	<0.27	<0.27	<0.27	<0.27	<0.27	--	<0.27	<0.27	<0.27	<1.08	<0.33	<0.33	--	<0.33
Beryllium, Dissolved	µg/L	NS	<1	<1	<1	<1	<1	<1	<0.051	<0.0178	<0.169	<0.169	<0.348	***0.374 J***	<0.08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	<0.5	***0.51***	***0.964***	<0.5	<0.5	<0.5	***0.149 J***	***0.44 J***	<0.195	<0.195	<0.53	***0.147 J***	<0.1	<0.112	<0.112	<0.112	<0.0351	<0.0351	<0.0351	<0.0441	<0.0441	<0.06	<0.06	<0.077	<0.039	<0.039	***0.076 J***	***0.068 J***	--	<0.051	<0.055	<0.055	<0.22	<0.1	<0.1	--	<0.1
Cadmium, Dissolved	µg/L	NS	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.124	***0.25 J***	<0.195	<0.195	<0.53	<0.1	<0.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	<20	***22***	<20	<20	<20	<20	***28.1***	***3.33***	***9.8 J***	***10.3 J***	<2.09	***6.56***	***2.24***	***1.89 J***	***1.32 J***	***1.3 J***	***1.64 J***	***1.1 J***	***1.68 J***	***1.85 J***	***1.63 J***	***1.32 J***	***1.33 J***	***2.9 J***	***2.41 J***	***2.9 J***	***2.6 J***	***2.4 J***	--	***1.93 J***	***1.73 J***	***1.79 J***	<4.4	***1.5 J***	***1.34 J***	--	***2.24 J***
Chromium, Dissolved	µg/L	NS	<20	<20	<20	<20	<20	<20	***3.43 J***	<0.39	<1.81	<1.81	<2.09	***2.25***	***1.3 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	9.83	<20	<20	***20.7***	***21.5***	***20.3***	***22.9***	***22.6***	***23.2***	***16.4 J***	***21.2***	***27.7***	***30.5***	***34.9***	***44.8***	***38.1***	***42.3***	***31.9***	***27.7***	***25.7***	***21***	***21.4***	***18.1***	***15.7***	***13.2***	***13.1***	***12.4***	***13.2***	***10***	--	***6.7***	***3.69***	***3.22***	***2.58***	***2.21***	***2.5***	--	***2.87***
Cobalt, Dissolved	µg/L	NS	<20	<20	<20	***20.1***	<20	***21.8***	***21.5***	***24.3***	***12.6 J***	***21.1***	***23.1***	***31.7***	***35.4***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	1300	<20	***44.6***	***31.3***	***43.7***	***25.6***	***30.6***	***17.9 J***	***10.5***	***6.51 J***	***2.88 J***	***2.02 J***	***88.1***	***2.36***	<0.485	<0.485	<0.485	***1.39 J***	<1.22	***1.26 J***	<2.19	<2.19	<1.6	<1.6	***2.02 J***	<2	<3.2	***1.76 J***	<1.4	--	<1.4	***2.2 J***	<1.8	<7.2	<1.8	<1.8	--	<1.8
Copper, Dissolved	µg/L	NS	<20	<20	<20	***27.8***	***24.2***	***32***	***16 J***	***4.85***	***2.37 J***	***2.8 J***	<0.85	***116***	<0.56	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	<4	***5.8***	<4	<4	<4	<4	<1	***5.41***	<0.821	<0.821	<1.04	***1.85***	***0.486 J***	***0.117 J***	***0.164 J***	***0.158 J***	***0.246 J***	***0.299 J***	***0.909***	***0.331 J***	***0.59***	***0.252 J***	***0.333 J***	***0.78***	***0.49 J***	***1.13***	***0.671***	***1.05***	--	***0.329 J***	***0.64***	***0.387 J***	<0.96	<0.24	<0.26	--	***0.312 J***
Lead, Dissolved	µg/L	NS	<4	<4	<4	<4	<4	<4	<1	***0.2 J***	***1.19 J***	<0.821	<1.04	***0.357 J***	<0.18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	µg/L	722	***54.1***	<50	<50	<50	<50	<50	***44.6 J***	***39.1***	***25.5 J***	***26.5 J***	***28.5***	***37.8***	***42.8***	***60.2***	***55.4***	***76.5***	***53.4***	***48.2***	***51.6***	***50.9***	***55.7***	***47.2***	***30.4 J***	***55.7***	***57.9***	***53.9***	***60.4***	***54.2***	--	***46.3***	***43.5***	***42***	***50.1***	***40***	***47***	--	***38.3***
Nickel, Dissolved	µg/L	NS	<50	<50	<50	<50	<50	<50	***29.6 J***	***45.6***	***14.6 J***	***20.2 J***	***22***	***38.1***	***44.6***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	<5	<5	<5	<5	<5	<5	<1.69	***23.3***	<1.83	<1.83	***7.75 J***	<0.7	<0.7	<3.34	<3.34	<3.34	***1.02 J***	<0.63	<0.63	<0.928	<0.928	<0.9	<0.9	<1	<1	<1	***1.02 J***	***1.54 J***	--	<0.96	***1.2 J***	<0.96	<3.84	<1.4	<1.4	--	<1.4
Selenium, Dissolved	µg/L	NS	<5	<5	<5	<5	<5	<5	<1.69	***34.1***	<1.83	<1.83	<7.3	<0.7	<0.7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	µg/L	100	<20	<20	<20	<20	<20	<20	<1.7	<0.027	<1.7	<1.7	<0.395	***0.0341 J***	<0.033	<0.042	<0.042	***0.053 J***	<0.153	<0.153	<0.153	<0.14	***0.161 J***	<0.3	<0.3	<0.37	<0.37	<0.37	<0.42	--	<0.42	***0.516 J***	<0.49	<1.96	<0.5	<0.5	--	<0.5
Silver, Dissolved	µg/L	NS	<20	<20	<20	<20	<20	<20	<1.7	<0.027	<1.7	<1.7	<0.395	<0.033	<0.033	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	<2	<2	<2	<2	<2	<2	<0.84	<0.0087	<0.523	<0.523	<0.134	<0.05	<0.05	<0.0325	<0.0325	<0.0325	<0.0255	<0.0255	<0.0255	<0.0644	<0.0644	<0.17	<0.17	<0.27	<0.27	<0.26	<0.26	***0.962 J***	--	<0.26	<0.26	<0.26	<1.04	<0.26	<0.57	--	<0.57
Thallium, Dissolved	µg/L	NS	<10	<2	<2	<2	<2	<2	<0.84	<0.0087	<0.523	<0.523	<0.134	***0.0565 J***	<0.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium	µg/L	35	<50	<50	<50	<50	<50	<50	<2.1	***4.42***	***6.61 J***	<2.1	<4.17	***0.688 J***	***1.1***	***1.36 J***	***1.15 J***	***1.26 J***	***1.31 J***	***1.54 J***	***1.61 J***	***1.61 J***	***1.9 J***	***1.95 J***	***1.77 J***	***2.21 J***	***2.52 J***	***3.41 J***	***2.86 J***	***3.93 J***	--	***3.64 J***	***3.11 J***	***2.25 J***	<4.4	***2.17 J***	***2.55 J***	--	***3.15 J***
Vanadium, Dissolved	µg/L	NS	<50	<50	<50	<50	<50	<50	<2.1	***1.51***	***4.04 J***	<2.1	<4.17	***1.12 J***	***1.12 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	2000	***70.8***	***57.7***	<20	<20	<20	<20	<9.11	***61.8***	***10.6 J***	***66***	<3.13	***18.5***	***6.15 J***	<6.95	<6.95	<6.95	<5.21	<5.21	***5.99 J***	<11.5	<11.5	<10	<10	<10	<10	<10	<10	<10	--	<10	<10	<10	<40	<6.4	<9.7	--	<9.7
Zinc, Dissolved	µg/L	NS	***40.6***	***72.3***	<20	<20	<20	<20	<9.11	***9.93***	***24.2***	***53.6***	***3.18 J***	***44***	***7.54 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Appendix I Organics																																						
1,1,1,2-Tetrachloroethane	µg/L		70	<5	<1	<1	<1	<1	<1	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	--	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	--	<0.38
1,1,1-Trichloroethane	µg/L		200	<1	<1	<1	<1	<1	<1	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	--	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	--	<0.19
1,1,2,2-Tetrachloroethane	µg/L		0.3	<1	<1	<4	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	--	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	--	<0.47
1,1,2-Trichloroethane	µg/L		5	<1	<1	<1	<1	<1	<1	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	--	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	--	<0.45
1,1-Dichloroethane	µg/L		140	<1	<1	<1	<1	<1	***0.26 J***	<0.21	***0.22 J***	***0.3 J***	<0.21	***0.367 J***	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--	<0.22
1,1-Dichloroethylene	µg/L		7	<2	<2	<2	<2	<2	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	--	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	--	<0.56
1,2,3-Trichloropropane	µg/L	0.0058	<1	<1	<1	<1	<1	<1	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	--	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	--	<0.59
1,2-Dibromo-3-chloropropane	µg/L		0.2	<10	<10	<10	<10	<10	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	--	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	--	<1.2
1,2-Dibromoethane	µg/L		0.05	<10	<10	<10	<10	<10	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	--	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	--	<0.34
1,2-Dichlorobenzene	µg/L		600	<1	<1	<1	<1	<1	<0.14	<0.14	<0.14	<0.14	***0.189 J***	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	--	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	--	<0.37
1,2-Dichloroethane	µg/L		5	<1	<1	<1	<1	<1	***0.18 J***	<0.18	<0.18	***0.18 J***	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	***0.328 J***	<0.18	<0.18	<0.18	<0.18	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	--	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	--	<0.39
1,2-Dichloropropane	µg/L		5	<1	<1	<1	<1	<1	<0.87	<0.87	<0.11	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	--	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	--	<0.27
1,4-Dichlorobenzene	µg/L		75	<1	<1	<4	<1	<1	***1.38***	***1.02***	***0.71 J***	***1.43***	***1.45***	***1.66***	<0.2	<0.2	***0.931 J***	<0.2	<0.2	***0.924 J***	***0.802 J***	***0.918 J***	***0.811 J***	***0.988 J***	<0.23	<0.23	***0.929 J***	***1.15***	<0.23	<0.23	--	***0.753 J***	***0.241 J***	***0.963 J***	***1.14***	***0.926 J***	***1.22***	--	<0.23
2-Butanone	µg/L		4000	<10	<10	<10	<10	<10	<0.47	***1.13 J***	<0.16	***0.56 J***	<0.47	***2.03 J***	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<1.04	***1.73 J***	***3.01 J***	<1.04	<2.1	<2.1	***3 J***	***2.52 J***	<2.1	***3.4 J***	--	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	--	<2.1
2-Hexanone	µg/L		NS	<10	<10	<10	<10	<10	***0.35 J***	<0.22	<0.22	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<2	<2	<2	<2	<2	--	<2	<2	<2	<2	<2	<2	--	<2
4-Methyl-2-pentanone	µg/L		560	<10	<10	<10	<10	<10	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	--	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	--	<2.1
Acetone	µg/L		6300	<10	<10	<10	<10	<10	***5.18 J***	***1.84 J***	<1.79	***1.8 J***	<1.79	<1.79	<1.79	***6.97 J***	***4.8 J***	<1.79	***5.79 J***	***6.38 J***	***2.93 J***	***3.39 J***	***11.8***	***15.8***	<3.1	<3.1	***7.44 J***	<3.1	***15.2***	***14.2***	--	***5.58 J***	***4.97 J***	<3.1	***4.62 J***	***6.58 J***	***9.57 J***	--	***8.8 J***
Acrylonitrile	µg/L		0.32	<10	<10	<10	<10	<10	<0.53	<0.53	<0.19	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	--	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	--	<2.2
Benzene	µg/L		5	***3.89***	***2.94***	***3.44***	***3.54***	***3.18***	***4.05***	***5.3***	***4.11***	***3.39***	***5.62***	***4.54***	***5.24***	***5.12***	***5.14***	***4.96***	***3.75***	***4.16***	***4.35***	***3.6***	***4.84***	***4.07***	***2.7***	***4.75***	<0.22	***5.67***	***4.64***	***5.01***	***4.5***	***4.01***	--	***4.15***	***4.08***	***4.01***	***2.7***	***4.41***	***3.79***	--	***3.46***
Bromochloromethane	µg/L		90	<5	<5	<5	<5	<5	<5	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	--	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	--	<0.54
Bromodichloromethane	µg/L		80	<1	<1	<1	<1	<1	<1	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	--	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	--	<0.39
Bromomethane	µg/L		10	<4	<4	<4	<4	<20	<4	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	--	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	--	<1.1
Carbon disulfide	µg/L		700	<10	<1	<4	<1	<1	***0.18 J***	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	--	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	--	<0.45
Carbon Tetrachloride	µg/L		5	<5	<2	<4	<2	<2	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	--	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	--	<0.65
Chlorobenzene	µg/L		100	<1	<1	<1	<1	<1	***0.56 J***	***0.4 J***	***0.32 J***	***0.5 J***	***0.468 J***	***0.589 J***	<0.19	***0.383 J***	***0.362 J***	<0.19	<0.19	***0.357 J***	***0.292 J***	***0.381 J***	***0.319 J***	***0.491 J***	<0.4	***0.453 J***	<0.4	***0.614 J***	<0.4	***0.428 J***	--	***0.508 J***	<0.4	***0.463 J***	***0.472 J***	***0.474 J***	***0.473 J***	--	***0.45 J***
Chloroethane	µg/L		2800	<4	<4	<4	<4	<4	<0.15	***2.96 J***	***2.15 J***	***3.47 J***	***2.9 J***	***2.73 J***	***2.42 J***	***2.76 J***	***0.808 J***	***1.87 J***	***1.8 J***	***2.37 J***	***1.77 J***	***2.03 J***	***1.33 J***	***1.46 J***	<0.79	***1.44 J***	<0.79	***1.03 J***	***0.86 J***	<0.79	--	<0.79	***0.833 J***	***1.05 J***	<0.79	***1.58 J***	***0.998 J***	--	<0.79
Chloromethane	µg/L	NS	<3	<3	<3	<3	<3	<3	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	--	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	--	<0.61
cis-1,2-Dichloroethylene	µg/L		70	<1	<1	<1	<1	***1.3***	<1	***0.34 J***	***0.32 J***	***0.45 J***	***0.43 J***	***0.231 J***	***0.314 J***	<0.13	***0.403 J***	***0.475 J***	***0.28 J***	***0.541 J***	***0.452 J***	***0.257 J***	***0.402 J***	***0.313 J***	***0.332 J***	<0.21	***0.266 J***	***0.245 J***	<0.21	***0.214 J***	***0.217 J***	--	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	--	<0.21
cis-1,3-Dichloropropene	µg/L	NS	<10	<5	<5	<5	<5	<5	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	--	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	--	<0.25
Dibromochloromethane	µg/L		80	<5	<5	<5	<5	<5	<5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	--	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	--	<0.75
Dibromomethane	µg/L		70	<1	<1	<1	<1	<1	<1	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	--	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	--	<0.33
Dichloromethane	µg/L		5	<5	<5	<5	<5	<5	<5	<0.17	***0.66 J***	<0.17	***0.4 J***	***0.322 J***	<0.17	***0.59 J***	***0.275 J***	<0.17	<0.17	***0.255 J***	<0.17	<0.17	<0.17	***0.355 J***	<0.17	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	--	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	--	<1.7
Ethylbenzene	µg/L		700	<1	<1	<1	<1	<1	<1	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	--	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	--	<0.31
Iodomethane	µg/L	NS	<20	<10	<50	<10	<10	<20	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<7	<7	<7	<7	<7	<7	--	<7	<7	<7	<7	<7	<7	--	<7
Styrene	µg/L		100	<1	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	--

Black Hawk County Landfill
Appendix II Results
Monitoring Well OW-401R

Parameter Name	Units	GPS	June-2011	May-2012	Dec. 2012	Feb. 2013	Apr. 2013	Jun-13	Mar-15	Aug-15	Jun-16	Oct-16	Jun-17	Sep-17	Nov-17	Jun-18	Apr-18	Jul-18	Sep-18	Apr-19	Oct-19	Apr-20	Oct-20	Apr-21	Jun-21	Nov-21	Apr-22	Nov-22	Mar-23	Sep-23	May-24	Oct-24
Alcohols/Gycols by GC																															
Acetonitrile	ug/L	NS	<10000	<1200	--	--	--	--	--	***181 J***	<1200	<1200	--	<1200	--	--	--	--	<126	--	<126	--	<404	--	--	<404	--	<404	--	--	--	--
Isobutanol	ug/L	2498	<50000	<1200	--	--	--	--	--	<1200	--	<1200	--	<1200	--	--	--	--	<1200	--	<1200	--	<5051	--	--	<5051	--	<5051	--	--	--	--
Herbicides (GC)																															
2,4,5-T	ug/L	70	<0.5	<0.47	--	--	--	--	--	<0.522	--	<0.504	--	No sample	--	--	--	--	<0.517	--	<5.35	--	<0.039	--	--	<0.15	--	<0.07	--	--	<0.0784	--
2,4-D	ug/L	70	<1	<0.51	--	--	--	--	--	<0.56	--	<0.543	--	No sample	--	--	--	--	<0.555	--	<5.74	--	***1.38***	<0.551	<2.96	<0.508	<0.592	<0.2	<0.614	<0.307	<0.302	<2.39
Silvex (2,4,5-TP)	ug/L	50	<0.5	<0.51	--	--	--	--	--	<0.348	--	<0.336	--	No sample	--	--	--	--	<0.365	--	<5.57	--	<0.039	--	--	<0.25	--	<0.07	<0.146	<0.0634	<0.0266	<0.21
Inorganics																															
Cyanide	ug/L	200	<10	<1.7	--	--	--	--	--	<3.04	--	*4.77 J*	--	<3.46	--	--	--	--	<4.2	--	<5	--	<5	--	--	<5.3	--	<4.3	--	--	--	--
Mercury	ug/L	2	<0.2	<0.024	--	--	--	--	--	***0.0935 J***	<0.0926	<0.142	--	<0.112	--	--	--	--	<0.15	--	<0.1	--	<0.1	--	--	<0.15	--	<0.71	--	--	--	--
Sulfate	ug/L	500	<2000	<500	--	--	--	--	--	<370	--	***1410000***	***892 J***	***3200***	***3180***	***3600***	***2210***	--	***2600***	***3320***	***3050***	***2310***	***3980***	<10000	--	***757 J***	--	***518 J***	***480 J***	<255	<1.41	<1410
Tin	ug/L	4200	<100	<16.7	--	--	--	--	--	<1.8	--	<0.832	--	<1.62	--	--	--	--	*6.999 J*	--	<1.8	--	<2.4	--	--	<3	--	<3	--	--	--	--
PCBs (EPA Method 8082)																															
PCB-1016	ug/L	NS	<0.8	<0.0542	--	--	--	--	--	<0.0493	--	<0.0469	--	No sample	--	--	--	--	<0.0477	--	<0.048	--	<0.299	--	--	<0.306	--	<0.193	--	--	--	--
PCB-1221	ug/L	NS	<0.8	<0.2	--	--	--	--	--	<0.182	--	<0.182	--	No sample	--	--	--	--	<0.176	--	<0.177	--	<0.299	--	--	<0.306	--	<0.193	--	--	--	--
PCB-1232	ug/L	NS	<0.8	<0.138	--	--	--	--	--	<0.125	--	<0.125	--	No sample	--	--	--	--	<0.121	--	<0.122	--	<0.299	--	--	<0.306	--	<0.193	--	--	--	--
PCB-1242	ug/L	NS	<0.8	<0.148	--	--	--	--	--	<0.148	--	<0.148	--	No sample	--	--	--	--	<0.143	--	<0.144	--	<0.299	--	--	<0.306	--	<0.193	--	--	--	--
PCB-1248	ug/L	NS	<0.8	<0.138	--	--	--	--	--	<0.125	--	<0.125	--	No sample	--	--	--	--	<0.121	--	<0.122	--	<0.241	--	--	<0.247	--	<0.155	--	--	--	--
PCB-1254	ug/L	NS	<0.8	<0.115	--	--	--	--	--	<0.105	--	<0.105	--	No sample	--	--	--	--	<0.101	--	<0.102	--	<0.241	--	--	<0.247	--	<0.125	--	--	--	--
PCB-1260	ug/L	NS	<0.8	<0.055	--	--	--	--	--	<0.05	--	<0.05	--	No sample	--	--	--	--	<0.0484	--	<0.0486	--	<0.241	--	--	<0.247	--	<0.125	--	--	--	--
Pesticides (EPA Method 8081A)																															
4,4'-DDD	ug/L	0.73	<0.032	<0.0018	--	--	--	--	--	<0.00189	--	***0.0118 J***	--	***0.0251 J***	--	--	--	--	<0.00194	--	<0.00193	--	<0.00297	--	--	<0.00968	--	<0.0385	--	--	--	--
4,4'-DDE	ug/L	0.51	<0.032	<0.0021	--	--	--	--	--	<0.00221	--	<0.00241	--	***0.0176 J***	--	--	--	--	***0.0304 J***	--	***0.0144 J***	--	<0.0035	--	--	<0.01	--	<0.0385	--	--	--	--
4,4'-DDT	ug/L	0.51	<0.032	<0.0038	--	--	--	--	--	<0.004	--	***0.023 J***	--	***0.0253 J***	--	--	--	--	***0.0534 J***	--	***0.014 J***	--	<0.0035	--	--	<0.0141	--	<0.0477	--	--	--	--
Aldrin	ug/L	0.01	<0.032	<0.0045	--	--	--	--	--	<0.00474	--	<0.00515	--	***0.0293 J***	--	--	--	--	***0.0224 J***	--	<0.00486	--	<0.00537	--	--	<0.0141	--	<0.0304	--	--	--	--
alpha-BHC	ug/L	0.0203	<0.032	<0.0037	--	--	--	--	--	<0.00179	--	***0.00756 J***	--	***0.0098 J***	--	--	--	--	<0.00183	--	<0.00184	--	<0.00198	--	--	<0.0118	--	<0.033	--	--	<0.0335	--
beta-BHC	ug/L	0.042	<0.032	<0.0048	--	--	--	--	***0.00548 J***	<0.00745	***0.0203 J***	--	***0.0375***	<0.00522	--	***0.0175 J***	***0.0655***	***0.0985***	***0.0625***	***0.0381 J***	***0.0787***	***0.0479***	<0.00585	--	<0.0353	***0.0593 J***	***0.0967***	***0.0719 J***	***0.0677***	<0.0402	<0.0405
Chlordane	ug/L	NS	<2	<0.0541	--	--	--	--	--	<0.0674	--	<0.0736	--	<0.0743	--	--	--	--	<0.0688	--	<0.0692	--	<0.0728	--	--	<0.259	--	<0.92	--	--	--	--
delta-BHC	ug/L	2.1	<0.032	<0.0023	--	--	--	--	--	<0.00242	--	<0.00264	--	<0.00207	--	--	--	--	***0.0333 J***	--	***0.0254 J***	--	<0.00264	--	--	***0.059***	--	<0.0397	<0.0314	<0.027	<0.0293	<0.031
Dieldrin	ug/L	0.011	<0.032	<0.002	--	--	--	--	--	<0.00211	--	<0.00231	--	***0.00549 J***	--	--	--	--	***0.00782 J***	--	***0.00855 J***	--	***0.0115 J***	--	--	<0.0141	--	<0.0292	--	--	--	--
Endosulfan I	ug/L	42	<0.032	<0.002	--	--	--	--	--	<0.00211	--	<0.00221	--	***0.0149 J***	--	--	--	--	***0.00653 J***	--	***0.00772 J***	--	<0.00221	--	--	<0.0129	--	<0.0375	--	--	--	--
Endosulfan II	ug/L	42	<0.032	<0.0032	--	--	--	--	--	<0.002	--	<0.00218	--	<0.00204	--	--	--	--	<0.00204	--	<0.00205	--	***0.0109 J***	--	--	<0.00953	--	<0.0331	--	--	--	--
Endosulfan sulfate	ug/L	NS	<0.032	<0.0025	--	--	--	--	--	<0.00263	--	<0.00287	--	***0.0468***	***0.0347***	--	<0.00275	<0.00275	***0.00907 J***	***0.0132 J***	<0.00257	<0.00275	<0.00429	<0.00395	--	<0.00968	<0.03	<0.0346	<0.0349	<0.03	<0.0328	<0.0375
Endrin	ug/L	2	<0.032	<0.0045	--	--	--	--	--	<0.002	--	<0.00218	--	***0.0131 J***	--	--	--	--	***0.00377 J***	--	***0.0121 J***	--	<0.0035	--	--	<0.0118	--	<0.0292	--	--	--	--
Endrin aldehyde	ug/L	2.1	<0.032	<0.0073	--	--	--	--	--	***0.00999 J***	<0.00745	<0.00839	--	***0.0166 J***	--	--	--	--	<0.00785	--	<0.00789	--	<0.00839	--	--	***0.0193***	--	***0.041 J***	<0.0337	<0.029	<0.0315	<0.0262
gamma-BHC (Lindane)	ug/L	0.2	<0.032	<0.0019	--	--	--	--	--	<0.00211	--	***0.00551 J***	--	***0.0259 J***	--	--	--	--	<0.00204	--	<0.00205	--	<0.00238	--	--	<0.0141	--	<0.0397	--	--	--	--
Heptachlor	ug/L	0.4	<0.032	<0.0026	--	--	--	--	--	<0.00274	--	<0.00299	--	<0.00302	--	--	--	--	<0.0029	--	<0.00281	--	<0.00299	--	--	<0.0141	--	<0.0335	--	--	--	--
Heptachlor epoxide	ug/L	0.2	<0.032	<0.0061	--	--	--	--	--	<0.00642	--	<0.00701	--	<0.00703	--	--	--	--	<0.00656	--	<0.00655	--	<0.00699	--	--	<0.0337	--	<0.033	--	--	--	--
Methoxychlor	ug/L	40	<0.032	<0.0021	--	--	--	--	--	<0.00221	--	<0.00241	--	***0.00655 J***	--	--	--	--	***0.00421 J***	--	***0.00777 J***	--	***0.00927 J***	--	--	<0.0163	--	<0.0496	--	--	--	--
Toxaphene	ug/L	3	<2	<0.058	--	--	--	--	--	<0.0611	--	<0.0667	--	<0.0674	--	--	--	--	<0.0624	--	<0.0627	--	<0.0667	--	--	<0.482	--	<0.784	--	--	--	--
Semivolatile Organics by GC/MS																															
1,2,4,5-Tetrachlorobenzene	ug/L	2.1	<10	<0.12	--	--	--	--	--	<0.128	--	<0.138	--	<0.15	--	--	--	--	<0.159	--	<0.792	--	<2.1	--	--	<1.74	--	<0.614	--	--	--	--
1,3,5-Trinitrobenzene	ug/L	NS	<10	<1.28	--	--	--	--	--	<1.47	--	<1.55	--	<1.65	--	--	--	--	<1.65	--	<6.96	--	<1.61	--	--	<1.41	--	<2.61	--	--	--	--
1,3-Dinitrobenzene	ug/L	1	<10	<0.17	--	--	--	--	--	<0.181	--	<0.195	--	<0.213	--	--	--	--	<3.15	--	<5.49	--	<1.25	--	--	<1.09	--	<3.64	--	--	--	--
1,4-Naphthoquinone	ug/L	NS	<10	<0.14	--	--	--	--	--	<0.149	--	<0.161	--	<0.175	--	--	--	--	<0.469	--	<1.96	--	<1.25	--	--	<1.07	--	<4.09	--	--	--	--
1,4-Phenylenediamine	ug/L	NS	<10	<0.4	--	--	--	--	--	<0.94	--	<0.66	--	<10.5	--	--	--	--	<9.55	--	<45.7	--	<0.625	--	--	<8.543	--	<2.16	--	--	--	--
1-Naphthylamine	ug/L	NS	<10	<0.24	--	--	--	--	--	<0.355	--	<0.276	--	<0.3	--	--	--	--	<0.273	--	<1.3	--	<0.625	--	--	<0.857	--	<2.86	--	--	--	--
2,3,4,6-Tetrachlorophenol	ug/L	1100	<10	<0.2	--	--	--	--	--	<0.213	--	<0.23	--	<0.25	--	--	--	--	<0.568	--	<2.72	--	<1.24	--	--	<1.08	--	<6.02	--	--	--	--
2,4,5-Trichlorophenol	ug/L	700	<10	<0.32	--	--	--	--	--	<0.34	--	<0.368	--	<0.4	--	--	--	--	<0.795	--	<3.8	--	<1.4	--	--	<1.2	--	<6.02	--	--	--	--
2,4,6-Trichlorophenol	ug/L	16	<10	<0.22	--	--	--	--	--	<0.234	--	<0.253	--	<0.275	--	--	--	--	<0.795	--	<3.8	--	<1.5	--	--	<1.3	--	<5.98	--	--	--	--
2,4-Dichlorophenol	ug/L	20	<10	<0.15	--	--	--	--	--	<0.16	--	<0.172	--	<0.191	--	--	--	--	<0.352	--	<1.68	--	<1.38	--	--	<1.2	--	<0.986	--	--	--	--
2,4-Dimethylphenol	ug/L	100	<10	<0.21	--	--	--	--	--	<0.223	--	<0.241	--	<0.263	--	--	--	--	***0.589 J***	--	<1.14	--	<1.25	--	--	<1.09	--	<0.659	--	--	--	--
2,4-Dinitrophenol	ug/L	14	<10	<1.24	--	--	--	--	--	<1.43	--	<1.54	--	<1.68	--	--	--	--	<2.61	--	<14	--	<7.13	--	--	<8.2	--	<14.8	--	--	--	--
2,6-Dichlorobenzamide	ug/L	0.25	<10	<0.19	--	--	--	--	--	<0.202	--	<0.218	--	<0.238	--	--	--	--	<0.523	--	<2.5	--	<1.38	--	--	<1.2	--	<7.27	--	--	--	--
2,6-Dichlorophenol	ug/L	765	<10	<0.22	--	--	--	--	--	<0.234	--	<0.253	--	<0.275	--	--	--	--	<0.25	--	<1.2	--	<1.38	--	--	<1.2	--	<0.756	--	--	--	--
2,6-Dinitrotoluene	ug/L	0.26	<10	<0.24	--	--	--	--	--	<0.255	--	<0.276	--	<0.3	--	--	--	--	<0.273	--	<1.3	--	<1.38	--	--	<1.2	--	<0.591	--	--	--	--
2-Acetylaminofluorene	ug/L	NS	<10	<0.28	--	--	--	--	--	<0.298	--	<0.322	--	<0.35	--	--	--	--	<1.41	--	<6.74	--	<1.5	--	--	<1.3	--	<3.07	--	--	--	--
2-Chloronaphthalene	ug/L	560	<10	<0.23	--	--	--	--	--	<0.245	--	<0.264	--	<0.288	--	--	--	--	<0.261	--	<1.25	--	<1.63	--	--	<1.41	--	<0.727	--	--	--	--
2-Chlorophenol	ug/L	40	<10	<0.15	--	--	--	--	--	<0.16	--	<0.172	--	<0.188	--	--	--	--	<0.27	--	<1.38	--	<1.38	--	--	<1.2	--	<0.614	--	--	--	--
2-Methylnaphthalene	ug/L	28	<10	<0.19	--	--	--	--	--	<0.202	--	<0.218	--	<0.238	--	--	--	--	<0.216	--	<1.03	--	<1.63	--	--	<1.41	--	<0.97	--	--	--	--
2-Methylphenol (o-Cresol)	ug/L	35	<10	<0.18	--	--	--	--	--	<0.191	--	<0.207	--	<0.225	--	--	--	--	<0.285	--	<0.978	--	<1.25	--	--	<1.09	--	<0.739	--	--	--	--
2-Naphthylamine	ug/L	0.057	<10	<0.23	--	--	--	--	--	<0.234	--	<0.253	--	<0.275	--	--	--	--	<0.25	--	<1.2	--	<1.08	--	--	<0.935	--	<2.39	--	--	--	--
2-Nitroaniline	ug/L	NS	<10	<0.23	--	--	--	--	--	<0.245	--	<0.264	--	<0.288	--	--	--	--	<1.41	--	<6.74	--	<1.5	--	--	<1.3	--	<5.7	--	--	--	--
2-Nitrophenol	ug/L	NS	<10	<0.16	--	--	--	--	--	<0.17	--	<0.184	--	<0.2	--	--	--	--	<1.09	--	<5.22	--	<2	--	--	<1.74	--	<5.73	--	--	--	--
3,3'-Dichlorobenzidine	ug/L	0.39	<10	<0.46	--	--	--	--	--	<0.489	--	<0.529	--	<0.575	--	--	--	--	<0.92	--	<4.4	--	<2.25	--	--	<1.96	--	<1.59	--	--	--	--
3,3'-Dimethylbenzidine	ug/L	NS	<10	<0.23	--	--	--	--	--	<0.245	--	<0.264	--	<0.288	--	--	--	--	<0.259	--	<1.14	--	<2.5	--	--	<1.96	--	<2.39	--	--	--	--
3/4-Methylphenol	ug/L	70	<10	<0.18	--	--	--	--	--	<0.191	--	<0.207	--	<0.225	--	--	--	--	<0.285	--	<0.978	--	<0.95	--	--	<0.826	--	<0.795	--	--	--	--
3-Methylcholanthrene	ug/L	NS	<10	<0.18	--	--	--	--	--	<0.33	--	<0.356	--	<0.388	--	--	--	--	<1.01	--	<4.84	--	<3.13	--	--	<2.72	--	<0.364	--	--	--	--
3-Nitroaniline	ug/L	NS	<10	<0.22	--	--	--	--	--	<0.234	--	<0.253	--	<0.275	--	--	--	--	<0.659	--	<3.15	--	<1.25	--	--	<1.09	--	<3.07	--	--	--	--
4,6-Dinitro-2-methylphenol	ug/L	NS	<10	<2.22	--	--	--	--	--	<2.55	--	<2.76	--	<3	--	--	--	--	<2.52	--	<12.1	--	<3.13	--	--	<2.72	--	<7.84	--	--	--	--
4-Aminobiphenyl	ug/L	0.0083	<10	<0.3	--	--	--	--	--	<0.319	--	<0.345	--	<0.375	--	--	--	--	<0.341	--	<1.62	--	<1.2	--	--	<1.04	--	<2.5	--	--	--	--
4-Bromophenyl phenyl ether	ug/L	NS	<10	<0.29	--	--	--	--	--	<0.309	--	<0.333	--	<0.363	--	--	--	--	<0.33	--	<1.58	--	<2.38	--	--	<2.07	--	<0.795	--	--	--	--
4-Chloro-3-methylphenol	ug/L	700	<10	***0.71 J***	***0.046 J***	***0.429 J***	***0.324 J***	***0.555 J***	***1.4 J***	***0.982 J***	--	<0.218	--	<0.238	--	--	--	--	<0.295	--	<1.41	--	<1.19	--	--	<1.03	--	<0.955	--	--	--	--
4-Chloroaniline	ug/L	20	<10	<0.14	--	--	--	--	--	<0.149	--	<0.161	--	<0.175	--	--	--	--	<0.17	--	<1.5	--	<0.815	--	--	<1.3	--	<0.705	--	--	--	--
4-Chlorophenyl phenyl ether	ug/L	NS	<10	<0.25	--	--	--	--	--	<0.266	--	<0.287	--	<0.313	--	--	--	--	<0.284	--	<1.36	--	<1.63	--	--	<1.41	--	<0.788	--	--	--	--
4-Nitroaniline	ug/L	NS	<10	<0.32	--	--	--	--	--	<0.34	--	<0.368	--	<0.4	--	--	--	--	<0.364	--	<1.74	--	<2.13	--	--	<1.85	--	<1.48	--	--	--	--
4-Nitrophenol	ug/L	60	<10	<0.12	--	--	--	--	--	<0.128	--	<0.138	--	<0.15	--	--	--	--	<1.57	--	<7.5	--	<3.13	--	--	<2.72	--	<8.64	--	--	--	--
5-Nitro-o-toluidine	ug/L	NS	<10	<0.17	--	--	--	--	--	<0.181	--	<0.195	--	<0.213	--	--	--	--	<0.193	--	<0.928	--	<3.88	--	--	<3.37	--	<3.18	--	--	--	--
7,12-Dimethylbenz (a) anthracene	ug/L	NS	<10	<0.25	--	--	--	--	--	<0.266	--	<0.287	--	<0.313	--	--	--	--	<0.284	--	<1.36	--	<1.95	--	--	<1	--	<2.16	--	--	--	--
Acenaphthene	ug/L	420	<10	<0.3	--	--	--	--	--	<0.319	--	<0.345	--	<0.375	--	--	--	--	<0.341	--	<1.63	--	<1.63	--	--	<1.41	--	<0.737	--	--	--	--
Acenaphthylene	ug/L	210	<10	<0.22	--	--	--	--	--	<0.223	--	<0.241	--	<0.263	--	--	--	--	<0.659	--	<3.15	--	<1.63	--	--	<1.41	--	<0.838	--	--	--	--
Acetophenone	ug/L	NS	<10	<0.22	--	--	--	--	--	<0.234	--	***0.418 J***	--	***0.519 J***	--	--	--	--	***0.551 J***	--	<1.9	--	<3.75	--	--	<3.26	--	<0.786	--	--	--	--
Anthracene	ug/L	2100	<10	<0.17	--	--	--	--	--	<0.181	--	<0.195	--	<0.213	--	--	--	--	<0.193	--	<0.924	--	<1.38	--	--	<1.2	--	<0.989	--	--	--	--
Benzo (a) anthracene	ug/L	0.24	<10	<0.24	--	--	--	--	--	<0.255	--	<0.276	--	<0.3	--	--	--	--	<0.386	--	<1.85	--	<1.38	--	--	<1.2	--	<0.986	--	--	--	--
Benzo (a) pyrene	ug/L	0.2	<10	<0.25	--	--	--	--	--	<0.266	--	<0.287	--	<0.313	--	--	--	--	<1.44	--	<6.9	--	<1.85	--	--	<1.63	--	<5.2	--	--	--	--
Benzo (b) fluoranthene	ug/L	0.24	<10	<0.31	--	--	--	--	--	<0.33	--	<0.356	--	<0.388	--	--	--	--	<1.14	--	<5.43	--	<1.5	--	--	<1.3	--	<5.57	--	--	--	--
Benzo (g,h,i) perylene	ug/L	21	<10	<0.23	--	--	--	--	--	<0.245	--	<0.264	--	<0.288	--	--	--	--	<1.5	--	<7.17	--	<2	--	--	<1.74	--	<7.16	--	--	--	--
Benzo (k) fluoranthene	ug/L	2.4	<10	<0.2	--	--	--	--	--	<0.213	--	<0.23	--	<0.25	--	--	--	--	<0.648	--	<3.1	--	<1.5	--	--	<1.3	--	<2.5	--	--	--	--
benzyl alcohol	ug/L	700	<10	<0.18	--	--	--	--	--	<0.191	--	<0.207	--	<0.225	--	--	--	--	<0.662	--	<3.36	--	<1.38	--	--	<1.2	--	<1.89	--	--	--	--
Bis(2-chloroethoxy)methane	ug/L	NS	<10	<0.26	--	--	--	--	--	<0.277	--	<0.299	--	<0.325	--	--	--	--	<0.295	--	<1.41	--	<1.38	--	--	<1.2	--	<0.894	--	--	--	--
Bis(2-chloroethyl)ether	ug/L	0.16	<10	<0.18	--	--	--	--	--	<0.191	--	<0.207	--	<0.225	--	--	--	--	<0.216	--	<1.03	--	<1.38	--	--	<1.2	--	<0.932	--	--	--	--
Bis(2-chloroisopropyl) ether	ug/L	300	<10	<0.18	--	--	--	--	--	<0.191	--	<0.207	--	<0.225	--	--	--	--	<0.285	--	<0.978	--	<1.5	--	--	<1.3	--	<0.614	--	--	--	--
Bis(2-ethylhexyl)phthalate	ug/L	6	<10	***0.641 J***	<0.39	<0.435	<0.304	***2.77 J***	<0.411	<0.448	--	***0.318 J***	--	<0.314	--	--	--	--	<2.64	--	<12.6	--	<3.25	--	--	<2.83	--	<6.25	--	--	--	--
Butyl benzyl phthalate	ug/L	140	<10	<0.34	--	--	--	--	--	<0.362	--	<0.391	--	<0.425	--	--	--	--	<1.74	--	<8.32	--	<1.88	--	--	<1.63	--	<6.14	--	--	--	--
Chlorobenzilate	ug/L	NS	<10	<0.23	--	--	--	--	--	<0.223	--	<0.241	--	<0.263	--	--	--	--	<0.259	--	<1.14	--	<1.63	--	--	<1.35	--	<4.09	--	--	--	--
Chrysene	ug/L	24	<10	<0.29	--	--	--	--	--	<0.309	--	<0.333	--	<0.363	--	--	--	--	<0.352	--	<1.68	--	<1.38	--	--	<1.2	--	<0.986	--	--	--	--
Dalkon (o-ts- or trans)	ug/L	765	<10	<0.23	--	--	--	--	--	<0.245	--	<0.264	--	<0.288	--	--	--	--	<0.261	--	<1.25	--	<1.63	--	--	<1.41	--	<4.55	--	--	--	--
Dibenzo (a,h) anthracene	ug/L	0.024	<10	<0.25	--	--	--	--	--	<0.266	--	<0.287	--	<0.313	--	--	--	--	<2.08	--	<9.95	--	<2.38	--	--	<2.07	--	<4.43	--	--	--	--
Dibenzofuran	ug/L	7	<10	<0.24	--	--	--	--	--	<0.255	--	<0.276	--	<0.3	--	--	--	--	<0.273	--	<1.3	--	<1.5	--	--	<1.3	--	<0.841	--	--	--	--
Diethyl phthalate	ug/L	5600	<10	***1.58 J***	***0.937 J***	***0.412 J***	--	***0.71 J***	***1.58 J***	***1.04 J***	--	***1.55 J***	--	***1.93 J***	--	--	--	--	***1.52 J***	--	***1.41 J***	--	***0.38 J***	--	--	***1.39 J***	--	<1.59	--	--	--	--
Dimethoate	ug/L	1.4	<10	<0.27	--	--	--	--	--	<0.287	--	<0.31	--	<0.338	--	--	--	--	<0.307	--	<1.47	--	<1.25	--	--	<1.09	--	<4.09	--	--	--	--
Dimethyl phthalate	ug/L	NS	<10	<0.23	--	--	--	--	--	<0.245	--	<0.264	--	<0.288	--	--	--	--	<2.49	--	<11.9	--	<1.5	--	--	<1.3	--	<2.72	--	<4.14	--	--
Di-n-butyl phthalate	ug/L	700	<10	***0.788 J***	<0.51	<0.549	--	<0.52	<0.537	<0.543	--	<0.586	--	<0.638	--	--	--	--	<1.31	--	<6.25	--	<1.5	--	--	<1.3	--	<6.36	--	--	--	--
Di-n-octyl phthalate	ug/L	140	<10	<0.23	--	--	--	--	--	<0.245	--	<0.264	--	<0.288	--	--	--	--	<3.01	--	<14.4	--	<1.75	--	--	<1.26	--	<7.95	--	--	--	--
Dinoseb	ug/L	7	<10	<0.41	--	--	--	--	--	<0.457	--	<0.494	--	<0.538	--	--	--	--	<0.489	--	<2.34	--	<0.625	--	--	<8.543	--	<2.73	--	--	--	--
Diphenylamine	ug/L	180	<10	<0.66	--	--	--	--	--	<0.702	--	<0.759	--	<0.825	--	--	--	--	<0.75	--	<3.58	--	<1.1	--	--	<0.957	--	<6.82	--	--	--	--
Disulfoton	ug/L	0.7	<10	<0.29	--	--	--	--	--	<0.309	--	<0.333	--	<0.363	--	--	--	--	<0.33	--	<1.58	--	<0.8	--	--	<0.696	--	<2.73	--	--	--	--
Ethyl Methanesulfonate	ug/L	NS	<10	<0.15	--	--	--	--	--	<0.16	--	<0.172	--	<0.188	--	--	--	--	<0.17	--	<0.815	--	<0.625	--	--	<0.543	--	<4.09	--	--	--	--
Famphur	ug/L	20	<10	<0.47	--	--	--	--	--	<0.5	--	<0.54	--	<0.588	--	--	--	--	<0.534	--	<2.55	--	<0.8	--	--	<0.696	--	<4.32	--	--	--	--
Fluoranthene	ug/L	280	<10	<0.33	--	--	--	--	--	<0.351	--	<0.379	--	<0.413	--	--	--	--	<0.773	--	<3.7	--	<1.18	--	--	<1.02	--	<1.91	--	--

Black Hawk County Landfill
Appendix I Results
Monitoring Well OW-402B

Parameter Name	Units	GPS	Feb-11	Mar-11	May-11	Jun-11	Aug-11	Nov-11	Feb-12	May-12	Dec-12	Apr-13	Oct-13	Mar-14	Aug-14	Feb-15	Aug-15	Mar-16	Sep-16	Dec-16	Apr-17	Sep-17	Mar-18	Sep-18	Apr-19	Oct-19	Mar-20	Oct-20	Apr-21	Jun-21	Nov-21	Apr-22	Nov-22	Mar-23	Sep-23	May-24	Oct-24
Appendix I Inorganics																																					
Total Suspended Solids	mg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	<3.77	<3.2	<1.2	***2.13***	***1.75 J***	***3.87***	***8.25***	***3.87***	***6.12***	***1 J***	***8.5***	***1.63 J***	***1.63 J***	***3.87***	***2.67 J***	--	***2.5***	***3.25***	***5***	***8.33***	***5.75***	<1.39	***7.13***
Turbidity, Field	NTU	NS	--	--	--	--	--	--	--	--	--	--	--	--	***0.8575***	0	***0.993***	***0.7932***	***0.2166***	***5.753***	***1.069***	***2.017***	***1.137***	***1.927***	***4.77***	***0.79***	0	***0.63***	0	***2.4***	***0.13***	0	0	***0.38***	***1.28***	***0.82***	***0.76***
Turbidity, Lab	NTU	NS	--	--	--	--	--	--	--	--	--	--	--	--	<0.6	***1.7***	***1.2***	***1.4***	<0.4	***2.1***	***15.7***	***3.1***	***19.6***	***0.9 J***	***7.3***	***1.92***	***2.34***	--	--	--	--	--	--	--	--	--	--
Antimony	µg/L	6	<6	<6	<6	<6	<6	<2.73	***0.13 J***	***2.1 J***	<0.584	<0.271	<0.4	<0.4	<0.161	<0.161	<0.161	<0.237	<0.237	<0.237	<0.185	<0.185	<0.42	<0.42	<0.53	<0.53	<0.58	<0.51	<1.1	--	<1.1	<0.69	<0.69	<0.69	<1	<1	<1
Antimony, Dissolved	µg/L	NS	<6	<6	<6	<6	<6	<2.73	<0.12	***2.78 J***	<0.584	<0.271	<0.4	<0.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	***2.87***	<2	<6	<4	<2	<0.6	***4.98***	<0.37	<0.185	***3.22 J***	<0.33	***0.606 J***	<0.945	<0.945	<0.945	<0.672	<0.672	<0.672	<0.505	***0.708 J***	***0.694 J***	***0.615 J***	<0.75	<0.75	<0.88	***1 J***	<0.75	--	***0.845 J***	***0.847 J***	***0.782 J***	***0.826 J***	***0.962 J***	<0.53	***0.841 J***
Arsenic, Dissolved	µg/L	NS	<1	<1	<20	<2	<2	<0.47	***5.28***	<0.185	<0.185	***3.32 J***	<0.33	<0.33	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	***423***	***383***	***355***	***324***	***287***	***266***	***370***	***310***	***380***	***374***	***260***	***357***	***284***	***365***	***294***	***378***	***283***	***381***	***358***	***469***	***609***	***489***	***444***	***691***	***573***	***892***	***866***	--	***1010***	***979***	***949***	***857***	***850***	***581***	***988***
Barium, Dissolved	µg/L	NS	***261***	***348***	***294***	***335***	***269***	***260***	***330***	***297***	***358***	***344***	***268***	***369***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	<1	<1	<1	<1	<1	<0.051	***0.23 J***	<0.169	<0.169	<0.348	<0.08	<0.08	<0.039	<0.039	<0.039	<0.221	<0.221	<0.221	<0.125	<0.125	<0.19	<0.19	<0.27	<0.27	<0.27	<0.27	<0.27	--	<0.27	<0.27	<0.27	<0.27	<0.33	<0.33	<0.33
Beryllium, Dissolved	µg/L	NS	<1	<1	<1	<1	<1	<0.051	***0.03 J***	<0.169	<0.169	<0.348	<0.08	<0.08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	***0.702***	***0.569***	***0.504***	***0.623***	<0.5	***0.555***	***0.85***	***0.431 J***	***0.292 J***	<0.53	***0.596 J***	***1.16***	***0.735***	***1.29***	***0.685***	***0.41 J***	***0.644***	***0.765***	***0.582***	***0.873***	***1.23***	***0.95***	***0.873***	***1.09***	***0.462***	***1.29***	***1.12***	--	***0.951***	***0.745***	***0.697***	***0.529***	***0.569***	<0.1	***0.514***
Cadmium, Dissolved	µg/L	NS	<0.5	***0.629***	***0.553***	***0.592***	<0.5	***0.818***	***0.99***	***0.769***	***0.878***	<0.53	***0.649 J***	***1.06***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	***4650***	***42.1***	***328***	***136***	***20.5***	***171***	***69.6***	***18.6 J***	***115***	***31.8***	***6.32***	***7.6***	***6.51***	***3.81 J***	***3.42 J***	***3.13 J***	***1.11 J***	***3.05 J***	***1.79 J***	***1.41 J***	***9.64***	***0.991 J***	***4.89 J***	***2.23 J***	***1.74 J***	***21.2***	***36***	--	***5.69***	***2.26 J***	***6.82***	***34.9***	***7.21***	<1.2	***8.64***
Chromium, Dissolved	µg/L	NS	<20	***26***	<20	<20	<20	***12.2 J***	***185***	<1.81	***47.9***	<2.09	<0.5	***1.7 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	9.83	***23***	<20	<20	<20	<20	***10.3 J***	***12.3***	***6.82 J***	<1.55	***26.5***	***5.33***	***8.69***	***4.7***	***6.85***	***5.23***	***7.93***	***3.3***	***5.11***	***16.7***	***6.83***	***12.9***	***2.89***	***7.13***	***4.12***	***3.03***	***7.26***	***18.4***	--	***6.74***	***9.35***	***8.33***	***21.2***	***7.52***	***2.02***	***7.99***
Cobalt, Dissolved	µg/L	NS	<20	<20	<20	<20	<20	***5.29 J***	***12.5***	***5.19 J***	***20.7***	***22.3***	***5.7***	***8.25***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	1300	***77.6***	<20	***33.2***	***31.5***	***27.4***	***25***	***29.4***	***6.39 J***	***4.43 J***	***8.71***	***5.84***	***2.69***	***1.7 J***	***2.37***	***1.3 J***	***3.45 J***	<1.22	***2.3 J***	***5.38***	<2.19	***3.84 J***	<1.6	***2.1 J***	<2	<3.2	***4.01 J***	***5.69***	--	***4.23 J***	***3.08 J***	***2.82 J***	***7.64***	***4.89 J***	<1.8	***3.87 J***
Copper, Dissolved	µg/L	NS	<20	<20	***26.7***	***24.3***	***29***	***15.4 J***	***12.9***	***5.47 J***	***3.38 J***	***3.63***	***2***	***2.41***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	***7.62***	<4	<4	<4	<4	<1	***3.24***	***1.86 J***	<0.821	<1.04	<0.18	***0.233 J***	<0.0967	<0.0967	<0.0967	<0.211	<0.211	<0.211	<0.324	<0.324	<0.25	<0.25	<0.27	<0.27	<0.27	<0.27	<0.11	<0.21	--	<0.21	<0.24	<0.24	<0.24	<0.24	<0.26	<0.26
Lead, Dissolved	µg/L	NS	<4	<4	<4	<4	<4	<1	***0.91***	<0.821	<0.821	<1.04	<0.18	<0.18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	µg/L	722	***761***	***354***	***313***	***594***	***256***	***505***	***288***	***328***	***282***	***1070***	***121***	***205***	***105***	***200***	***143***	***441***	***55***	***171***	***722***	***258***	***836***	***97.3***	***328***	***144***	***73.1***	***396***	***988***	--	***322***	***602***	***460***	***1270***	***402***	***30.4***	***353***
Nickel, Dissolved	µg/L	NS	***250***	***330***	***251***	***360***	***334***	***454***	***228***	***285***	***1100***	***904***	***134***	***195***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	<5	<5	<5	<5	<5	<1.69	***15.1***	<1.83	<1.83	<7.3	<0.7	<0.7	<3.34	<3.34	<3.34	***0.776 J***	<0.63	<0.63	<0.928	<0.928	<0.9	<0.9	<1	<1	<1	<0.96	<0.96	<0.96	<0.96	<1.4	<1.4	<1.4
Selenium, Dissolved	µg/L	NS	<5	<5	<5	<5	<5	<1.69	***22.5***	<1.83	<1.83	<7.3	<0.7	<0.7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	µg/L	100	<20	<20	<20	<20	<20	<1.7	<0.027	<1.7	<1.7	<0.395	<0.033	***0.0399 J***	<0.042	***0.055 J***	<0.042	<0.153	<0.153	<0.153	<0.14	<0.14	<0.3	<0.3	<0.37	<0.37	<0.37	<0.37	<0.42	--	<0.42	<0.49	<0.49	<0.49	<0.5	<0.5	***0.645 J***
Silver, Dissolved	µg/L	NS	<20	<20	<20	<20	<20	<1.7	<0.027	<1.7	<1.7	<0.395	<0.033	<0.033	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	<2	<2	<2	<2	<2	<0.84	<0.0087	<0.523	<0.523	<0.134	<0.05	***0.0571 J***	<0.0325	***0.038 J***	***0.035 J***	<0.0255	***0.038 J***	***0.028 J***	<0.0644	<0.0644	<0.17	<0.17	<0.27	<0.27	<0.26	<0.26	<0.26	--	<0.26	<0.26	<0.26	<0.26	<0.26	<0.57	<0.57
Thallium, Dissolved	µg/L	NS	<2	<2	<2	<2	<2	<0.84	***0.01 J***	<0.523	<0.523	<0.134	<0.05	<0.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium	µg/L	35	***52.2***	<50	<50	<50	<50	<2.1	***4.3***	***7.11 J***	<2.1	<4.17	***0.735 J***	***0.732 J***	***0.479***	<0.449	<0.449	<0.255	***0.309 J***	<0.255	<0.84	<0.84	<0.52	<0.52	<0.82	<0.82	<0.82	<0.85	<1.1	--	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Vanadium, Dissolved	µg/L	NS	<50	<50	<50	<50	<50	<2.1	***1.87***	***4.2 J***	<2.1	<4.17	<0.5	***0.998 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	2000	***107***	<20	<20	<20	<20	<9.11	***16.8***	***15.7 J***	***51.5***	<3.13	***3.73 J***	<2	<6.95	<6.95	<6.95	<5.21	<5.21	<5.21	<11.5	<11.5	<10	<10	<10	<10	<10	<10	<10	--	<10	<10	<10	<10	<6.4	<9.7	<9.7
Zinc, Dissolved	µg/L	NS	***84.7***	<20	<20	<20	<20	<9.11	***15.9***	***26.6***	***46.5***	***4.99 J***	***3.57 J***	<2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Appendix I Organics																																					
1,1,1,2-Tetrachloroethane	µg/L	70	<1	<1	<1	<1	<1	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	--	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38
1,1,1-Trichloroethane	µg/L	200	<1	<1	<1	<1	<1	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	--	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19
1,1,2,2-Tetrachloroethane	µg/L	0.3	<1	<4	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	--	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47
1,1,2-Trichloroethane	µg/L	5	<1	<1	<1	<1	<1	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	--	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45
1,1-Dichloroethane	µg/L	140	<1	<1	<1	<1	<1	***0.65 J***	***0.67 J***	***0.83 J***	***1.1***	***0.644 J***	***0.736 J***	<0.21	***0.666 J***	***0.942 J***	***0.533 J***	***0.318 J***	***0.501 J***	***0.619 J***	***0.423 J***	***0.741 J***	***0.706 J***	***0.595 J***	***0.503 J***	***0.682 J***	***0.574 J***	***0.651 J***	***0.611 J***	--	***0.476 J***	<0.22	***0.654 J***	***0.581 J***	<0.22	<0.22	***0.425 J***
1,1-Dichloroethylene	µg/L	7	<2	<2	<2	<2	<2	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	--	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56
1,2,3-Trichloropropane	µg/L	0.006	<1	<1	<1	<1	<1	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	--	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59
1,2-Dibromo-3-chloropropane	µg/L	0.2	<10	<10	<10	<10	<10	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	--	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2
1,2-Dibromoethane	µg/L	0.05	<10	<10	<10	<10	<10	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	--	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34
1,2-Dichlorobenzene	µg/L	600	<1	<1	<1	<1	<1	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	--	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37
1,2-Dichloroethane	µg/L	5	<1	<1	<1	<1	<1	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	--	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39
1,2-Dichloropropane	µg/L	5	***1.18***	***1.56***	***1.43***	***1.45***	<1	<0.87	***1.01***	***0.65 J***	***1.42***	<0.87	<0.87	***0.908 J***	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	***0.92 J***	***0.431 J***	***0.352 J***	***0.615 J***	***0.368 J***	***0.58 J***	***0.341 J***	--	***0.497 J***	***0.41 J***	***0.404 J***	***0.374 J***	<0.27	<0.27	***0.296 J***
1,4-Dichlorobenzene	µg/L	75	<1	<4	<1	<1	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	***0.237 J***	***0.366 J***	<0.23	<0.23	<0.23	***0.331 J***	<0.23	<0.23	--	***0.508 J***	<0.23	***0.497 J***	***0.421 J***	***0.544 J***	<0.23	***0.591 J***
2-Butanone	µg/L	4000	<10	<10	<10	<10	<10	***1.14 J***	***0.86 J***	<0.16	***0.78 J***	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<1.04	<1.04	<1.04	<1.04	<2.1	<2.1	<2.1	<2.1	***2.86 J***	<2.1	--	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1
2-Hexanone	µg/L	NS	<10	<10	<10	<10	<10	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<2	<2	<2	<2	<2	--	<2	<2	<2	<2	<2	<2	<2
4-Methyl-2-pentanone	µg/L	560	<10	<10	<10	<10	<10	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	--	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1
Acetone	µg/L	6300	<10	<10	<10	<10	<10	<1.79	<1.79	<1.79	***1.99 J***	<1.79	<1.79	<1.79	<1.79	***6.79 J***	<1.79	***2.28 J***	<1.79	<1.79	***2.28 J***	***2.79 J***	***3.85 J***	***5.71 J***	<3.1	***4.23 J***	<3.1	***4.61 J***	<3.1	--	<3.1	<3.1	<3.1	***3.89 J***	***3.37 J***	<3.1	<3.1
Acrylonitrile	µg/L	0.32	<10	<10	<10	<10	<10	<0.53	<0.53	<0.19	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	--	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2
Benzene	µg/L	5	***1.15***	***1.42***	***1.29***	***1.63***	***1.49***	***1.32***	***1.25***	***0.98***	***2.19***	***0.908***	***1.4***	***1.97***	***1.48***	***1.88***	***0.866***	<0.11	***0.622***	***1.29***	***0.609***	***1.59***	***1.6***	***1.4***	***0.679***	***1.22***	***0.824***	***1.56***	***0.8***	--	***1.32***	***0.564***	***1.14***	***0.646***	***0.955***	<0.22	***0.947***
Bromochloromethane	µg/L	90	<5	<5	<5	<5	<5	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	--	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54
Bromodichloromethane	µg/L	80	<1	<1	<1	<1	<1	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	--	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39
Bromomethane	µg/L	10	<4	<4	<4	<4	<20	<4	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	--	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Carbon disulfide	µg/L	700	<1	<4	<1	<1	<1	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	--	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45
Carbon Tetrachloride	µg/L	5	<2	<4	<2	<2	<2	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	--	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65
Chlorobenzene	µg/L	100	<1	<1	<1	<1	<1	<0.19	<0.19	<0.19	***0.2 J***	<0.17	<0.19	<0.19	<0.19	***0.317 J***	<0.19	<0.19	<0.19	<0.19	<0.19	***0.317 J***	***0.647 J***	<0.4	<0.4	<0.4	***0.409 J***	***0.677 J***	<0.4	--	***0.862 J***	***0.784 J***	***0.766 J***	***0.799 J***	***0.803 J***	<0.4	<0.4
Chloroethane	µg/L	2800	***5.31***	***7.82***	***8.14***	***8.17***	***4.57***	***4.86***	***4.52***	***3.87 J***	***5.35***	***3.52 J***	***3.5 J***	***4.72***	***3.62 J***	***4.28***	***2.48 J***	<0.15	***1.99 J***	***2.64 J***	***1.71 J***	***2.67 J***	***2.9 J***	***3.17 J***	<0.79	***2.44 J***	***1.65 J***	***1.86 J***	***1.7 J***	--	***1.19 J***	***1.15 J***	***0.848 J***	***1.79 J***	***1.11 J***	<0.79	***0.809 J***
Chloromethane	µg/L	NS	<3	<3	<3	<3	<3	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	***0.779 J***	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	--	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61
cis-1,2-Dichloroethylene	µg/L	70	***48.6***	***76.6***	***70***	***78***	***34.6***	***36.2***	***38***	***26.9***	***56.1***	***29.9***	***17***	***47***	***22.1***	***44***	***16.2***	***3.63***	***5.75***	***20.4***	***10.3***	***24.4***	***38***	***17.7***	***10.9***	***20.7***	***14.8***	***23.5***	***12.2***	--	***16.6***	***14.3***	***15.4***	***14.8***	***13.1***	***0.521 J***	***10.4***
cis-1,3-Dichloropropene	µg/L	NS	<5	<5	<5	<5	<5	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	--	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Dibromochloromethane	µg/L	80	<5	<5	<5	<5	<5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	--	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75
Dibromomethane	µg/L	70	<1	<1	<1	<1	<1	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	--	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Dichloromethane	µg/L	5	<5	<5	<5	<5	<5	***0.23 J***	***0.44 J***	<0.17	***0.45 J***	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	***0.194 J***	<0.17	<0.17	<0.17	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	--	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7
Ethylbenzene	µg/L	700	<1	<1	<1	<1	<1	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	--	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31
Iodomethane	µg/L	NS	<10	<50	<10	<10	<20	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<7	<7	<7	<7	<7	<7	--	<7	<7	<7	<7	<7	<7	<7
Styrene	µg/L	100	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	--	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37
Tetrachloroethylene	µg/L	5	<1	<1	<1	<1	<1	<0.18	***0.18 J***	<0.18	***0.21 J***	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	--	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48
Toluene	µg/L	1000	<1	<1	<1	<1	<1	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	--	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43
Trans-1,2-dichloroethylene	µg/L	100	***1.57***	***2.24***	***2.09***	***2.39***	***1.2***	***1.5***

Black Hawk County Landfill
Appendix H Results
Monitoring Well OW-402B

Constituent Name	Code	CPL	May-2011	Aug-2011	Nov-2011	Feb-2012	May-2012	Aug-2012	Nov-2012	Feb-2013	May-2013	Aug-2013	Oct-2013	Feb-2014	May-2014	Aug-14	Oct-14	Mar-15	Sep-15	Apr-17	Sep-17	Nov-17	Mar-18	Jul-18	Sep-18	Apr-19	Aug-19	Oct-19	Mar-20	Apr-20	Aug-20	Nov-20	Apr-21	Jul-21	Nov-21	Apr-22	May-22	Mar-23	Sep-23	Oct-24
Alcohols/Glycols by GC																																								
Acetonitrile	ug/L	NA	< 10000	--	--	--	--	< 126	--	--	--	--	--	--	--	< 126	--	*169 J*	--	< 126	--	< 126	--	--	< 126	--	< 126	--	< 884	--	--	< 494	--	< 469	--	--	--	--
Isobutanol	ug/L	2100	< 100000	--	--	--	--	< 577	--	--	--	--	--	--	--	< 577	--	< 577	--	< 577	--	< 577	--	--	< 577	--	< 577	--	< 5000	--	--	< 963	--	< 923	--	--	--	--
Pesticides (GC)																																							
2,4,5-T	ug/L	70	< 0.61	--	--	--	--	< 0.46	--	--	--	--	--	--	--	< 0.46	--	< 0.46	--	< 0.46	--	< 0.46	--	--	< 0.42	--	< 0.42	--	2.64	-2.36	+1.802	< 0.166	+0.76	+0.67	< 0.159	< 0.146	--	< 0.745	--
2,4-D	ug/L	70	0.67	0.42	*0.39 J*	*0.61 J*	< 0.37	< 0.37	--	--	--	--	--	--	--	< 0.37	--	< 0.37	--	< 0.37	--	< 0.37	--	--	< 0.37	--	< 0.37	--	1.08	-0.92	+0.16	< 0.154	+0.45	+0.67	< 0.146	< 0.0846	*0.809 J*	--	--
Silvex (2,4,5-TP)	ug/L	50	0.67	0.42	*0.39 J*	*0.61 J*	< 0.37	< 0.37	--	--	--	< 0.317	< 0.317	--	< 0.335	< 0.324	< 0.346	--	< 0.324	--	< 0.324	--	< 0.338	--	--	*1.22 J*	< 0.335	< 0.47	< 0.48	1.08	+0.672	+1.08	< 0.154	+0.45	+0.67	< 0.146	< 0.0846	*0.809 J*	--	--
Inorganics																																							
Ammonia	ug/L	200	< 100	--	--	--	--	< 1.1	--	--	--	--	--	--	--	< 1.1	--	< 1.1	--	< 3.24	--	< 1.1	--	--	< 4.3	--	< 5	--	< 5	--	--	< 5.3	--	< 8.3	--	--	--	--
Mercury	ug/L	2	< 0.2	--	--	--	--	< 0.0214	--	--	--	--	--	--	--	*0.1332 J*	< 0.0926	--	--	< 0.324	--	< 0.133	--	--	< 0.35	--	< 0.1	--	< 0.1	--	--	< 0.35	--	< 0.13	--	--	--	--
Sulfide	ug/L	NA	< 1000	--	--	--	--	< 120	--	--	--	--	--	--	--	< 120	--	< 120	--	< 233	--	< 233	--	--	< 233	--	< 233	--	< 1000	< 1000	< 200	< 233	< 231	< 233	< 231	< 231	< 1010	--	--
Tin	ug/L	4200	< 100	--	--	--	--	< 0.7	--	--	--	--	--	--	--	< 1.9	--	< 0.832	--	< 1.42	--	< 0.73	--	--	< 0.73	--	< 1.8	--	< 2	--	--	< 3	--	< 3	--	--	--	--
PCBs (EPA Method 8082)																																							
PCB-1016	ug/L	NA	< 0.6	--	--	--	--	< 0.0127	--	--	--	--	--	--	--	< 0.0473	--	< 0.0481	--	< 0.0481	--	< 0.0481	--	--	< 0.0481	--	< 0.0458	--	< 0.289	--	--	< 0.299	--	< 0.17	--	--	--	--
PCB-1221	ug/L	NA	< 0.6	--	--	--	--	< 0.158	--	--	--	--	--	--	--	< 0.158	--	< 0.159	--	< 0.159	--	< 0.159	--	--	< 0.159	--	< 0.159	--	< 0.289	--	--	< 0.299	--	< 0.17	--	--	--	--
PCB-1232	ug/L	NA	< 0.6	--	--	--	--	< 0.126	--	--	--	--	--	--	--	< 0.126	--	< 0.126	--	< 0.126	--	< 0.126	--	--	< 0.126	--	< 0.126	--	< 0.289	--	--	< 0.299	--	< 0.17	--	--	--	--
PCB-1242	ug/L	NA	< 0.6	--	--	--	--	< 0.12	--	--	--	--	--	--	--	< 0.12	--	< 0.12	--	< 0.12	--	< 0.12	--	--	< 0.12	--	< 0.12	--	< 0.289	--	--	< 0.299	--	< 0.17	--	--	--	--
PCB-1248	ug/L	NA	< 0.6	--	--	--	--	< 0.136	--	--	--	--	--	--	--	< 0.136	--	< 0.136	--	< 0.136	--	< 0.136	--	--	< 0.136	--	< 0.136	--	< 0.233	--	--	< 0.241	--	< 0.137	--	--	--	--
PCB-1254	ug/L	NA	< 0.6	--	--	--	--	< 0.114	--	--	--	--	--	--	--	< 0.114	--	< 0.105	--	< 0.105	--	< 0.105	--	--	< 0.105	--	< 0.0974	--	< 0.233	--	--	< 0.241	--	< 0.111	--	--	--	--
PCB-1260	ug/L	NA	< 0.6	--	--	--	--	< 0.0548	--	--	--	--	--	--	--	< 0.0473	--	< 0.05	--	< 0.05	--	< 0.05	--	--	< 0.0481	--	< 0.0458	--	< 0.233	--	--	< 0.241	--	< 0.111	--	--	--	--
Pesticides (EPA Method 8081A)																																							
4,4'-DDD	ug/L	0.73	< 0.032	--	--	--	--	< 0.0058	--	--	--	--	--	--	--	*0.00599 J*	*0.00507 J*	--	< 0.00592	--	< 0.005	--	--	--	*0.00394 J*	*0.0147 J*	--	< 0.00191	--	--	< 0.00966	--	< 0.027	--	--	--	--
4,4'-DDE	ug/L	0.52	< 0.032	--	--	--	--	< 0.0101	--	--	--	--	--	--	--	*0.00453 J*	*0.00953 J*	--	< 0.00536	--	< 0.0023	--	--	--	*0.00926 J*	*0.0123 J*	--	< 0.00231	--	--	< 0.00917	--	< 0.027	--	--	--	--
4,4'-DDT	ug/L	0.16	< 0.032	--	--	--	--	< 0.0098	--	--	--	--	--	--	--	< 0.00488	--	< 0.00489	--	< 0.0049	--	*0.00412 J*	--	--	< 0.00431	--	*0.00413 J*	--	< 0.00431	--	--	*0.00987 J*	--	< 0.042	--	--	--	--
Aldrin	ug/L	0.05	< 0.032	--	--	--	--	< 0.00476	--	--	--	--	--	--	--	< 0.00476	--	< 0.00506	--	*0.011 J*	--	< 0.00506	--	--	*0.00605 J*	--	*0.00896 J*	--	*0.0131 J*	--	--	*0.0213 J*	--	< 0.032	--	--	--	--
Alpha-BHC	ug/L	0.038	< 0.032	--	--	--	--	< 0.0039	--	--	--	--	--	--	--	*0.00418 J*	--	*0.0047 J*	--	< 0.00195	--	< 0.00195	--	--	< 0.00195	--	< 0.00185	--	< 0.00185	--	--	< 0.00185	--	< 0.0115	--	--	--	--
beta-BHC	ug/L	0.042	< 0.032	--	--	--	--	< 0.0048	--	--	--	--	--	--	--	*0.0111 J*	< 0.0048	*0.00746 J*	--	*0.012 J*	*0.0048*	*0.0103 J*	*0.00625 J*	*0.0162 J*	*0.0138 J*	*0.021 J*	--	*0.0105 J*	*0.0123 J*	< 0.00522	--	< 0.00149	< 0.042	< 0.027	< 0.027	< 0.027	--	0.0386
Delta-BHC	ug/L	0.04	< 0.032	--	--	--	--	< 0.0048	--	--	--	--	--	--	--	*0.00418 J*	--	*0.0047 J*	--	< 0.00195	--	< 0.00195	--	--	< 0.00195	--	< 0.00185	--	< 0.00185	--	--	< 0.00185	--	< 0.0115	--	--	--	--
Gamma-BHC	ug/L	0.2	< 0.032	--	--	--	--	< 0.0057	--	< 0.0023	--	--	< 0.0023	--	--	*0.00317 J*	< 0.0023	*0.00413 J*	--	< 0.0023	--	*0.00414 J*	--	--	< 0.0023	--	< 0.0023	--	< 0.0023	--	--	< 0.0023	--	< 0.0137	--	--	--	--
Heptachlor	ug/L	0.015	< 0.032	--	--	--	--	< 0.002	--	--	--	--	--	--	--	*0.0015 J*	*0.00185 J*	< 0.00216	--	< 0.00216	--	*0.00174 J*	--	--	*0.00217 J*	--	< 0.00216	--	< 0.00216	--	--	< 0.00216	--	< 0.027	--	--	--	--
Heptachlor-E	ug/L	42	< 0.032	--	--	--	--	< 0.002	--	--	--	--	--	--	--	< 0.00165	--	< 0.00165	--	*0.00196 J*	--	< 0.00165	--	--	< 0.00247	--	< 0.00216	--	< 0.00216	--	--	< 0.00216	--	< 0.0226	--	--	--	--
Heptachlor-II	ug/L	42	< 0.032	--	--	--	--	< 0.0058	--	--	--	--	--	--	--	< 0.00239	--	< 0.00243	--	< 0.00243	--	< 0.00243	--	--	< 0.00336	--	< 0.00207	--	< 0.00211	--	--	< 0.00207	--	< 0.0203	--	--	--	--
Methoxychlor	ug/L	35	< 0.032	--	--	--	--	< 0.0058	--	--	--	--	--	--	--	*0.00346 J*	< 0.0055	< 0.0058	--	< 0.0058	--	*0.0127 J*	--	--	< 0.00231	*0.00784 J*	*0.00889 J*	0.0826	< 0.00231	--	--	< 0.00231	< 0.0181	< 0.03	< 0.03	< 0.03	< 0.0192	--	--
Mirex	ug/L	2	< 0.032	--	--	--	--	*0.0101 J*	< 0.0058	< 0.00196	< 0.00191	*0.00271 J*	< 0.00191	--	--	< 0.00213	--	*0.00167 J*	--	< 0.00213	--	--	--	--	< 0.00216	--	*0.00118 J*	--	< 0.00211	--	--	< 0.00187	--	< 0.026	--	--	--	--
Perthrin (alkthy-II	ug/L	2.1	< 0.032	--	--	--	--	*0.00704 J*	< 0.0058	< 0.0073	--	--	< 0.0073	--	--	*0.00704 J*	< 0.0073	--	--	< 0.00651	--	--	--	--	< 0.00651	--	*0.0104 J*	--	< 0.00651	--	--	< 0.00651	--	< 0.026	--	--	--	--
gamma-BHC (Lindane)	ug/L	0.2	< 0.032	--	--	--	--	< 0.0019	--	--	--	--	--	--	--	*0.00378 J*	*0.0113 J*	--	< 0.00323	--	< 0.00323	--	--	--	*0.00926 J*	*0.00509 J*	--	< 0.00211	--	--	< 0.0153	--	< 0.026	--	--	--	--
Hepta-Sitr	ug/L	0.4	< 0.032	--	--	--	--	< 0.0026	--	--	--	--	--	--	--	< 0.00215	--	< 0.00219	--	< 0.00219	--	< 0.00219	--	--	< 0.00305	--	< 0.00207	--	< 0.00211	--	--	< 0.00207	--	< 0.0233	--	--	--	--
Hepta-Sitr-epoxide	ug/L	0.2	< 0.032	--	--	--	--	< 0.0061	--	--	--	--	--	--	--	< 0.00645	--	< 0.00659	--	< 0.00659	--	< 0.00659	--	--	< 0.00651	--	< 0.00676	--	< 0.00691	--	--	< 0.00691	--	< 0.0329	--	--	--	--
Methoxy-chlor	ug/L	40	< 0.032	--	--	--	--	< 0.00545	--	--	--	--	--	--	--	< 0.00509	--	< 0.00509	--	< 0.00509	--	< 0.00509	--	--	< 0.00651	--	*0.00569 J*	--	< 0.00691	--	--	*0.0104 J*	--	< 0.0181	--	--	--	--
Toxaphene	ug/L	3	<2	--	--	--	--	< 0.0545	--	--	--	--	--	--	--	< 0.0637	--	< 0.0624	--	< 0.0644	--	< 0.0644	--	--	< 0.0609	--	< 0.063	--	< 0.0648	--	--	< 0.0471	--	< 0.648	--	--	--	--
Semivolatile Organics by GC-MS																																							
1,2,4,5-Tetrachlorobenzene	ug/L	1.1	< 10	--	--	--	--	< 0.127	--	--	--	--	--	--	--	< 0.127	--	< 0.127	--	< 0.129	--	< 0.129	--	--	< 0.127	--	< 0.127	--	< 1.08	--	--	< 1.82	--	< 0.61	--	--	--	--
1,2,4-Trimethylbenzene	ug/L	NA	< 10	--	--	--	--	< 1.28	--	--	--	--	--	--	--	< 1.28	--	< 1.28	--	< 1.28	--	< 1.28	--	--	< 1.28	--	< 0.92	--	< 5.55	--	--	< 1.48	--	< 2.5	--	--	--	--
1,3-Dinitrobenzene	ug/L	NA	< 10	--	--	--	--	< 0.17	--	--	--	--	--	--	--	< 0.17	--	< 0.166	--	< 0.166	--	< 0.166	--	--	< 0.166	--	< 0.166	--	< 0.166	--	--	< 0.166	--	< 0.14	--	--	--	--
2,4-Dinitrotoluene	ug/L	NA	< 10	--	--	--	--	< 0.14	--	--	--	--	--	--	--	< 0.14	--	< 0.137	--	< 0.133	--	< 0.133	--	--	< 0.388	--	< 1.92	--	< 5.13	--	--	< 1.19	--	< 4	--	--	--	--
2,6-Dinitrotoluene	ug/L	NA	< 10	--	--	--	--	< 0.14	--	--	--	--	--	--	--	< 0.14	--	< 0.137	--	< 0.133	--	< 0.133	--	--	< 0.388	--	< 1.92	--	< 5.13	--	--	< 1.19	--	< 4	--	--	--	--
2-Methylnaphthalene	ug/L	28	< 10	--	--	--	--	< 0.24	--	--	--	--	--	--	--	< 0.24	--	< 0.304	--	< 0.258	--	< 0.258	--	--	< 0.258	--	< 1.2	--	< 5.04	--	--	< 1	--	< 2.78	--	--	--	--
2,4,6-Tribromophenol	ug/L	NA	< 10	--	--	--	--	< 0.32	--	--	--	--	--	--	--	< 0.32	--	< 0.405	--	< 0.348	--	< 0.348	--	--	< 0.743	--	< 3.78	--	< 5.29	--	--	< 1.25	--	< 5.49	--	--	--	--
2,4,6-Trichlorophenol	ug/L	NA	< 10	--	--	--	--	< 0.42	--	--	--	--	--	--	--	< 0.42	--	< 0.278	--	< 0.278	--	< 0.278	--	--	< 0.743	--	< 3.78	--	< 5.41	--	--	< 1.36	--	< 5.36	--	--	--	--
2,4-Dichlorophenol	ug/L	60	< 10	--	--	--	--	< 0.33	--	--	--	--	--	--	--	< 0.33	--	< 0.34	--	< 0.334	--	< 0.334	--	--	< 0.334	--	< 1.68	--	< 5.29	--	--	< 1.23	--	< 4.84	--	--	--	--
2,4-Dimethylphenol	ug/L	140	< 10	--	--	--	--	< 1.28	--	--	--	--	--	--	--	< 1.28	--	< 1.28	--	< 1.28	--	< 1.28	--	--	< 1.28	--	< 0.92	--	< 5.55	--	--	< 1.48	--	< 2.5	--	--	--	--
2,4-Dinitrophenol	ug/L	14	< 10	--	--	--	--	< 1.28	--	--	--	--	--	--	--	< 1.28	--	< 1.28	--	< 1.28	--	< 1.28	--	--	< 1.28	--	< 0.92	--	< 5.55	--	--	< 1.48	--	< 2.5	--	--	--	--
2,6-Dinitrotoluene	ug/L	0.05	< 10	--	--	--	--	< 0.19	--	--	--	--	--	--	--	< 0.19	--	< 0.244	--	< 0.244	--	< 0.244	--	--	< 0.488	--	< 2.49	--	< 5.26	--	--	< 1.25	--	< 7.11	--	--	--	--
2-Chloronaphthalene	ug/L	NA	< 10	--	--	--	--	< 0.27	--	--	--	--	--	--	--	< 0.27	--	< 0.27	--	< 0.27	--	< 0.27	--	--	< 0.27	--	< 2.19	--	< 5.29	--	--	< 1.25	--	< 6.767	--	--	--	--
2-Chlorophenol	ug/L	0.26	< 10	--	--	--	--	< 0.24	--	--	--	--	--	--	--	< 0.24	--	< 0.304	--	< 0.258	--	< 0.258	--	--	< 0.258	--	< 1.2	--	< 5.05	--	--	< 1.25	--	< 5.578	--	--	--	--
2-Acetylaminofluorene	ug/L	NA	< 10	--	--	--	--	< 0.24	--	--	--	--	--	--	--	< 0.24	--	< 0.304	--	< 0.304	--	< 0.304	--	--	< 0.304	--	< 0.7	--	< 5.03	--	--	< 1.36	--	< 3	--	--	--	--
2-Chloronaphthalene	ug/L	560	< 10	--	--	--	--	< 0.23	--	--	--	--	--	--	--	< 0.23	--	< 0.293	--	< 0.247	--	< 0.247	--	--	< 0.247	--	< 1.24	--	< 5.53	--	--	< 1.48	--	< 0.671	--	--	--	--
2-Chlorophenol	ug/L	60	< 10	--	--	--	--	< 0.33	--	--	--	--	--	--	--	< 0.33	--	< 0.34	--	< 0.334	--	< 0.334	--	--	< 0.334	--	< 1.68	--	< 5.29	--	--	< 1.25	--	< 9.6	--	--	--	--
2-Methylnaphthalene	ug/L	28	< 10	--	--	--	--	< 0.19	--	--	--	--	--	--	--	< 0.19	--	< 0.233	--	< 0.209	--	< 0.209	--	--	< 0.209	--	< 1.03	--	< 5.53	--	--	< 1.48	--	< 0.656	--	--	--	--
2-Methylphenol (o-Cresol)	ug/L	35	< 10	--	--	--	--	< 0.38	--	--	--	--	--	--	--	< 0.38	--	< 0.434	--	< 0.356	--	< 0.356	--	--	< 0.356	--	< 0.919	--	< 5.18	--	--	< 1.36	--	< 5.229	--	--	--	--
2-Naphthylamine	ug/L	0.057	< 10	--	--	--	--	< 0.22	--	--	--	--	--	--	--	< 0.22	--	< 0.278	--	< 0.237	--	< 0.237	--	--	< 0.237	--	< 1.19	--	< 5.01	--	--	< 0.957	--	< 2.23	--	--	--	--
2-Nitroaniline	ug/L	60	< 10	--	--	--	--	< 0.22	--	--	--	--	--	--	--	< 0.22	--	< 0.278	--	< 0.237	--	< 0.237	--	--	< 0.237	--	< 1.19	--	< 5.01	--	--	< 0.957	--	< 2.23	--	--	--	--
2-Nitrophenol	ug/L	NA	< 10	--	--	--	--	< 0.38	--	--	--	--	--	--	--	< 0.38	--	< 0.434	--	< 0.356	--	< 0.356	--	--	< 0.356	--	< 0.919	--	< 5.18	--	--	< 1.36	--	< 5.229	--	--	--	--
3,3'-Dichlorobenzidine	ug/L	0.39	< 10	--	--	--	--	< 0.46	--	--	--	--	--	--	--	< 0.46	--	< 0.566	--	< 0.499	--	< 0.499	--	--	< 0.874	--	< 4.38	--	< 5.12	--	--	< 1.69	--	< 11.08	--	--	--	--
3,3'-Dimethylbenzidine	ug/L	NA	< 10	--	--	--	--	< 0.25	--	--	--	--	--	--	--	< 0.25	--	< 0.304	--	< 0.268	--	< 0.268	--	--	< 0.268	--	< 1.14	--	< 5.05	--	--	< 1.27	--	< 5.87	--	--	--	--
3/4-Methylphenol	ug/L	70	< 10	--	--	--	--	< 0.38	--	--	--	--	--	--	--	< 0.38	--	< 0.228	--	*0.2663 J*	--	< 0.159	--	--	< 0.973	--	< 0.884	--	< 0.779	--	--	< 0.864	--	< 0.779	--	--	--	--
3-Methylcholanthrene	ug/L	0.13	< 10	--	--	--	--	< 0.33	--	--	--	--	--	--	--	< 0.33	--	< 0.392	--	< 0.392	--	< 0.392	--	--	< 0.392	--	< 1.61	--	< 5.74	--	--	< 1.25	--	< 5.356	--	--	--	--
3-Nitroaniline	ug/L	NA	< 10	--	--	--	--	< 0.22	--	--	--	--	--	--	--	< 0.22	--	< 0.278	--	< 0.237	--	< 0.237	--	--	< 0.424	--	< 1.14	--	< 5.18	--	--	< 1.14	--	< 3	--	--	--	--
4,6-Dinitro-2-methylphenol	ug/L	0.765	< 10	--	--	--	--	< 0.28	--	--	--	--	--	--	--	< 0.28	--	< 0.362	--	< 0.297	--	< 0.297	--	--	< 0.297	--	< 2.36	--	< 5.05	--	--	< 2.27	--	< 5.87	--	--	--	--
4-Aminobiphenyl	ug/L	0.00083	< 10	--	--	--	--	< 0.3	--	--	--	--	--	--	--	< 0.3	--	< 0.38	--	< 0.325	--	< 0.325	--	--	< 0.325	--	< 1.62	--	< 5.13	--	--	< 1.09	--	< 2.48	--	--	--	--
4-Bromophenyl phenyl ether	ug/L	NA	< 10	--	--	--	--	< 0.19	--	--	--	--	--	--	--	< 0.19	--	< 0.352	--	< 0.352	--	< 0.352	--	--	< 0.352	--	< 1.57	--	< 5.14	--	--	< 1.25	--	< 5.778	--	--	--	--
4-Chloro-3-methylphenol	ug/L	700	< 10	--	--	--	--	< 0.19	--	--	--	--	--	--	--	< 0.19	--	< 0.241	--	< 0.204	--	< 0.204	--	--	< 0.28	--	< 1.45	--	< 5.12	--	--	< 1.08	--	< 0.843	--	--	--	--
4-Chloroaniline	ug/L	28	< 10	--	--	--	--	< 0.19	--	--	--	--	--	--	--	< 0.19	--	< 0.241	--	< 0.204	--	< 0.204	--	--	< 0.204	--	< 0.913	--	< 5.36	--	--	< 0.989	--	< 0.699	--	--	--	--
4-Chlorophenyl phenyl ether	ug/L	NA	< 10	--	--	--	--	< 0.22	--	--	--	--	--	--	--	< 0.22	--	< 0.309	--	< 0.269	--	< 0.269	--	--	< 0.269	--	< 1.25	--	< 5.53	--	--	< 1.48	--	< 0.767	--	--	--	--
4-Nitroaniline	ug/L	NA	< 10	--	--	--	--	< 0.22	--	--	--	--	--	--	--	< 0.22	--	< 0.278	--	< 0.237	--	< 0.237	--	--	< 0.424	--	< 1.14	--	< 5.18	--	--	< 1.14	--	< 3	--	--	--	--
4-Nitrophenol	ug/L	60	< 10	--	--	--	--	< 0.32	--	--	--	--	--	--	--	< 0.32	--	< 0.405	--	< 0.348	--	< 0.348	--	--	< 0.348	--	< 1.68	--	< 5.29	--	--	< 1.25	--	< 5.44	--	--	--	--
4-Nitroquinoline-1-oxide	ug/L	NA	< 10	--	--	--	--	< 0.17	--	--	--	--	--	--	--	< 0.17	--	< 0.215	--	< 0.189	--	< 0.189	--	--	< 0.919	--	< 0.92	--	< 5.13	--	--	< 0.92	--	< 5.13	--	--	--	--
5-Nitro-o-toluidine	ug/L	NA	< 10	--	--	--	--	< 0.17	--	--	--	--	--	--	--	< 0.17	--	< 0.215	--	< 0.189	--	< 0.189	--	--	< 0.919	--	< 0.92	--	< 5.13	--	--	< 0.92	--	< 5.13	--	--	--	--
6-Methylchrysene	ug/L	0.13	< 10	--	--	--	--	< 0.33	--	--	--	--	--	--	--	< 0.33	--	< 0.392	--	< 0.392	--	< 0.392	--	--	< 0.392	--	< 1.61	--	< 5.74	--	--	< 1.25	--	< 5.356	--	--	--	--
Acenaphthene	ug/L	420	< 10	--	--	--	--	< 0.3	--	--	--	--	--	--	--	< 0.3	--	< 0.376	--	< 0.325	--	< 0.325	--	--	< 0.325	--	< 1.62	--	< 5.13	--	--	< 1.48	--	< 0.713	--	--	--	--
Acenaphthylene	ug/L	210	< 10	--	--	--	--	< 0.25	--	--	--	--	--	--	--	< 0.25	--	< 0.304	--	< 0.258	--	< 0.258	--	--	< 0.643	--	< 1.14	--	< 5.53	--	--	< 1.48	--	< 0.8	--	--	--	--
Acetophenone	ug/L	NA	< 10	--	--	--	--	< 0.22	--	--	--	--	--	--	--	< 0.22	--	< 0.278	--	< 0.237	--	< 0.237	--	--	< 0.379	--	< 1.89	--	< 5.53	--	--	< 1.41	--	< 0.767	--	--	--	--
Anthracene	ug/L	2100	< 10	--	--	--	--	< 0.17	--	--	--	--	--	--	--	< 0.17	--	< 0.215	--	< 0.189	--	< 0.189	--	--	< 0.919	--	< 0.92	--	< 5.13	--	--	< 1.25	--	< 0.767	--	--	--	--
Benzo (a) anthracene	ug/L	0.18	< 10	--	--	--	--	< 0.24	--	--	--	--	--	--	--	< 0.24	--	< 0.304	--	< 0.258	--	< 0.258	--	--	< 0.386	--	< 1.84	--	< 5.29	--	--	< 1.25	--	< 0.944	--	--	--	--
Benzo (a) pyrene	ug/L	0.2	< 10	--	--	--	--	< 0.24	--	--	--	--	--	--	--	< 0.24	--	< 0.304	--	< 0.258	--	< 0.258	--	--	< 0.258	--	< 1.2	--	< 5.05	--	--	< 1.27	--	< 9	--	--	--	--
Benzo (b) fluoranthene	ug/L	0.18	< 10	--	--	--	--	< 0.33	--	--	--	--	--	--	--	< 0.33	--	< 0.392	--	< 0.392	--	< 0.392	--	--	< 1.08	--	< 1.61	--	< 5.74	--	--	< 1.36	--	< 5.44	--	--	--	--
Benzo (g,h,i) perylene	ug/L	0.26	< 10	--	--	--	--	< 0.17	--	--	--	--	--	--	--	< 0.17	--	< 0.215	--	< 0.189	--	< 0.189	--	--	< 0.919	--	< 0.92	--	< 5.13	--	--	< 1.36	--	< 5.44	--	--	--	--
Benzo (k) fluoranthene	ug/L	1.8	< 10	--	--	--	--	< 0.17	--	--	--	--	--	--	--	< 0.17	--	< 0.215	--	< 0.189	--	< 0.189	--	--	< 0.919	--	< 0.92	--	< 5.13	--	--	< 1.36	--	< 5.44	--	--	--	--
Benzoic Acid	ug/L	700	< 10	--	--	--	--	< 0.18	--	--	--	--	--	--	--	< 0.18	--	< 0.228	--	< 0.194	--	< 0.194	--	--	< 0.648	--	< 3.24	--	< 5.26	--	--	< 1.25	--	< 1.44	--	--	--	--
Benzyl alcohol	ug/L	700	< 10	--	--	--	--	< 0.18	--	--	--	--	--	--	--	< 0.18	--	< 0.228	--	< 0.194	--	< 0.194	--	--	< 0.648	--	< 3.24	--	< 5.26	--	--	< 1.25	--	< 1.44	--	--	--	--
Bis(2-chloroethoxy)methane	ug/L	NA	< 10	--	--	--	--	< 0.26	--	--	--	--	--	--	--	< 0.26	--	< 0.34	--	< 0.28	--	< 0.28	--	--	< 0.28	--	< 1.41	--	< 5.29	--	--	< 1.25	--	< 0.844	--	--	--	--
Bis(2-chloroethyl) Ether	ug/L	0.16	< 10	--	--	--	--	< 0.18	--	--	--	--

Black Hawk County Landfill
Appendix I Results
Monitoring Well MW-409B

Parameter Name	Units	GPS	Jul-10	Sep-10	Dec-10	Feb-11	May-11	Aug-11	Nov-11	Feb-12	May-12	Dec-12	Apr-13	Oct-13	Mar-14	Aug-14	Feb-15	Aug-15	Mar-16	Sep-16	Mar-17	Sep-17	Mar-18	Jul-18	Sep-18	Apr-19	Sep-19	Apr-20	Sep-20	Mar-21	Nov-21	Apr-22	Nov-22	Mar-23	Sep-23	May-24	Oct-24	Jan-25
Appendix I Inorganics																																						
Total Suspended Solids	mg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	***21***	***8.33***	***13.9***	***7.33***	***23.3***	***15.8***	***8***	***9***	***17***	***38.7***	***13.5***	***22.4***	***17.4***	***38***	***19***	***21***	***16***	***43***	***14.8***	***12.5***	***38***	***29.5***	***17***
Turbidity, Field	NTU	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	***0.9383***	***5.224***	***0.3369***	***2.664***	***1.987***	***7.444***	***0.4152***	***18.31***	***39.46***	***4.636***	***2.37***	***3.73***	***34.15***	***7.86***	***6.18***	***14.1***	***6.42***	***0.19***	***10.97***	***3.11***	***18.42***	***3.88***	***24.29***
Turbidity, Lab	NTU	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	***88***	***39.6***	***59.4***	***15.6***	***30.2***	***69***	***28.2***	***17.6***	***18.6***	***108***	***24.1***	***121***	***28.1***	--	--	--	--	--	--	--	--	--	--
Antimony	µg/L	6	<6	<6	<6	<6	<6	***6.2***	<2.73	<0.12	<0.6	<0.584	<0.271	***0.614 J***	<0.4	<0.161	<0.161	<0.161	<0.237	<0.237	<0.185	<0.185	<0.42	<0.42	<0.42	<0.53	<0.53	<0.58	<0.51	<1.1	<1.1	<0.69	<0.69	***0.803 J***	<1	<1	<1	--
Antimony, Dissolved	µg/L	NS	<6	<6	<6	<6	<6	<6	<2.73	<0.12	<0.6	<0.584	<0.271	<0.4	<0.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	<1	<1	<2	<1	<18	<2	***1.28***	***4.14***	<3.65	***3.36***	***3.41 J***	***3.29 J***	***1.55 J***	***1.57 J***	***2.13***	***1.17 J***	***1.24 J***	***1.7 J***	***1.02 J***	***1.45 J***	***1.16 J***	***1.84 J***	***3.82***	***1.34 J***	***4.56***	***2.02***	***2.81***	***1.33 J***	***4.01***	***1.42 J***	***5.73***	***1.55 J***	***2.04***	***3.83***	***5.06***	***2.82***
Arsenic, Dissolved	µg/L	NS	<1	<1	<1	<1	<28	<2	***0.776 J***	***3.93***	<3.65	***2.42***	***6.86***	***3.45 J***	***2.49 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	***260***	***121***	***269***	***155***	***83.5***	***82.6***	***73***	***139***	***69.4***	***84.7***	***83.3***	***127***	***84.9***	***50.9***	***44.1***	***47.4***	***37.2***	***40.7***	***34.1***	***43***	***27.5***	***27.6***	***46.6***	***28.4***	***33.7***	***24.7***	***70.3***	***30.6***	***34.6***	***28.1***	***29.5***	***45.9***	***27.2***	***35.8***	***28.7***	--
Barium, Dissolved	µg/L	NS	***186***	***76.2***	***94.4***	***59.3***	***81.5***	***68.2***	***69.8***	***88.2***	***63***	***64.8***	***63.7***	***60.2***	***56.7***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	<1	<1	<1	<1	<1	<1	<0.051	***0.1 J***	<0.089	<0.169	<0.348	<0.08	<0.08	<0.039	<0.039	<0.039	<0.221	<0.221	<0.125	<0.125	<0.19	<0.19	<0.19	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.33	<0.33	<0.33	--
Beryllium, Dissolved	µg/L	NS	<1	<1	<1	<1	<1	<1	<0.051	<0.0178	<0.089	<0.169	<0.348	<0.08	<0.08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	<0.5	<0.5	***0.611***	<0.5	<0.5	<0.5	<0.124	***0.62***	<0.32	<0.195	<0.53	***0.525 J***	***0.287 J***	<0.112	<0.112	<0.112	***0.046 J***	<0.0351	***0.054 J***	***0.061 J***	***0.061 J***	***0.103 J***	***0.074 J***	<0.077	<0.039	***0.042 J***	<0.049	<0.051	***0.07 J***	<0.055	<0.055	<0.055	<0.1	<0.1	<0.1	--
Cadmium, Dissolved	µg/L	NS	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	***0.147 J***	***0.27 J***	<0.32	<0.195	<0.53	<0.1	<0.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	<20	<20	<20	<20	<20	<20	<1.81	***1.94***	***3.05 J***	***3.33 J***	<2.09	***2.88***	***0.786 J***	<1.24	<1.24	<1.24	<0.355	<0.355	<0.729	<0.729	<0.76	<0.76	<0.76	<0.98	<0.98	<1.1	***2.05 J***	<1.1	<1.1	<1.1	<1.1	<1.1	<1.2	<1.2	--
Chromium, Dissolved	µg/L	NS	<20	<20	<20	<20	<20	<20	<1.81	<0.39	<1.95	<1.81	<2.09	<0.5	<0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	9.83	<20	<20	<20	<20	<20	***20.5***	***17.3 J***	***20.7***	***17.4***	***20***	***22.6***	***28.1***	***20.9***	***19.6***	***20***	***18.7***	***16.4***	***16.3***	***11.8***	***16.3***	***7.11***	***13.4***	***7.9***	***13.8***	***14.5***	***2.43***	***6.59***	***5.41***	***9.58***	***7.88***	***6.22***	***7.21***	***5.81***	***11.1***	***7.88***	--
Cobalt, Dissolved	µg/L	NS	<20	<20	<20	<20	<20	<20	***17.7 J***	***21.2***	***20.4***	***20***	***22.9***	***28.9***	***22.3***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	1300	***26.9***	<20	<20	***22***	***24.6***	***25.9***	***13.5 J***	***11.1***	***1.5 J***	***6.53 J***	***3.13***	***10.5***	***3.63***	***0.916 J***	<0.485	***1.26 J***	***1.97 J***	<1.22	<2.19	<2.19	<1.6	<1.6	<1.6	<2	<2	<3.2	***3.34 J***	<1.4	***1.76 J***	***3.07 J***	<1.8	***2.49 J***	<1.8	***5***	<1.8	--
Copper, Dissolved	µg/L	NS	<20	<20	<20	<20	***22.5***	***26.8***	***14.3 J***	***6.03***	***1.35 J***	***2.25 J***	***1.41 J***	***1.16 J***	***1.04 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	<4	<4	***4.52***	<4	<4	<4	***1.36 J***	***3.32***	<0.145	<0.821	<1.04	***5.04***	***0.926 J***	***0.175 J***	<0.0967	***0.191 J***	***0.479 J***	<0.211	<0.324	<0.324	<0.25	<0.25	<0.25	<0.27	<0.27	<0.27	***0.383 J***	***0.293 J***	***0.468 J***	<0.24	<0.24	<0.24	***0.291 J***	***0.33 J***	<0.26	--
Lead, Dissolved	µg/L	NS	<4	<4	<4	<4	<4	<4	<1	***0.46 J***	<0.145	<0.821	<1.04	***0.379 J***	<0.18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	µg/L	722	<50	<50	<50	<50	<50	<50	***7.5 J***	***19.5***	***3.4***	***9.64 J***	***13.3***	***20.4***	***13.4***	***9.44***	***12.5***	***17.2***	***10.9***	***7.94***	***6.2***	***8.8***	***5.46***	***11.2***	***3.93 J***	***10.2***	***9.53***	***2.52 J***	***7.11***	***5.79***	***8.21***	***7***	***4.59 J***	***5.14***	***6.15***	***9.19***	***6.66***	--
Nickel, Dissolved	µg/L	NS	<50	<50	<50	<50	<50	<50	***7.37 J***	***25.3***	***2.25 J***	***8.72 J***	***14.1***	***20.1***	***13.6***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	<5	<5	<5	<5	<5	<5	<1.69	<0.297	<1.48	<1.83	<7.3	***1.36 J***	<0.7	<3.34	<3.34	<3.34	***0.641 J***	<0.63	<0.928	<0.928	<0.9	<0.9	<0.9	<1	<1	***1.49 J***	<1	<0.96	<0.96	<0.96	<0.96	<1.4	***1.66 J***	<1.4	--
Selenium, Dissolved	µg/L	NS	<5	<5	<5	<5	<5	<5	<1.69	<0.297	<1.48	<1.83	***9.76 J***	<0.7	<0.7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	µg/L	100	<20	<20	<20	<20	<20	<20	<1.7	<0.027	<0.135	***1.91 J***	<0.395	<0.0033	<0.0033	<0.042	<0.042	<0.042	<0.153	<0.153	<0.14	<0.14	<0.3	<0.3	<0.3	<0.37	<0.37	<0.37	<0.37	<0.37	<0.42	<0.42	<0.49	<0.49	<0.5	***0.863 J***	<0.5	--
Silver, Dissolved	µg/L	NS	<20	<20	<20	<20	<20	<20	<1.7	<0.027	<0.135	<1.7	<0.395	<0.0033	<0.0033	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	<2	<2	<2	<2	<2	<2	<0.84	<0.0087	<0.0435	<0.523	<0.134	<0.05	<0.05	<0.0325	<0.0325	***0.044 J***	***0.026 J***	<0.0255	<0.0644	<0.0644	<0.17	<0.17	<0.17	<0.27	<0.27	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.57	<0.57	--
Thallium, Dissolved	µg/L	NS	<2	<2	<2	<2	<2	<2	<0.84	<0.0087	<0.0435	<0.523	<0.134	<0.05	***0.0548 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium	µg/L	35	<50	<50	<50	<50	<50	<50	<2.1	***3.73***	<4.7	<2.1	<4.17	***1.86 J***	***1.15 J***	<0.449	<0.449	<0.449	***0.417 J***	<0.255	<0.84	<0.84	***0.657 J***	<0.52	<0.52	<0.82	<0.82	***1.04 J***	<0.85	<1.1	<1.1	***1.31 J***	<1.1	<1.1	<1.1	<1.1	<1.1	--
Vanadium, Dissolved	µg/L	NS	<50	<50	<50	<50	<50	<50	<2.1	<0.94	<4.7	<2.1	<4.17	<0.5	<0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	2000	***172***	***59.1***	***83***	***68.5***	<20	<20	<9.11	***13.6***	<4.6	***37***	<3.13	***10.4***	***4.43 J***	<6.95	<6.95	***7.29 J***	<5.21	***6.18 J***	<11.5	<11.5	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	***7.86 J***	<9.7	<9.7	--
Zinc, Dissolved	µg/L	NS	***60.1***	***44.1***	***74.2***	***71.6***	<20	<20	<9.11	***12.4***	<4.6	***47***	<3.13	***7.13 J***	***7.99 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Appendix I Organics																																						
1,1,1,2-Tetrachloroethane	µg/L	70	<1	<5	<1	<1	<1	<1	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	--	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	--
1,1,1-Trichloroethane	µg/L	200	<1	<1	<1	<1	<1	<1	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	--	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	--
1,1,2,2-Tetrachloroethane	µg/L	0.3	<1	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	--	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	--
1,1,2-Trichloroethane	µg/L	5	<1	<1	<1	<1	<1	<1	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	--	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	--
1,1-Dichloroethane	µg/L	140	<1	<1	<1	<1	<1	<1	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	--	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--
1,1-Dichloroethylene	µg/L	7	<2	<2	<2	<2	<2	<2	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	--	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	--
1,2,3-Trichloropropane	µg/L	0.006	<1	<1	<1	<1	<1	<1	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	--	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	--
1,2-Dibromo-3-chloropropane	µg/L	0.2	<10	<10	<10	<10	<10	<10	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	--
1,2-Dibromoethane	µg/L	0.05	<10	<10	<10	<10	<10	<10	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	--	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	--
1,2-Dichlorobenzene	µg/L	600	<1	<1	<1	<1	<1	<1	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	--	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	--
1,2-Dichloroethane	µg/L	5	<1	<1	<1	<1	<1	<1	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	--	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	--
1,2-Dichloropropane	µg/L	5	<1	<1	<1	<1	<1	<1	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	--	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	--
1,4-Dichlorobenzene	µg/L	75	<1	<1	<1	<1	<1	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	--	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	--
2-Butanone	µg/L	4000	<10	<10	<10	<10	<10	<10	<0.47	<0.47	***0.63 J***	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<1.04	<1.04	<1.04	--	***5.34 J***	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	--
2-Hexanone	µg/L	NS	<10	<10	<10	<10	<10	<10	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	--	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	--
4-Methyl-2-pentanone	µg/L	560	<10	<10	<10	<10	<10	<10	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	--
Acetone	µg/L	6300	<10	<10	<10	<10	<10	<10	***2.8 J***	<1.79	<1.79	<1.79	<1.79	<1.79	<1.79	***2.32 J***	<1.79	<1.79	<1.79	<1.79	***2.4 J***	<1.79	***4.98 J***	--	***5.01 J***	<3.1	<3.1	<3.1	***7.08 J***	<3.1	***5.24 J***	<3.1	<3.1	<3.1	<3.1	***6.25 J***	<3.1	--
Acrylonitrile	µg/L	0.32	<10	<10	<10	<10	<10	<10	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	--	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	--
Benzene	µg/L	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	***0.32 J***	***0.3 J***	***0.57***	***0.58***	***0.589***	***0.445 J***	***0.394 J***	***0.534***	***0.385 J***	***0.395 J***	***0.268 J***	***0.302 J***	***0.378 J***	***0.254 J***	<0.11	--	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--
Bromochloromethane	µg/L	90	<5	<5	<5	<5	<5	<5	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	--	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	--
Bromodichloromethane	µg/L	80	<1	<1	<1	<1	<1	<1	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	--	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	--
Bromomethane	µg/L	10	<4	<4	<4	<4	<4	<4	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	--
Carbon disulfide	µg/L	700	<5	<10	<1	<1	<1	<1	<0.15	<0.15	<0.15	<0.15	<0.15	***0.301 J***	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	--	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	--
Carbon Tetrachloride	µg/L	5	<5	<5	<2	<2	<2	<2	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	--	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	--
Chlorobenzene	µg/L	100	<1	<1	<1	<1	<1	<1	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	--
Chloroethane	µg/L	2800	<4	<4	<4	<4	<4	<4	<0.15	***0.52 J***	<0.15	***1.26 J***	<0.15	***2.43 J***	***0.833 J***	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	--	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	--
Chloromethane	µg/L	NS	<3	<3	<3	<3	<3	<3	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	--	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	--
cis-1,2-Dichloroethylene	µg/L	70	<1	<1	<1	***3.69***	<1	<1	***0.41 J***	***0.36 J***	***0.76 J***	***0.62 J***	***0.692 J***	***0.488 J***	***0.577 J***	***0.251 J***	<0.13	***0.211 J***	<0.13	<0.13	***0.296 J***	***0.244 J***	<0.13	--	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	--
cis-1,3-Dichloropropene	µg/L	NS	<5	<10	<10	<5	<5	<5	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	--	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	--
Dibromochloromethane	µg/L	80	<5	<5	<5	<5	<5	<5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	--	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	--
Dibromomethane	µg/L	70	<1	<1	<1	<1	<1	<1	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	--	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	--
Dichloromethane	µg/L	5	<1	<5	<5	<5	<5	<5	<0.17	***0.55 J***	<0.17	<0.17	<0.17	<0.17	***0.651 J***	***0.456 J***	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	--	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	--
Ethylbenzene	µg/L	700	<1	<1	<1	<1	<1	<1	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	--	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	--
Iodomethane	µg/L	NS	<10	<20	<10	<10	<10	<20	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	***3.71 J***	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	--	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	--
Styrene	µg/L	100	<4	<1	<2	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	--	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	--
Tetrachloroethylene	µg/L	5	<1	<1	<1	<1	<1	<1	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	--	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	--
Toluene	µg/L	1000	<1	<1	<1	<1	<1	***0.62 J***	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	***0.242 J***	<0.15	<0.15	--	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	--
Trans-1,2-dichloroethylene	µg/L	100	<1	<1	<1	<1	<1	<1	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	--	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	--
trans-1,3-Dichloropropene	µg/L	NS	<5	<10	<10	<5	<5	<5	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--	<0.56

Black Hawk County Landfill
Appendix II Results
Monitoring Well MW-409B

Parameter Name	Units	GPS	Apr. 2013	June 2013	Oct. 2013	Jan. 2014	Mar. 2014	Jun. 2014	Aug. 2014	Dec. 2014	Feb. 2015	Aug. 2015	Sep. 2016	Sep. 2017	Sep-18	Sep-19	Nov-21	Nov-22
Alcohols/Gycols by GC																		
Acetonitrile	µg/L	NS	<126	--	--	--	<126	--	--	--	--	<126	<126	<126	<126	<126	<404	<404
Isobutanol	µg/L	2100	<177	--	--	--	<177	--	--	--	--	<177	<177	<177	<177	<177	<553	<553
Herbicides (GC)																		
2,4,5-T	µg/L	70	<0.468	--	--	--	<0.459	--	--	--	--	<0.503	<0.509	<0.511	<0.536	<0.511	<0.156	<0.07
2,4-D	µg/L	70	<0.502	--	--	--	<0.493	--	--	--	--	<0.541	<0.546	<0.548	<0.576	<0.549	<0.609	<0.2
Silvex (2,4,5-TP)	µg/L	50	<0.312	--	--	--	<0.307	--	--	--	--	<0.336	<0.34	<0.341	<0.358	<0.341	<0.143	<0.07
Inorganics																		
Cyanide	µg/L	200	<5.12	--	--	--	<3.1	--	--	--	--	<3.04	<3.52	<3.46	<4.2	<5	<5.3	<4.3
Mercury	µg/L	2	***0.0261 J***	<0.25	<0.25	***0.109 J***	<0.71	--	--	--	--	<0.0926	<0.142	<0.112	<0.15	<0.1	<0.15	<0.11
Sulfide	µg/L	NS	<128	--	--	--	<219	--	--	--	--	<219	<180	<231	<231	<231	<231	<231
Tin	µg/L	4200	<1.9	--	--	--	<121	--	--	--	--	<12.1	<0.832	<1.62	***1.38 J***	<1.8	<3	<3
PCBs (EPA Method 8082)																		
PCB-1016	µg/L	NS	<0.0452	--	--	--	<0.0457	--	--	--	--	<0.0443	<0.0472	<0.0482	<0.0488	<0.0467	<0.286	<0.181
PCB-1221	µg/L	NS	<0.167	--	--	--	<0.168	--	--	--	--	<0.163	<0.174	<0.178	<0.18	<0.172	<0.286	<0.181
PCB-1232	µg/L	NS	<0.115	--	--	--	<0.116	--	--	--	--	<0.112	<0.12	<0.122	<0.124	<0.118	<0.286	<0.181
PCB-1242	µg/L	NS	<0.135	--	--	--	<0.137	--	--	--	--	<0.133	<0.141	<0.144	<0.146	<0.14	<0.286	<0.181
PCB-1248	µg/L	NS	<0.115	--	--	--	<0.116	--	--	--	--	<0.112	<0.12	<0.122	<0.124	<0.118	<0.231	<0.117
PCB-1254	µg/L	NS	<0.0958	--	--	--	<0.0968	--	--	--	--	<0.0939	<0.1	<0.102	<0.103	<0.0989	<0.231	<0.117
PCB-1260	µg/L	NS	<0.0458	--	--	--	<0.0463	--	--	--	--	<0.0449	<0.0478	<0.0489	<0.0494	<0.0473	<0.231	<0.117
Pesticides (EPA Method 8081A)																		
4,4'-DDD	µg/L	0.73	<0.00184	--	--	--	<0.00189	--	--	--	--	<0.0018	<0.00198	<0.00225	<0.00202	<0.00193	<0.00923	<0.0287
4,4'-DDE	µg/L	0.51	<0.00214	--	--	--	<0.00221	--	--	--	--	<0.0021	<0.00231	<0.00263	<0.00236	<0.00225	<0.00934	<0.0287
4,4'-DDT	µg/L	0.51	<0.00388	--	--	--	<0.004	--	--	--	--	<0.0038	<0.00418	<0.00475	<0.00427	<0.00406	<0.0132	<0.0447
Aldrin	µg/L	0.01	<0.00459	--	--	--	<0.00474	--	--	--	--	<0.0045	<0.00495	<0.00563	<0.00506	<0.00481	<0.0132	<0.034
alpha-BHC	µg/L	0.028	<0.00173	--	--	--	<0.00179	--	--	--	--	<0.0017	<0.00187	<0.00213	<0.00191	<0.00182	<0.011	<0.0309
beta-BHC	µg/L	0.042	<0.0049	--	--	--	<0.00505	--	--	--	--	<0.0048	<0.00527	<0.006	<0.00539	<0.00513	<0.0143	<0.0394
Chlordane	µg/L	2	<0.0653	--	--	--	<0.0674	--	--	--	--	<0.064	<0.0703	<0.08	<0.0719	<0.0684	<0.242	<0.862
delta-BHC	µg/L	2.1	<0.00235	--	--	--	<0.00242	--	--	--	--	<0.0023	<0.00253	<0.00288	<0.00258	<0.00246	<0.0165	<0.0287
Dieldrin	µg/L	0.011	<0.00204	--	--	--	<0.00211	--	--	--	--	<0.002	<0.0022	***0.00467 J***	<0.00225	***0.00271 J***	<0.0132	<0.0277
Endosulfan I	µg/L	42	<0.00204	--	--	--	***0.0165 J***	***0.00528 J***	<0.00215	<0.002	<0.00215	<0.002	<0.0022	<0.0025	<0.00225	<0.00214	<0.0121	<0.0351
Endosulfan II	µg/L	42	<0.00194	--	--	--	<0.002	--	--	--	--	<0.0019	<0.00209	<0.00238	<0.00213	<0.00203	<0.0089	<0.0309
Endosulfan sulfate	µg/L	NS	<0.00255	--	--	--	<0.00263	--	--	--	--	<0.0025	<0.00275	<0.00313	<0.00281	<0.00267	<0.00923	<0.0319
Endrin	µg/L	2	<0.00194	--	--	--	***0.00219 J***	<0.00209	<0.00204	***0.00251 J***	<0.00204	<0.0019	<0.00209	***0.00253 J***	<0.00213	<0.00203	<0.011	<0.0277
Endrin aldehyde	µg/L	2.1	<0.00745	--	--	--	<0.00768	--	--	--	--	<0.0073	<0.00802	***0.0114 J***	<0.0082	<0.00781	<0.0105	<0.0309
gamma-BHC (Lindane)	µg/L	0.2	<0.00194	--	--	--	<0.002	--	--	--	--	<0.0019	<0.00209	<0.00238	<0.00213	<0.00203	<0.0154	<0.0383
Heptachlor	µg/L	0.4	<0.00265	--	--	--	***0.00457 J***	<0.00286	<0.0028	***0.00364 J***	<0.0028	<0.0026	<0.00286	***0.00392 J***	<0.00292	<0.00278	<0.0132	<0.0351
Heptachlor epoxide	µg/L	0.2	<0.00622	--	--	--	<0.00642	--	--	--	--	<0.0061	<0.0067	<0.00763	<0.00685	<0.00652	<0.01	<0.0309
Methoxychlor	µg/L	40	<0.00214	--	--	--	<0.00221	--	--	--	--	<0.0021	<0.00231	<0.00263	***0.0024 J***	<0.00225	<0.0154	<0.0436
Toxaphene	µg/L	3	<0.0592	--	--	--	<0.0611	--	--	--	--	<0.058	<0.0637	<0.0725	<0.0652	<0.062	<0.451	<0.734
Semivolatile Organics by GC/MS																		
1,2,4,5-Tetrachlorobenzene	µg/L	2.1	<0.12	--	--	--	<0.125	--	--	--	--	<0.13	<0.135	<0.148	<0.157	<0.151	<1.9	<0.6
1,3,5-Trinitrobenzene	µg/L	NS	<1.28	--	--	--	<1.33	--	--	--	--	<1.39	<1.44	<1.58	<1.44	<1.38	<1.55	<2.56
1,3-Dinitrobenzene	µg/L	1	<0.17	--	--	--	<0.177	--	--	--	--	<0.185	<0.191	<0.21	<1.13	<1.09	<1.19	<3.56
1,4-Naphthoquinone	µg/L	NS	<0.14	--	--	--	<0.146	--	--	--	--	<0.152	<0.157	<0.173	<0.404	<0.389	<1.17	<4
1,4-Phenylenediamine	µg/L	NS	<8.4	--	--	--	<8.75	--	--	--	--	<9.13	<9.44	<10.4	<9.44	<9.08	<0.595	<2.11
1-Naphthylamine	µg/L	NS	<0.24	--	--	--	<0.25	--	--	--	--	<0.261	<0.27	<0.296	<0.27	<0.259	<1.05	<2.78
2,3,4,6-Tetrachlorophenol	µg/L	NS	<0.2	--	--	--	<0.208	--	--	--	--	<0.217	<0.225	<0.247	<0.562	<0.541	<1.18	<5.89
2,4,5-Trichlorophenol	µg/L	700	<0.32	--	--	--	<0.333	--	--	--	--	<0.348	<0.36	<0.395	<0.787	<0.757	<1.31	<5.89
2,4,6-Trichlorophenol	µg/L	16	<0.22	--	--	--	<0.229	--	--	--	--	<0.239	<0.247	<0.272	<0.787	<0.757	<1.43	<5.56
2,4-Dichlorophenol	µg/L	20	<0.15	--	--	--	<0.156	--	--	--	--	<0.163	<0.169	<0.185	<0.348	<0.335	<1.31	<0.944
2,4-Dimethylphenol	µg/L	100	<0.21	--	--	--	<0.219	--	--	--	--	<0.228	<0.236	<0.259	<0.236	<0.227	<1.19	<0.644
2,4-Dinitrophenol	µg/L	14	<1.34	--	--	--	<1.4	--	--	--	--	<1.46	<1.51	<1.65	<2.9	<2.79	<6.79	<14.4
2,4-Dinitrotoluene	µg/L	0.25	<0.19	--	--	--	<0.198	--	--	--	--	<0.207	<0.213	<0.235	<0.517	<0.497	<1.31	<7.11
2,6-Dichlorophenol	µg/L	NS	<0.22	--	--	--	<0.229	--	--	--	--	<0.239	<0.247	<0.272	<0.247	<0.238	<1.31	<0.767
2,6-Dinitrotoluene	µg/L	0.26	<0.24	--	--	--	<0.25	--	--	--	--	<0.261	<0.27	<0.296	<0.27	<0.259	<1.31	<0.578
2-Acetylaminofluorene	µg/L	NS	<0.28	--	--	--	<0.292	--	--	--	--	<0.304	<0.315	<0.346	<1.39	<1.34	<1.43	<3
2-Chloronaphthalene	µg/L	560	<0.23	--	--	--	<0.24	--	--	--	--	<0.25	<0.258	<0.284	<0.258	<0.249	<1.55	<0.711
2-Chlorophenol	µg/L	40	<0.15	--	--	--	<0.156	--	--	--	--	<0.163	<0.169	<0.185	<0.169	<0.162	<1.31	<0.6
2-Methylnaphthalene	µg/L	28	<0.19	--	--	--	<0.198	--	--	--	--	<0.207	<0.213	<0.235	<0.213	<0.205	<1.55	<0.656
2-Methylphenol (o-Cresol)	µg/L	35	<0.18	--	--	--	<0.188	--	--	--	--	<0.196	<0.202	<0.222	<0.202	<0.195	<1.19	<0.722
2-Naphthylamine	µg/L	0.097	<0.22	--	--	--	<0.229	--	--	--	--	<0.239	<0.247	<0.272	<0.247	<0.238	<1.02	<2.33
2-Nitroaniline	µg/L	NS	<0.23	--	--	--	<0.24	--	--	--	--	<0.25	<0.258	<0.284	<1.39	<1.34	<1.43	<6.56
2-Nitrophenol	µg/L	NS	<0.16	--	--	--	<0.167	--	--	--	--	<0.174	<0.18	<0.198	<1.08	<1.04	<1.9	<7.56
3,3'-Dichlorobenzidine	µg/L	0.39	<0.46	--	--	--	<0.479	--	--	--	--	<0.5	<0.517	<0.568	<0.91	<0.876	<2.14	<1.56
3,3'-Dimethylbenzidine	µg/L	NS	<0.21	--	--	--	<0.219	--	--	--	--	<0.228	<0.236	<0.259	<0.236	<0.227	<2.38	<1.67
3/4-Methylphenol	µg/L	70	<0.18	--	--	--	<0.188	--	--	--	--	<0.196	<0.202	<0.222	<0.202	<0.195	<0.905	<0.778
3-Methylcholanthrene	µg/L	NS	<0.31	--	--	--	<0.323	--	--	--	--	<0.337	<0.348	<0.383	<1	<0.962	<2.98	<0.356
3-Nitroaniline	µg/L	NS	<0.22	--	--	--	<0.229	--	--	--	--	<0.239	<0.247	<0.272	<0.652	<0.627	<1.19	<3
4,6-Dinitro-2-methylphenol	µg/L	NS	<2.22	--	--	--	<2.31	--	--	--	--	<2.41	<2.49	<2.74	<2.49	<2.4	<2.98	<7.67
4-Aminobiphenyl	µg/L	0.0083	<0.3	--	--	--	<0.313	--	--	--	--	<0.326	<0.337	<0.37	<0.337	<0.324	<1.14	<2.44
4-Bromophenyl phenyl ether	µg/L	NS	<0.29	--	--	--	<0.302	--	--	--	--	<0.315	<0.326	<0.358	<0.326	<0.314	<2.26	<0.778
4-Chloro-3-methylphenol	µg/L	700	<0.19	--	--	--	<0.198	--	--	--	--	<0.207	<0.213	<0.235	<0.292	<0.281	<1.13	<0.933
4-Chloroaniline	µg/L	28	<0.14	--	--	--	<0.146	--	--	--	--	<0.152	<0.157	<0.173	<0.169	<0.162	<1.43	<0.689
4-Chlorophenyl phenyl ether	µg/L	NS	<0.25	--	--	--	<0.26	--	--	--	--	<0.272	<0.281	<0.309	<0.281	<0.27	<1.55	<0.767
4-Nitroaniline	µg/L	NS	<0.32	--	--	--	<0.333	--	--	--	--	<0.348	<0.36	<0.395	<0.36	<0.346	<2.02	<1.44
4-Nitrophenol	µg/L	60	<0.12	--	--	--	<0.125	--	--	--	--	<0.13	<0.135	<0.148	<1.55	<1.49	<2.98	<8.44
5-Nitro-o-toluidine	µg/L	NS	<0.17	--	--	--	<0.177	--	--	--	--	<0.185	<0.191	<0.21	<0.191	<0.184	<3.69	<3.11
7,12-Dimethylbenz (a) anthracene	µg/L	NS	<0.25	--	--	--	<0.26	--	--	--	--	<0.272	<0.281	<0.309	<0.281	<0.27	<1.1	<2.11
Acenaphthene	µg/L	420	<0.3	--	--	--	<0.313	--	--	--	--	<0.326	<0.337	<0.37	<0.337	<0.324	<1.55	<0.711
Acenaphthylene	µg/L	210	<0.21	--	--	--	<0.219	--	--	--	--	<0.228	<0.236	<0.259	<0.652	<0.627	<1.55	<0.8
Acetophenone	µg/L	NS	<0.22	--	--	--	<0.229	--	--	--	--	<0.239	<0.247	<0.272	<0.393	<0.378	<3.57	<0.767
Anthracene	µg/L	2100	<0.17	--	--	--	<0.177	--	--	--	--	<0.185	<0.191	<0.21	<0.191	<0.184	<1.31	<0.967
Benzo (a) anthracene	µg/L	0.24	<0.24	--	--	--	<0.25	--	--	--	--	<0.261	<0.27	<0.296	<0.382	<0.368	<1.31	<0.944
Benzo (a) pyrene	µg/L	0.2	<0.25	--	--	--	<0.26	--	--	--	--	<0.272	<0.281	<0.309	<1.43	<1.37	<1.79	<9
Benzo (b) fluoranthene	µg/L	0.24	<0.31	--	--	--	<0.323	--	--	--	--	<0.337	<0.348	<0.383	<1.12	<1.08	<1.43	<5.44
Benzo (g,h,i) perylene	µg/L	21	<0.23	--	--	--	<0.24	--	--	--	--	<0.25	<0.258	<0.284	<1.48	<1.43	<1.9	<7
Benzo (k) fluoranthene	µg/L	2.4	<0.2	--	--	--	<0.208	--	--	--	--	<0.217	<0.225	<0.247	<0.64	<0.616	<1.43	<2.44
Benzyl alcohol	µg/L	700	<0.18	--	--	--	<0.188	--	--	--	--	<0.196	<0.202	<0.222	<0.674	<0.649	<1.31	<1.44
Bis(2-chloroethoxy)methane	µg/L	NS	<0.26	--	--	--	<0.271	--	--	--	--	<0.283	<0.292	<0.321	<0.292	<0.281	<1.31	<0.844
Bis(2-chloroethyl)ether	µg/L	0.16	<0.18	--	--	--	<0.188	--	--	--	--	<0.196	<0.202	<0.222	<0.213	<0.205	<1.31	<0.911
Bis(2-chloroisopropyl) ether	µg/L	300	<0.18	--	--	--	<0.188	--	--	--	--	<0.196	<0.202	<0.222	<0.202	<0.195	<1.43	<0.6
Bis(2-ethylhexyl)phthalate	µg/L	6	<0.39	--	--	--	***0.505 J***	***0.594 J***	<0.398	<0.398	***1.94 J***	<0.424	<0.438	***2.69 J***	<2.61	<2.51	<3.1	<6.11
Butyl benzyl phthalate	µg/L	140	<0.34	--	--	--	<0.354	--	--	--	--	<0.37	<0.382	<0.42	<1.72	<1.65	<1.79	<6
Chlorobenzilate	µg/L	NS	<0.21	--	--	--	<0.219	--	--	--	--	<0.228	<0.236	<0.259	<0.236	<0.227	<3.45	<4
Chrysene	µg/L	24	<0.29	--	--	--	<0.302	--	--	--	--	<0.315	<0.326	<0.358	<0.348	<0.335	<1.31	<0.967
Diallate (cis or trans)	µg/L	NS	<0.23	--	--	--	<0.24	--	--	--	--	<0.25	<0.258	<0.284	<0.258	<0.249	<1.55	<4.44
Dibenzo (a,h) anthracene	µg/L	0.024	<0.25	--	--	--	<0.26	--	--	--	--	<0.272	<0.281	<0.309	<2.06	<1.98	<2.26	<4.33
Dibenzofuran	µg/L	7	<0.24	--	--	--	<0.25	--	--	--	--	<0.261	<0.27	<0.296	<0.27	<0.259	<1.43	<0.822
Diethyl phthalate	µg/L	5600	<0.26	--	--	--	<0.271	--	--	--	--	<0.283	<0.292	<0.321	<0.303	<0.292	<1.31	<1.89
Dimethoate	µg/L	1.4	<0.27	--	--	--	<0.281	--	--	--	--	<0.293	<0.303	***1.2 J***	<0.303	<0.292	<1.19	<4
Dimethyl phthalate	µg/L	NS	<0.23	--	--	--	<0.24	--	--	--	--	<0.25	<0.258	<0.284	<2.46	<2.37	<2.98	<1.11
Di-n-butyl phthalate	µg/L	700	<0.51	--	--	--	<0.531	--	--	--	--	<0.554	<0.573	<0.63	<1.29	<1.24	<1.43	<6.22
Di-n-octyl phthalate	µg/L	140	<0.23	--	--	--	<0.24	--	--	--	--	<0.25	<0.258	<0.284	<2.98	<2.86	<3.57	<7.78
Dinoseb	µg/L	7	<0.43	--	--	--	<0.448	--	--	--	--	<0.467	<0.483	<0.531	<0.483	<0.465	<0.595	<2.67
Diphenylamine	µg/L	180	<0.66	--	--	--	<0.688	--	--	--	--	<0.717	<0.742	<0.815	<0.742	<0.714	<1.05	<6.67
Disulfoton	µg/L	0.7	<0.29	--	--	--	<0.302	--	--	--	--	<0.315	<0.326	<0.358	<0.326	<0.314	<0.762	<2.67
Ethyl Methanesulfonate	µg/L	NS	<0.15	--	--	--	<0.156	--	--	--	--	<0.163	<0.169	<0.185	<0.169	<0.162	<0.595	<4
Famphur	µg/L	NS	<0.47	--	--	--	<0.49	--	--	--	--	<0.511	<0.528	<0.58	<0.528	<0.508	<0.762	<4.22
Fluoranthene	µg/L	280	<0.33	--	--	--	<0.344	--	--	--	--	<0.359	<0.371	<0.407	<0.764	<0.735	<1.12	<1.89
Fluorene	µg/L	280	<0.29	--	--	--	<0.302	--	--	--	--	<0.315	<0.326	<0.358	<0.326	<0.314	<1.55	<0.878
Hexachlorobenzene	µg/L	1	<0.27	--	--	--	<0.281	--	--	--	--	<0.293	<0.303	<0.333	<0.303	<0.292	<1.67	<0.778
Hexachlorobutadiene	µg/L	1	<0.13	--	--	--	<0.135	--	--	--	--	<0.141	<0.146	<0.16	<0.191	<0.184	<1.43	<0.956
Hexachlorocyclopentadiene	µg/L	50	<1.89	--	--	--	<1.97	--	--	--	--	<2.05	<2.12	<2.33	<2.12	<2.04	<2.5	<5.67
Hexachloroethane	µg/L	1	<0.13	--	--	--	<0.135	--	--	--	--	<0.141	<0.146	<0.16	<0.157	<0.151	<1.55	<1.08
Hexachloropropene	µg/L	NS	<1.64	--	--	--	<1.71	--	--	--	--	<1.78	<1.84	<2.02	<1.84	<1.77	<1.9	<2.89
Indeno (1,2,3-cd) pyrene	µg/L	0.24	<0.24	--	--	--	<0.25	--	--	--	--	<0.261	<0.27	<0.296	<1.65	<1.59	<2.38	<4.67
Isodrin	µg/L	NS	<0.38	--	--	--	<0.396	--	--	--	--	<0.413	<0.427	<0.469	<0.427	<0.411	<0.69	<5.22
Isophorone	µg/L	100	<0.22	--	--	--	<0.229	--	--	--	--	<0.239	<0.247	<0.272	<0.247	<0.238	<1.18	<1.03
Isosafrole	µg/L	NS	<0.18	--	--	--	<0.188	--	--	--	--	<0.196	<0.202	<0.222	<0.202	<0.195	<0.595	<2.56
Kepone	µg/L	NS	<0.24	--	--	--	<0.25	--	--	--	--	<0.261	<0.27	<0.296	<0.27	<0.259	<2.14	<1.11
Methapyrilene	µg/L	NS	<0.29	--	--	--	<0.302	--	--	--	--	<0.315	<0.326	<0.358	<1.53	<1.47	<2.26	<0.844
Methyl Methanesulfonate	µg/L	1.8	<0.14	--	--	--	<0.146	--	--	--	--	<0.152	<0.157	<0.173	<0.157	<0.151	<0.595	<3.67
Nitrobenzene	µg/L	14	<0.22	--	--	--	<0.229	--	--	--	--	<0.239	<0.247	<0.272	<0.337	<0.324	<1.31	<0.889
N-Nitrosodiethylamine	µg/L	NS	<0.3	--	--	--	<0.313	--	--	--	--	<0.326	<0.337	<0.37	<0.337	<0.324	<0.595	<3.78
N-Nitrosodimethylamine	µg/L	0.0034	<0.14	--	--	--	<0.146	--	--	--	--	<0.152	<0.157	<0.173	<0.213	<0.205	<1.08	<0.8
N-Nitrosodi-n-butylamine	µg/L	0.032	<0.29	--	--	--	<0.302	--	--	--	--	<0.315	<0.326	<0.358	<0.326	<0.314	<0.595	<4.33
N-Nitrosodi-n-propylamine	µg/L	NS	<0.26	--	--	--	<0.271	--	--	--	--	<0.283	<0.292	<0.321	<0.292	<0.281	<1.19	<1.02
N-Nitrosodiphenylamine	µg/L	36	<0.66	--	--	--	<0.688	--	--	--	--	<0.717	<0.742	<0.815	<0.742	<0.714	<1.13	<0.833
N-Nitrosomethylethylamine	µg/L	0.008	<0.2	--	--	--	<0.208	--	--	--	--	<0.217	<0.225	<0.247	<0.225	<0.216	<1.55	<5.44
N-Nitrosopiperidine	µg/L	NS	<0.15	--	--	--	<0.156	--	--	--	--	<0.163	<0.169	<0.185	<0.169	<0.162	<0.595	<3
N-Nitrosopyrrolidine	µg/L	0.083	<0.23	--	--	--	<0.24	--	--	--	--	<0.25	<0.258	<0.284	<0.258	<0.249	<0.595	<4
O,O,O-Triethyl phosphorothioate	µg/L	NS	<0.24	--	--	--	<0.25	--	--	--	--	<0.261	<0.27	<0.296	<0.27	<0.259	<0.595	<3.56
o-Toluidine	µg/L	11	<0.18	--	--	--	<0.188	--	--	--	--	<0.196	<0.202	<0.222	<0.202	<0.195	<0.798	<3.22
p-(Dimethylamino)azobenzene	µg/L	NS	<0.24	--	--	--	<0.25	--	--	--	--	<0.261	<0.27	<0.296	<0.27	<0.259	<0.929	<2.44
Parathion-ethyl	µg/L	NS	<0.18	--	--	--	<0.188	--	--	--	--	<0.196	<0.202	<0.222	<0.202	<0.195	<1.9	<2.44
Parathion-methyl	µg/L	1	<0.15	--	--	--	<0.156	--	--	--	--	<0.163	<0.169	<0.185	<0.169	<0.162	<0.893	<2.56
Pentachlorobenzene	µg/L	NS	<0.22	--	--	--	<0.229	--	--	--	--	<0.239	<0.247	<0.272	<0.247	<0.238	<0.69	<3.11
Pentachloronitrobenzene	µg/L	NS	<0.33	--	--	--	<0.344	--	--	--	--	<0.359	<0.371	<0.407	<0.371	<0.357	<0.595	<6.44
Pentachlorophenol	µg/L	1	<0.24	--	--	--	<0.25	--	--	--	--	<0.261	<0.27	<0.296	<2.61	<2.51	<2.74	<10.7
Phenacetin	µg/L	NS	<0.17	--	--	--	<0.177	--	--	--	--	<0.185	<0.191	<0.21	<0.629	<0.605	<2.14	<2.11
Phenanthrene	µg/L	210	<0.6	--	--	--	<0.625	--	--	--	--	<0.652	<0.674	<0.741	<0.674	<0.649	<1.31	<0.878
Phenol	µg/L	2000	<2.4	--	--	--	<2.5	--	--	--	--	<2.61	<2.7	<2.96	<2.7	<2.59	<2.86	<1.22
Phorate	µg/L	1.4	<0.17	--	--	--	<0.177	--	--	--	--	<0.185	<0.191	<0.21	<0.191	<0.184	<0.595	<3.56
Pronamide	µg/L	5	<0.26	--	--	--	<0.271	--	--	--	--	<0.283	<0.292	<0.321	<0.292	<0.281	<0.595	<3
Pyrene	µg/L	210	<0.23	--	--	--	<0.24	--	--	--	--	<0.25	<0.258	<0.284	<0.292	<0.281	<1.67	<0.878
Safrole	µg/L	NS	<0.2	--	--	--	<0.208	--	--	--	--	<0.217	<0.225	<0.247	<0.225	<0.216	<0.595	<3.11
Thionazin	µg/L	NS	<0.31	--	--	--	<0.323	--	--	--	--	<0.337	<0.348	<0.383	<0.348	<0.335	<0.905	<3.89
Volatile Organic Compounds																		
1,1-Dichloropropene	µg/L	NS	<0.15	--	--	--	<0.15	--	--	--	--	<0.15	<0.15	<0.15	<0.43	<0.43	<0.43	<0.43
1,2,4-Trichlorobenzene	µg/L	70	<0.16	--	--	--	<0.16	--	--	--	--	<0.16	<0.16	<0.16	<0.75	<0.75	<0.75	<0.75
1,3-Dichlorobenzene	µg/L	600	<0.17	--	--	--	<0.17	--	--	--	--	<0.17	<0.17	<0.17	<0.3	<0.3	<0.3	<0.3
1,3-Dichloropropane	µg/L	NS	<0.16	--	--	--	<0.16	--	--	--	--	<0.16	<0.16	<0.16	<0.4	<0.4	<0.4	<0.4
2,2-Dichloropropane	µg/L	NS	<0.18	--	--	--	<0.18	--	--	--	--	<0.18	<0.18	<0.18	<0.69	<0.69	<0.69	<0.69
Acrolein	µg/L	NS	<1.5	--	--	--	<1.5	--	--	--	--	<1.5	<1.5	<1.5	<3.6	<3.6	<3.6	<3.6
Allyl chloride	µg/L	NS	<0.27	--	--	--	<0.27	--	--	--	--	<0.27	<0.27	<0.27	<0.7	<0.7	<0.7	<0.7
Chloroprene	µg/L	NS	<0.19	--	--	--	<0.19	--	--	--	--	<0.19	<0.19	<0.19	<0.23	<0.23	<0.23	<0.23
Dichlorodifluoromethane	µg/L	1000	<0.2	--	--	--	<0.2	--	--	--	--	<0.2	<0.2	<0.2	<0.25	<0.25	<0.25	<0.25
Ethyl Methacrylate	µg/L	NS	<0.15	--	--	--	<0.15	--	--	--	--	<0.15	<0.15	<0.15	<0.68	<0.68	<0.68	<0.68
Methacrylonitrile	µg/L	NS	<0.25	--	--	--	<0.25	--	--	--	--	<0.25	<0.25	<0.25	<3.3	<3.3	<3.3	<3.3
Methyl Methacrylate	µg/L	NS	<0.15	--	--	--	<0.15	--	--	--	--	<0.15	<0.15	<0.15	<0.76	<0.76	<0.76	<0.76
Naphthalene	µg/L	100	<0.37	--	--	--	<0.37	--	--	--	--	<0.37	<0.37	<0.37	<3	<3	<3	<3
Propionitrile	µg/L	NS	<2	--	--	--	<2	--	--	--	--	<2	<2	<2	<3.4	<3.4	<3.4	<3.4

Detections at or above the RL are shown in bold italics on gray background.

Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.

NS = No standard

Black Hawk County Landfill
Appendix I Results
Monitoring Well OW-413B

Parameter Name	Units	GPS	Dec-16	Apr-17	Jun-17	Sep-17	Nov-17	Mar-18	Sep-18	Apr-19	Sep-19	Apr-20	Sep-20	Mar-21	Nov-21	Apr-22	Nov-22	Apr-23	Oct-23	May-24	Oct-24
Appendix I Inorganics																					
Total Suspended Solids	mg/L	NS	***36.5***	***48***	***62***	***46***	***78.1***	***56.6***	***62.5***	***78***	***37.4***	***51***	***36.5***	***66.3***	***40***	***52***	***83***	***74***	***80***	***128***	***75***
Turbidity, Field	NTU	NS	***24.97***	***5.833***	***24.73***	***15.8***	***15.13***	***99.73***	***23.67***	***68.39***	***4.22***	***64.67***	***13.15***	***136.32***	***0.46***	***18.93***	***27.84***	***118.55***	***40.29***	***81.81***	***25.27***
Turbidity, Lab	NTU	NS	***119***	***177***	***352***	***67***	***37.3***	***236***	***340***	***266***	***121***	***98.6***	--	--	--	--	--	--	--	--	--
Antimony	µg/L	6	<0.237	***0.291 J***	<0.185	***0.438 J***	<0.185	<0.42	<0.42	<0.53	<0.53	<0.58	<0.51	<1.1	<1.1	<0.69	<0.69	<1	<1	<1	<1
Antimony, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	***4.03***	***3.71***	***3.36***	***4.85***	***4.13***	***8.33***	***7.79***	***5.36***	***4.57***	***7.65***	***5.31***	***4.62***	***3.68***	***4.22***	***4.64***	***9.14***	***8.08***	***10.8***	***6.37***
Arsenic, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	***578***	***364***	***444***	***510***	***484***	***447***	***403***	***425***	***378***	***349***	***341***	***432***	***492***	***423***	***514***	***543***	***571***	***632***	***544***
Barium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	<0.221	<0.125	<0.125	<0.125	<0.125	<0.19	<0.19	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.33	<0.33	<0.33	<0.33
Beryllium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	<0.0351	<0.0441	<0.0441	<0.0441	<0.0441	<0.06	<0.06	<0.077	<0.039	<0.039	<0.049	<0.051	<0.051	<0.055	<0.055	<0.1	<0.1	<0.1	<0.1
Cadmium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	***2.85 J***	***3.86 J***	***5.21***	***14.3***	***11.7***	***9.7***	***11.1***	***4.51 J***	***1.33 J***	***4.59 J***	***3.57 J***	***2.61 J***	<1.1	***2.3 J***	***1.56 J***	***3.59 J***	***1.76 J***	***6.15***	***2.65 J***
Chromium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	9.83	***1.98***	***2.98***	***2.7***	***1.58***	***2.67***	***5.28***	***5.26***	***5.03***	***3.9***	***4.24***	***2.97***	***4.66***	***2.46***	***4.91***	***2.22***	***4.37***	***3.14***	***5.23***	***2.82***
Cobalt, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	1300	<1.22	<2.19	<2.19	<2.19	<2.19	<1.6	<1.6	<2	<2	<3.2	<1.5	<1.4	<1.4	<1.8	<1.8	<1.8	<1.8	***3.27 J***	<1.8
Copper, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	***0.44 J***	<0.324	<0.324	<0.324	<0.324	***0.293 J***	***0.295 J***	***0.411 J***	<0.27	<0.27	<0.11	<0.21	<0.21	<0.24	<0.24	<0.24	<0.24	***1.06***	***0.286 J***
Lead, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	µg/L	722	***19.5***	***7.99***	***6.02***	***1.76 J***	***3.42 J***	***5.37***	<3	***7.47***	***3.7 J***	***3.89 J***	***3.7 J***	***4.9 J***	***3.6 J***	***4.59 J***	***3.01 J***	***5.23***	***2.03 J***	***7.58***	***5.01***
Nickel, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	<0.63	<0.928	<0.928	<0.928	<0.928	<0.9	<0.9	<1	<1	<1	<1	<0.96	<0.96	<0.96	<0.96	<1.4	<1.4	<1.4	<1.4
Selenium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	µg/L	100	<0.153	***0.164 J***	<0.14	***0.184 J***	<0.14	<0.3	<0.3	<0.37	<0.37	<0.37	<0.37	<0.42	<0.42	<0.49	<0.49	<0.5	<0.5	<0.5	<0.5
Silver, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	<0.0255	<0.0644	<0.0644	<0.0644	<0.0644	<0.17	<0.17	<0.27	<0.27	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.57	<0.57
Thallium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium	µg/L	35	***1.05 J***	<0.84	***0.94 J***	***1.58 J***	***1.23 J***	***1.7 J***	***2.2 J***	***1.92 J***	<0.82	***1.43 J***	***1.18 J***	***1.11 J***	***1.14 J***	***1.18 J***	***1.75 J***	***3.82 J***	***2.11 J***	***5.91***	***3.51 J***
Vanadium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	2000	<5.21	<11.5	<11.5	<11.5	<11.5	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<6.4	<6.4	<9.7	<9.7
Zinc, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Appendix I Organics																					
1,1,1,2-Tetrachloroethane	µg/L	70	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38
1,1,1-Trichloroethane	µg/L	200	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19
1,1,2,2-Tetrachloroethane	µg/L	0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47
1,1,2-Trichloroethane	µg/L	5	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45
1,1-Dichloroethane	µg/L	140	***0.311 J***	***0.34 J***	***0.256 J***	<0.21	***0.856 J***	***0.324 J***	<0.22	<0.22	***0.239 J***	***0.689 J***	<0.22	<0.22	<0.22	***0.292 J***	***0.342 J***	***0.261 J***	<0.22	***0.231 J***	***0.255 J***
1,1-Dichloroethylene	µg/L	7	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56
1,2,3-Trichloropropane	µg/L	0.0058	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59
1,2-Dibromo-3-chloropropane	µg/L	0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2
1,2-Dibromoethane	µg/L	0.05	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34
1,2-Dichlorobenzene	µg/L	600	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37
1,2-Dichloroethane	µg/L	5	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39
1,2-Dichloropropane	µg/L	5	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27
1,4-Dichlorobenzene	µg/L	75	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23
2-Butanone	µg/L	4000	***1.37 J***	<1.04	<1.04	<1.04	<1.04	<1.04	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1
2-Hexanone	µg/L	NS	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
4-Methyl-2-pentanone	µg/L	560	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1
Acetone	µg/L	6300	***3.16 J***	***3.34 J***	***5.29 J***	***4.32 J***	***2.06 J***	***3.87 J***	***3.69 J***	<3.1	<3.1	<3.1	<3.1	***7.36 J***	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1
Acrylonitrile	µg/L	0.32	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2
Benzene	µg/L	5	***2.57***	***1.87***	***1.29***	***1.72***	***2.24***	***1.98***	***2***	***1.43***	***1.39***	***1.26***	***1.05***	***1.16***	***1.64***	***1.36***	***1.57***	***1.32***	***1.57***	***1.17***	***1.9***
Bromochloromethane	µg/L	90	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54
Bromodichloromethane	µg/L	80	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39
Bromomethane	µg/L	10	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Carbon disulfide	µg/L	700	***0.348 J***	<0.15	<0.15	<0.15	<0.15	<0.15	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45
Carbon Tetrachloride	µg/L	5	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65
Chlorobenzene	µg/L	100	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Chloroethane	µg/L	2800	***1.95 J***	***1.95 J***	***0.928 J***	***1.56 J***	***1.63 J***	***1.34 J***	***1.23 J***	***0.888 J***	***1.46 J***	***0.99 J***	<0.79	***1.18 J***	***1.55 J***	***1.15 J***	***1.29 J***	***1.12 J***	***1.21 J***	***1.1 J***	***0.893 J***
Chloromethane	µg/L	NS	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61
cis-1,2-Dichloroethylene	µg/L	70	***1.49***	***1.15***	***0.588 J***	***0.748 J***	***0.825 J***	***1.01***	***0.788 J***	***0.851 J***	***0.835 J***	***0.83 J***	***0.33 J***	***0.897 J***	***1.02***	***1.13***	***0.899 J***	***0.814 J***	***0.824 J***	***0.701 J***	***0.755 J***
cis-1,3-Dichloropropene	µg/L	NS	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Dibromochloromethane	µg/L	80	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75
Dibromomethane	µg/L	70	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Dichloromethane	µg/L	5	<0.17	***0.288 J***	<0.17	<0.17	***0.469 J***	<0.17	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7
Ethylbenzene	µg/L	700	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31
Iodomethane	µg/L	NS	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7
Styrene	µg/L	100	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37
Tetrachloroethylene	µg/L	5	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48
Toluene	µg/L	1000	<0.15	<0.15	***0.434 J***	<0.15	***0.426 J***	***0.161 J***	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43
Trans-1,2-dichloroethylene	µg/L	100	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27
trans-1,3-Dichloropropene	µg/L	NS	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56
trans-1,4-Dichloro-2-butene	µg/L	1.8	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Tribromomethane	µg/L	80	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78
Trichloroethylene	µg/L	5	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43
Trichlorofluoromethane	µg/L	2000	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38
Trichloromethane	µg/L	80	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3
Vinyl Acetate	µg/L	NS	<0.74	<0.74	<0.74	<0.74	<0.74	<0.74	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Vinyl Chloride	µg/L	2	***0.287 J***	***0.266 J***	***0.129 J***	<0.1	***0.395 J***	***0.251 J***	<0.6	<0.6	***0.287 J***	***0.284 J***	<0.18	***0.19 J***	***0.23 J***	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18
Xylenes	µg/L	10000	***0.196 J***	<0.13	<0.13	<0.13	***0.154 J***	<0.13	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Detections at or above the RL are shown in bold italics on gray background.

Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.

NS = No standard

Black Hawk County Landfill
Appendix I Results
Monitoring Well MW-501B

Parameter Name	Units	GPS	Oct-13	Jan-14	Mar-14	Jun-14	Sep-14	Mar-15	Aug-15	Mar-16	Sep-16	Mar-17	Sep-17	Mar-18	Jul-18	Sep-18	Dec-18	Apr-19	Sep-19	Mar-20	Aug-20	Sep-20	Apr-21	Nov-21	Apr-22	Nov-22	Apr-23	Sep-23	May-24	Oct-24
Appendix I Inorganics																														
Total Suspended Solids	mg/L	NS	--	--	--	--	***4.33 J***	***1.83 J***	<1.2	***1.63 J***	***3***	***4.25***	***3.38***	***10.6***	***2.13***	Blocked	***1.88***	***1.38 J***	***2.75***	<0.638	<0.638	***0.875 J***	***1.25 J***	***1 J***	***1.63 J***	***1.25 J***	***2.63***	***1.5 J***	***2***	***1.63 J***
Turbidity, Field	NTU	NS	--	--	--	--	***3.78***	***2.696***	***3.225***	***1.415***	***3.6***	***15.15***	***0.8201***	***10.01***	***3.691***	by	***62.95***	***55.28***	***3.03***	***1.25***	***1.4***	***1.17***	0	0	0	0	***0.51***	***3.79***	***2.96***	***5.83***
Turbidity, Lab	NTU	NS	--	--	--	--	***5.4***	***2***	<0.7	***0.9 J***	***3.2***	<0.4	***2.8***	***2.6***	***0.5 J***	Equipment	***2.5***	<0.4	***3.42***	***0.44 J***	--	--	--	--	--	--	--	--	--	--
Antimony	µg/L	6	<0.4	***1.63 J***	***0.559 J***	***0.692 J***	***0.379 J***	***0.321 J***	<0.161	<0.237	<0.237	<0.185	<0.185	<0.42	<0.42	--	<0.42	<0.53	<0.53	<0.58	--	<0.51	<1.1	<1.1	<0.69	<0.69	<1	<1	<1	<1
Antimony, Dissolved	µg/L	NS	<0.4	***1.15 J***	<0.4	<0.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	***0.48 J***	***1.41 J***	***2.8 J***	***1.24 J***	***0.953 J***	<0.945	<0.945	<0.672	<0.672	<0.505	<0.505	***2.22***	<0.57	--	<0.57	<0.75	<0.75	<0.88	--	<0.88	<0.75	<0.75	<0.75	<0.75	<0.53	<0.53	<0.53	<0.53
Arsenic, Dissolved	µg/L	NS	<0.33	***1.2 J***	***0.644 J***	***1.23 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	***131***	***92.3***	***116***	***95.7***	***98.4***	***93***	***89.8***	***88.5***	***76.8***	***85.8***	***82.6***	***1200***	***95***	--	***87.5***	***92.2***	***98***	***99.7***	***95.7***	***104***	***109***	***110***	***102***	***109***	***123***	***113***	***116***	***128***
Barium, Dissolved	µg/L	NS	***135***	***80***	***99.5***	***101***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	<0.08	<0.08	<0.08	***0.141 J***	<0.039	<0.039	***0.084 J***	<0.221	<0.221	<0.125	<0.125	<0.19	<0.19	--	<0.19	<0.27	<0.27	<0.27	--	<0.27	<0.27	<0.27	<0.27	<0.27	<0.33	<0.33	<0.33	<0.33
Beryllium, Dissolved	µg/L	NS	<0.08	<0.08	<0.08	<0.08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	<0.1	<0.1	<0.1	***0.109 J***	<0.112	<0.112	<0.112	<0.0351	<0.0351	<0.0441	<0.0441	***0.087 J***	<0.06	--	<0.06	<0.077	<0.039	<0.039	--	<0.049	<0.051	<0.051	<0.055	<0.055	<0.1	<0.1	<0.1	<0.1
Cadmium, Dissolved	µg/L	NS	<0.1	<0.1	<0.1	<0.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	***9.31***	***3.9***	***8.16***	***2.07***	<1.24	<1.24	<1.24	***0.363 J***	***0.903 J***	<0.729	<0.729	***2.17 J***	***1.71 J***	--	***14.8***	<0.98	***3.65 J***	***3.26 J***	--	***4.52 J***	***2.08 J***	<1.1	***2.09 J***	<1.1	***2.05 J***	***1.52 J***	***7.57***	***4.04 J***
Chromium, Dissolved	µg/L	NS	***0.957 J***	***3.16***	<0.5	<0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	9.83	***0.383 J***	***0.361 J***	***0.211 J***	***0.313 J***	***0.912***	***1.8***	***1.48***	***0.268 J***	***1.04***	***0.643***	***0.691***	***4.01***	***1.24***	--	***0.808***	***0.247 J***	***1.2***	<0.091	--	***0.64***	***0.098 J***	***0.577 J***	<0.19	***0.572***	***0.422 J***	***0.473 J***	***0.205 J***	***0.411 J***
Cobalt, Dissolved	µg/L	NS	<0.054	***0.327 J***	***0.113 J***	***0.229 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	1300	***2.65***	***2.78***	***2.12***	***0.647 J***	<0.485	***3.94***	***3.49***	<1.22	<1.22	<2.19	<2.19	<1.6	<1.6	--	***2.01 J***	<2	<2	<3.2	--	<1.5	***2.77 J***	***2.25 J***	***2.19 J***	***3.18 J***	***2.71 J***	***3.12 J***	***2.17 J***	***2.5 J***
Copper, Dissolved	µg/L	NS	<0.56	***2.14***	<0.56	<0.56	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	***1.08***	***1.47***	***2.65***	***0.36 J***	<0.0967	***0.223 J***	***0.243 J***	<0.211	<0.211	<0.324	<0.324	<0.25	<0.25	--	***0.312 J***	<0.27	<0.27	<0.27	--	<0.11	<0.21	<0.21	<0.24	<0.24	<0.24	<0.24	<0.26	<0.26
Lead, Dissolved	µg/L	NS	<0.18	***1.2***	<0.18	<0.18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	µg/L	722	***9.05***	***11.5***	***4.01***	***12.1***	***43.9***	***53.8***	***21.7***	***12.2***	***8.18***	***7.12***	***7.93***	***21.7***	***19.6***	--	***6***	***6.71***	***12.5***	***6.01***	--	***7.97***	***4.87 J***	***15.2***	***3.45 J***	***11.5***	***4.43 J***	***10.6***	***5.2***	***14***
Nickel, Dissolved	µg/L	NS	***0.99 J***	***9.64***	***2.34***	***11.1***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	***0.804 J***	<0.7	<0.7	<0.7	<3.34	<3.34	<3.34	<0.63	<0.63	<0.928	<0.928	<0.9	<0.9	--	<0.9	<1	<1	<1	--	<1	<0.96	<0.96	<0.96	<0.96	<1.4	<1.4	<1.4	<1.4
Selenium, Dissolved	µg/L	NS	<0.7	<0.7	<0.7	***1.57 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	µg/L	100	<0.033	<0.033	<0.033	<0.033	<0.042	<0.042	***0.111 J***	<0.153	<0.153	<0.14	<0.14	<0.3	<0.3	--	<0.3	<0.37	<0.37	<0.37	--	<0.37	<0.42	<0.42	<0.49	<0.49	<0.5	<0.5	<0.5	<0.5
Silver, Dissolved	µg/L	NS	<0.033	<0.033	<0.033	<0.033	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	<0.05	***0.059 J***	<0.05	<0.05	<0.0325	<0.0325	<0.0325	<0.0255	<0.0255	<0.0644	<0.0644	<0.17	<0.17	--	<0.17	<0.27	<0.27	<0.26	--	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.57	<0.57
Thallium, Dissolved	µg/L	NS	<0.05	***0.056 J***	<0.05	<0.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium	µg/L	35	***1.16 J***	***0.826 J***	***0.77 J***	***0.567 J***	<0.449	***0.495 J***	<0.449	***0.322 J***	***0.375 J***	<0.84	<0.84	***1.31 J***	***0.774 J***	--	***0.844 J***	<0.82	***0.935 J***	***0.94 J***	--	<0.85	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Vanadium, Dissolved	µg/L	NS	<0.5	***0.929 J***	<0.5	<0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	2000	***3.23 J***	***5.51 J***	<2	***3.84 J***	<6.95	<6.95	<6.95	<5.21	<5.21	<11.5	<11.5	<10	<10	--	***14.1 J***	<10	<10	<10	--	<10	<10	<10	<10	<10	<6.4	<6.4	<9.7	<9.7
Zinc, Dissolved	µg/L	NS	<2	***5.47 J***	<2	***3.27 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Appendix I Organics																														
1,1,1,2-Tetrachloroethane	µg/L	70	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	--	--	<0.38	<0.38	<0.38	<0.38	--	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38
1,1,1-Trichloroethane	µg/L	200	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	--	--	<0.19	<0.19	<0.19	<0.19	--	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19
1,1,2,2-Tetrachloroethane	µg/L	0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	--	--	<0.47	<0.47	<0.47	<0.47	--	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47
1,1,2-Trichloroethane	µg/L	5	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	--	--	<0.45	<0.45	<0.45	<0.45	--	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45
1,1-Dichloroethane	µg/L	140	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	--	--	<0.22	<0.22	<0.22	<0.22	--	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22
1,1-Dichloroethylene	µg/L	7	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	--	--	<0.56	<0.56	<0.56	<0.56	--	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56
1,2,3-Trichloropropane	µg/L	0.006	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	--	--	<0.59	<0.59	<0.59	<0.59	--	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59
1,2-Dibromo-3-chloropropane	µg/L	0.2	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	<1.2	<1.2	<1.2	<1.2	--	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2
1,2-Dibromoethane	µg/L	0.05	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	--	--	<0.34	<0.34	<0.34	<0.34	--	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34
1,2-Dichlorobenzene	µg/L	600	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	--	--	<0.37	<0.37	<0.37	<0.37	--	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37
1,2-Dichloroethane	µg/L	5	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	--	--	<0.39	<0.39	<0.39	<0.39	--	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39
1,2-Dichloropropane	µg/L	5	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	--	--	<0.27	<0.27	<0.27	<0.27	--	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27
1,4-Dichlorobenzene	µg/L	75	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	--	--	<0.23	<0.23	<0.23	<0.23	--	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23
2-Butanone	µg/L	4000	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<1.04	<1.04	<1.04	--	--	<2.1	<2.1	<2.1	<2.1	--	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1
2-Hexanone	µg/L	NS	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	--	--	<2	<2	<2	<2	--	<2	<2	<2	<2	<2	<2	<2	<2	<2
4-Methyl-2-pentanone	µg/L	560	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--	--	<2.1	<2.1	<2.1	<2.1	--	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1
Acetone	µg/L	6300	<1.79	<1.79	<1.79	<1.79	<1.79	<1.79	<1.79	<1.79	<1.79	***1.92 J***	***4.2 J***	***2.43 J***	--	--	<3.1	<3.1	<3.1	<3.1	--	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1
Acrylonitrile	µg/L	0.32	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	--	--	<2.2	<2.2	<2.2	<2.2	--	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2
Benzene	µg/L	5	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	--	--	<0.22	<0.22	<0.22	<0.22	--	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22
Bromochloromethane	µg/L	90	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	--	--	<0.54	<0.54	<0.54	<0.54	--	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54
Bromodichloromethane	µg/L	80	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	--	--	<0.39	<0.39	<0.39	<0.39	--	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39
Bromomethane	µg/L	10	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--	--	<1.1	<1.1	<1.1	<1.1	--	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Carbon disulfide	µg/L	700	***0.221 J***	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	--	--	<0.45	<0.45	<0.45	<0.45	--	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45
Carbon Tetrachloride	µg/L	5	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	--	--	<0.65	<0.65	<0.65	<0.65	--	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65
Chlorobenzene	µg/L	100	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	--	--	<0.4	<0.4	<0.4	<0.4	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Chloroethane	µg/L	2800	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	--	--	<0.79	<0.79	<0.79	<0.79	--	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79
Chloromethane	µg/L	NS	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	--	--	<0.61	<0.61	<0.61	<0.61	--	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61
cis-1,2-Dichloroethylene	µg/L	70	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	--	--	<0.21	<0.21	<0.21	<0.21	--	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21
cis-1,3-Dichloropropene	µg/L	NS	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	--	--	<0.25	<0.25	<0.25	<0.25	--	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Dibromochloromethane	µg/L	80	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	--	--	<0.75	<0.75	<0.75	<0.75	--	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75
Dibromomethane	µg/L	70	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	--	--	<0.33	<0.33	<0.33	<0.33	--	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Dichloromethane	µg/L	5	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	***0.377 J***	<0.17	<0.17	--	--	<1.7	<1.7	<1.7	<1.7	--	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7
Ethylbenzene	µg/L	700	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	--	--	<0.31	<0.31	<0.31	<0.31	--	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31
Iodomethane	µg/L	NS	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	--	--	<7	<7	<7	<7	--	<7	<7	<7	<7	<7	<7	<7	<7	<7
Styrene	µg/L	100	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	--	--	<0.37	<0.37	<0.37	<0.37	--	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37
Tetrachloroethylene	µg/L	5	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	--	--	<0.48	<0.48	<0.48	<0.48	--	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48
Toluene	µg/L	1000	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	--	--	<0.43	<0.43	<0.43	<0.43	--	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43
Trans-1,2-dichloroethylene	µg/L	100	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	--	--	<0.27	<0.27	<0.27	<0.27	--	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27
trans-1,3-Dichloropropene	µg/L	NS	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--	--	<0.56	<0.56	<0.56	<0.56	--	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56
trans-1,4-Dichloro-2-butene	µg/L	1.8	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	--	--	<1.1	<1.1	<1.1	<1.1	--	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Tribromomethane	µg/L	80	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	--	--	<0.78	<0.78	<0.78	<0.78	--	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78
Trichloroethylene	µg/L	5	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	--	--	<0.43	<0.43	<0.43	<0.43	--	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43
Trichlorofluoromethane	µg/L	2000	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	--	--	<0.38	<0.38	<0.38	<0.38	--	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38
Trichloromethane	µg/L	80	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	--	--	<1.3	<1.3	<1.3	<1.3	--	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3
Vinyl Acetate	µg/L	NS	<0.74	<0.74	<0.74	<0.74	<0.74	<0.74	<0.74	<0.74	<0.74	<0.74	<0.74	<0.74	--	--	<2.5	<2.5	<2.5	<2.5	--	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Vinyl Chloride	µg/L	2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	--	--	<0.6	<0.6	<0.18	<0.18	--	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18
Xylenes	µg/L	10000	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	--	--	<0.4	<0.4	<0.4	<0.4	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Detections at or above the RL are shown in bold italics on gray background.

Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.

NS = No standard

Black Hawk County Landfill
Appendix H Results
Monitoring Well MW-501R

Constituent Name	Units	UPL	SQ/2R
Alcohols/Glycols by GC			
Acetonitrile	ug/L	NA	<404
Isobutanol	ug/L	2193	<315
Pesticides (GC)			
4,4'-DDT	ug/L	70	<0.0262
Aldrin	ug/L	0.05	<0.00262
Alpha- (1,2,3,- TP)	ug/L	50	<0.0262
Inorganics			
Ammonia	ug/L	209	<5
Mercury	ug/L	2	<0.1
Sulfide	ug/L	NA	<10000
Tin	ug/L	4300	<2.4
PCBs (EPA Method 8082)			
PCB-1016	ug/L	NA	<0.262
PCB-1221	ug/L	NA	<0.262
PCB-1232	ug/L	NA	<0.262
PCB-1242	ug/L	NA	<0.262
PCB-1248	ug/L	NA	<0.236
PCB-1254	ug/L	NA	<0.236
PCB-1260	ug/L	NA	<0.236
Pesticides (EPA Method 8081A)			
4,4'-DDD	ug/L	0.73	<0.00262
4,4'-DDE	ug/L	0.52	<0.000786
4,4'-DDT	ug/L	0.16	<0.00043
Aldrin	ug/L	0.05	<0.00589
Alpha -BHC	ug/L	0.038	<0.00918
beta -BHC	ug/L	0.042	<0.00539
Chlordane	ug/L	2.1	<0.00262
delta-BHC	ug/L	1.4	<0.00334
Dieldrin	ug/L	0.033	<0.00657
Endosulfan I	ug/L	42	BRDL?
Endosulfan II	ug/L	42	<0.00213
Endosulfan sulfate	ug/L	NA	<0.00394
Endrin	ug/L	2	<0.00213
Endrin aldehyde	ug/L	2.1	<0.00861
gamma-BHC (Lindane)	ug/L	0.2	<0.00213
Heptachlor	ug/L	0.4	<0.00262
Heptachlor epoxide	ug/L	0.2	<0.00685
Methoxychlor	ug/L	40	<0.00236
Toxaphene	ug/L	3	<0.0642
Semivolatile Organics by GC/MS			
1,2,4,5-Tetrachlorobenzene	ug/L	2.1	<1.08
1,2,4-Trimethylbenzene	ug/L	NA	<1.55
1,3-Dinitrobenzene	ug/L	1	<1.39
1,4-Naphthoquinone	ug/L	NA	<1.25
1,4-Phenylenediamine	ug/L	NA	<0.468
1-Naphthylamine	ug/L	NA	<1.66
2,4,5-Trichlorophenol	ug/L	NA	<1.56
2,4,6-Trichlorophenol	ug/L	700	<1.29
2,4-Dichlorophenol	ug/L	16	<1.45
2,4-Dimethylphenol	ug/L	60	<1.39
2,4-Dinitrophenol	ug/L	140	<1.39
2,4-Dinitrotoluene	ug/L	1.8	<1.71
2,6-Dinitrotoluene	ug/L	0.45	<1.39
2,6-Dichlorophenol	ug/L	NA	<1.29
2,6-Dinitrotoluene	ug/L	0.26	<1.29
2-Acetylaminofluorene	ug/L	NA	<1.41
2-Chloronaphthalene	ug/L	560	<1.52
2-Chlorophenol	ug/L	40	<1.29
2-Methylnaphthalene	ug/L	28	<1.53
2-Methylphenol (o-Cresol)	ug/L	35	<1.18
2-Naphthylamine	ug/L	0.057	<1.01
2-Nitroaniline	ug/L	60	<1.39
2-Nitrophenol	ug/L	NA	<1.68
3,3'-Dichlorobenzidine	ug/L	0.39	<2.32
3,3'-Dimethylbenzidine	ug/L	NA	<2.35
3-Methylphenol	ug/L	70	<0.804
3-Methylcholanthrene	ug/L	NA	<2.04
3-Nitroaniline	ug/L	NA	<1.18
4,6-Dinitro-2-methylphenol	ug/L	NA	<2.56
4-Aminobiphenyl	ug/L	0.00053	<1.32
4-Bromophenyl phenyl ether	ug/L	NA	<2.24
4-Chloro-3-methylphenol	ug/L	700	<1.32
4-Chloroaniline	ug/L	20	<1.45
4-Chlorophenyl phenyl ether	ug/L	NA	<1.24
4-Nitrobiphenyl	ug/L	NA	<1.32
4-Nitrophenol	ug/L	60	<2.56
4-Nitroquinoline-1-oxide	ug/L	NA	<1.66
5-Nitro-o-toluidine	ug/L	NA	<1.66
7,12-Dimethylbenz(a)anthracene	ug/L	NA	<1.08
Acenaphthene	ug/L	420	<1.25
Acenaphthylene	ug/L	210	<1.53
Acetophenone	ug/L	NA	<1.32
Aniline	ug/L	2100	<1.29
Benzo (a) anthracene	ug/L	0.18	<1.29
Benzo (a) pyrene	ug/L	0.2	<1.76
Benzo (b) fluoranthene	ug/L	0.18	<1.68
Benzo (g,h,i) perylene	ug/L	210	<1.68
Benzo (k) fluoranthene	ug/L	1.8	<1.18
Benzyl alcohol	ug/L	780	<1.39
Bis(2-chloroethoxy)methane	ug/L	NA	<1.29
Bis(2-chloroethyl) ether	ug/L	0.16	<1.29
Bis(2-chloroisopropyl) ether	ug/L	200	<1.41
Bis(2-ethylhexyl)phthalate	ug/L	6	<1.82
Butyl benzyl phthalate	ug/L	140	<1.76
Chrysene	ug/L	NA	<1.45
Diallate	ug/L	2.8	<1.29
Dibenz (a,h) anthracene	ug/L	NA	<1.53
Dibenzofuran	ug/L	0.125	<1.66
Diethylether	ug/L	7	<1.18
Diethyl phthalate	ug/L	6600	<1.39
Dimethoate	ug/L	1.4	<1.18
Dimethyl phthalate	ug/L	NA	<1.56
Di-n-butyl phthalate	ug/L	700	<1.45
Di-n-octyl phthalate	ug/L	140	<1.53
Diphenyl	ug/L	7	<0.468
Diphenylamine	ug/L	180	<1.66
Disulfoton	ug/L	0.7	<0.713
Ethyl Methanesulfonate	ug/L	NA	<0.289
Fluoranthene	ug/L	NA	<0.713
Fluorene	ug/L	280	<1.21
Hexachlorobenzene	ug/L	0.96	<1.66
Hexachlorobutadiene	ug/L	1	<1.45
Hexachlorocyclopentadiene	ug/L	50	<2.47
Hexachloroethane	ug/L	1	<1.55
Hexachloropropene	ug/L	NA	<1.68
Indeno (1,2,3-cd) pyrene	ug/L	0.18	<1.32
Isodrin	ug/L	NA	<0.468
Isophorone	ug/L	100	<1.36
Isosafrole	ug/L	NA	<0.468
Kepone	ug/L	NA	<2.32
Methapyrilene	ug/L	NA	<0.468
Methyl Methanesulfonate	ug/L	1.8	<0.598
Naphthalene	ug/L	14	<1.29
N-Nitrosodiethylamine	ug/L	NA	<0.468
N-Nitrosodiethylamine	ug/L	0.00551	<1.07
N-Nitrosodimethylamine	ug/L	0.0167	<0.468
N-Nitrosodi-n-butylamine	ug/L	NA	<1.18
N-Nitrosodi-n-propylamine	ug/L	0.096	<1.53
N-Nitrosodiphenylamine	ug/L	196	<1.32
N-Nitrosomethylethylamine	ug/L	0.688	<1.55
N-Nitrosomorpholine	ug/L	NA	<0.468
N-Nitrosopiperidine	ug/L	0.0303	<0.289
N-Nitrosopyrrolidine	ug/L	0.16	<0.468
O,O,O-Triethylphosphorothioate	ug/L	NA	<0.598
o-Toluidine	ug/L	13	<0.598
p-Dimethylaminoazobenzene	ug/L	NA	<0.919
Parathion ethyl	ug/L	NA	<1.88
Parathion methyl	ug/L	3	<0.882
Pentachlorobenzene	ug/L	NA	<0.664
Pentachloronitrobenzene	ug/L	NA	<0.488
Pentachlorophenol	ug/L	1	<2.71
Phenacetin	ug/L	NA	<2.32
Phenanthrene	ug/L	210	<1.29
Phenol	ug/L	2000	<2.82
Pronamide	ug/L	5.4	<0.488
Pyrazophos	ug/L	3	<0.668
Pyridine	ug/L	NA	<0.488
Safrole	ug/L	NA	<0.668
Thionazin	ug/L	NA	<0.864
Volatile Organic Compounds			
1,1-Dichloroethane	ug/L	NA	<0.45
1,1,2-Trichloroethane	ug/L	70	<0.71
1,1-Dichloroethene	ug/L	600	<0.1
1,2-Dichloropropane	ug/L	NA	<0.8
1,2-Dichloroethane	ug/L	NA	<0.68
Acrolein	ug/L	NA	<1.6
Allyl chloride	ug/L	NA	<0.7
Benzene	ug/L	5000	<0.32
Bis(chloromethyl)ether	ug/L	100	<0.32
Ethyl Methacrylate	ug/L	NA	<0.68
Methacrylonitrile	ug/L	NA	<3.2
Methyl Methacrylate	ug/L	NA	<0.76
Naphthalene	ug/L	100	<3
Propionitrile	ug/L	NA	<3.4

Detections at or above the RL are shown in bold italics on gray background.
Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.
NA = No standard

Black Hawk County Landfill
Appendix I Results
Monitoring Well MW-602B

Parameter Name	Units	GPS	Dec-14	Mar-15	Jun-15	Sep-15	Dec-15	Mar-16	Sep-16	Mar-17	Sep-17	Mar-18	Sep-18	Mar-19	Sep-19	Apr-20	Sep-20	Mar-21	Nov-21	Apr-22	Oct-22	Apr-23	Sep-23	May-24	Oct-24
Appendix I Inorganics																									
Total Suspended Solids	mg/L	NS	***2***	***7.8***	***1.13***	***3.38***	***15.6***	***9.29***	***13.5***	***3.75***	***3.25***	***2.13***	***6.33***	***5.13***	***2.13***	***0.875 J***	***1.63 J***	***1.63 J***	***2.13***	***1 J***	<0.638	***2.5***	***1.38 J***	***1.75 J***	***1.5 J***
Turbidity, Field	NTU	NS	***3.075***	***56.44***	***8.782***	***32.47***	--	--	***11.78***	***9.519***	***4.116***	***3.675***	***3.014***	***15.06***	***1.52***	***1.08***	***2.52***	***0.25***	***0.18***	0	0	***0.94***	***1.22***	***1.09***	***2.51***
Turbidity, Lab	NTU	NS	***2.7***	***39.9***	***1.6***	***10.4***	***4.5***	***3.9***	***27.9***	***6.5***	***5.4***	***3.1***	***2.7***	***5.6***	***1.91***	***0.66 J***	--	--	--	--	--	--	--	--	--
Antimony	µg/L	6	***0.273 J***	<0.161	***0.162 J***	***0.209 J***	***0.169 J***	***0.284 J***	<0.237	<0.185	<0.185	<0.42	<0.42	<0.53	<0.53	<0.58	<0.51	<1.1	<1.1	<0.69	<0.69	<1	<1	<1	<1
Antimony, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	<0.945	<0.945	<0.945	<0.945	<0.945	<0.672	***0.783 J***	<0.505	<0.505	<0.57	<0.57	<0.75	<0.75	<0.88	<0.88	<0.75	<0.75	<0.75	<0.75	<0.53	<0.53	<0.53	<0.53
Arsenic, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	***225***	***263***	***334***	***330***	***279***	***177***	***188***	***177***	***161***	***146***	***138***	***113***	***133***	***113***	***126***	***119***	***129***	***98.2***	***125***	***106***	***109***	***104***	***109***
Barium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	<0.039	<0.039	<0.039	<0.039	<0.039	<0.221	<0.221	<0.125	<0.125	<0.19	<0.19	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.33	<0.33	<0.33	<0.33
Beryllium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	<0.112	<0.112	<0.112	<0.112	<0.112	***0.046 J***	***0.109 J***	<0.0441	***0.057 J***	<0.06	<0.06	<0.077	<0.039	<0.039	***0.148***	<0.051	<0.051	<0.055	<0.055	<0.1	<0.1	<0.1	***0.175 J***
Cadmium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	***3.89 J***	***86.8***	***13.3***	***50***	***433***	***268***	***112***	***22.6***	***10.2***	***19.9***	***20.6***	***23.4***	***4.33 J***	***1.75 J***	***3.88 J***	***2.04 J***	***2.49 J***	***3.39 J***	***1.35 J***	***3.4 J***	***2.91 J***	<1.2	***3.31 J***
Chromium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	9.83	***0.636***	***2.8***	***1.79***	***0.319 J***	***1.35***	***0.736***	***1.73***	***0.257 J***	***0.36 J***	***0.249 J***	***0.477 J***	***0.505***	***0.101 J***	<0.091	***0.267 J***	<0.091	<0.19	<0.19	<0.19	***0.216 J***	<0.17	***2.85***	***1.99***
Cobalt, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	1300	***5.06***	***8.96***	***1.68 J***	***4.5***	***8.57***	***6.63***	***4.68 J***	<2.19	<2.19	<1.6	<1.6	<2	<2	<3.2	<1.5	<1.4	<1.4	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8
Copper, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	***0.147 J***	***0.133 J***	<0.0967	***0.137 J***	***0.233 J***	***0.298 J***	***0.461 J***	<0.324	<0.324	<0.25	<0.25	<0.27	<0.27	<0.27	***0.223 J***	<0.21	<0.21	<0.24	<0.24	<0.24	<0.24	<0.26	<0.26
Lead, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	µg/L	722	***31.8***	***248***	***108***	***18***	***45.4***	***19.3***	***16.7***	***4.99 J***	***6.17***	***3.57 J***	***7.26***	***4.67 J***	***2.61 J***	***2.14 J***	***4.48 J***	***2.21 J***	***2.82 J***	<1.9	***2.34 J***	***2.17 J***	<1.9	***9.51***	***27.5***
Nickel, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	<3.34	<3.34	<3.34	<3.34	<3.34	***1.68 J***	***0.639 J***	***1.14 J***	<0.928	<0.9	<0.9	<1	<1	<1	***2.16 J***	<0.96	<0.96	<0.96	***1.56 J***	<1.4	***1.68 J***	<1.4	<1.4
Selenium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	µg/L	100	***0.053 J***	<0.042	<0.042	<0.042	<0.042	<0.153	<0.153	<0.14	***0.141 J***	<0.3	<0.3	<0.37	<0.37	<0.37	<0.37	<0.42	<0.42	<0.49	<0.49	<0.5	<0.5	<0.5	<0.5
Silver, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	<0.0325	<0.0325	<0.0325	<0.0325	<0.0325	<0.0255	<0.0255	<0.0644	<0.0644	<0.17	<0.17	<0.27	<0.27	<0.26	***0.381 J***	***0.823 J***	<0.26	<0.26	<0.26	<0.26	<0.26	<0.57	<0.57
Thallium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium	µg/L	35	***1.23 J***	***1.62 J***	***0.632 J***	***1.97 J***	***2.96 J***	***1.7 J***	***3.78 J***	***1.2 J***	***1.03 J***	***1.14 J***	***1.16 J***	***1.06 J***	***0.865 J***	<0.82	<0.85	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	***1.76 J***
Vanadium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	2000	<6.95	<6.95	<6.95	***15.5***	***8.18 J***	<5.21	<5.21	<11.5	<11.5	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<6.4	***8.5 J***	<9.7	<9.7
Zinc, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Appendix I Organics																									
1,1,1,2-Tetrachloroethane	µg/L	70	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38
1,1,1-Trichloroethane	µg/L	200	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19
1,1,2,2-Tetrachloroethane	µg/L	0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47
1,1,2-Trichloroethane	µg/L	5	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45
1,1-Dichloroethane	µg/L	140	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22
1,1-Dichloroethylene	µg/L	7	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56
1,2,3-Trichloropropane	µg/L	0.0058	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59
1,2-Dibromo-3-chloropropane	µg/L	0.2	<0.12	<0.12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2
1,2-Dibromoethane	µg/L	0.05	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34
1,2-Dichlorobenzene	µg/L	600	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37
1,2-Dichloroethane	µg/L	5	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39
1,2-Dichloropropane	µg/L	5	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27
1,4-Dichlorobenzene	µg/L	75	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23
2-Butanone	µg/L	4000	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<1.04	<1.04	<1.04	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1
2-Hexanone	µg/L	NS	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
4-Methyl-2-pentanone	µg/L	560	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1
Acetone	µg/L	6300	<1.79	<1.79	<1.79	<1.79	<1.79	***2.11 J***	<1.79	***1.91 J***	***3.87 J***	***3.8 J***	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1
Acrylonitrile	µg/L	0.32	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2
Benzene	µg/L	5	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22
Bromochloromethane	µg/L	90	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54
Bromodichloromethane	µg/L	80	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39
Bromomethane	µg/L	10	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Carbon disulfide	µg/L	700	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45
Carbon Tetrachloride	µg/L	5	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65
Chlorobenzene	µg/L	100	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Chloroethane	µg/L	2800	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79
Chloromethane	µg/L	NS	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61
cis-1,2-Dichloroethylene	µg/L	70	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21
cis-1,3-Dichloropropene	µg/L	NS	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Dibromochloromethane	µg/L	80	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75
Dibromomethane	µg/L	70	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Dichloromethane	µg/L	5	<0.17	<0.17	<0.17	<0.17	<0.17	***0.331 J***	<0.17	<0.17	<0.17	<0.17	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7
Ethylbenzene	µg/L	700	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31
Iodomethane	µg/L	NS	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7
Styrene	µg/L	100	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37
Tetrachloroethylene	µg/L	5	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48
Toluene	µg/L	1000	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43
Trans-1,2-dichloroethylene	µg/L	100	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27
trans-1,3-Dichloropropene	µg/L	NS	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56
trans-1,4-Dichloro-2-butene	µg/L	1.8	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Tribromomethane	µg/L	80	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78
Trichloroethylene	µg/L	5	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43
Trichlorofluoromethane	µg/L	2000	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38
Trichloromethane	µg/L	80	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3
Vinyl Acetate	µg/L	NS	<0.74	<0.74	<0.74	<0.74	<0.74	<0.74	<0.74	<0.74	<0.74	<0.74	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Vinyl Chloride	µg/L	2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.6	<0.6	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18
Xylenes	µg/L	10000	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Detections at or above the RL are shown in bold italics on gray background.

Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.

NS = No standard

Black Hawk County Landfill
Appendix I Results
Monitoring Well MW-603B

Parameter Name	Units	GPS	Dec-14	Mar-15	Jun-15	Sep-15	Dec-15	Mar-16	Sep-16	Mar-17	Sep-17	Mar-18	Sep-18	Mar-19	Sep-19	Apr-20	Sep-20	Dec-20	Mar-21	Nov-21	Apr-22	Oct-22	Apr-23	Sep-23	May-24	Oct-24
Appendix I Inorganics																										
Total Suspended Solids	mg/L	NS	***3.63***	***3.67***	***4.25***	***2.88***	***3.38***	***3.76***	***4.25***	***1.88***	***1.25 J***	***3.87***	***1.88***	***3.75***	***1.63 J***	***0.875 J***	***1 J***	<0.638	***1.5 J***	***0.625***	***1.38 J***	***1 J***	***1.25 J***	<0.638	<1.39	<1.39
Turbidity, Field	NTU	NS	***7.389***	***24.03***	***0.9514***	***0.7255***	--	--	***0.4871***	***2.864***	***4.522***	***3.596***	***5.542***	***3.14***	***7.5***	***15.81***	***1.09***	***5.47***	***1.76***	***0.09***	***3.53***	0	***3.99***	***2.34***	***1.86***	***1.01***
Turbidity, Lab	NTU	NS	***3.7***	***5***	***13.6***	***1.2***	***5.5***	***2.1***	***14.9***	***1.7***	***1.3***	***5.1***	***4.5***	***8.8***	***8.95***	***1.43***	--	--	--	--	--	--	--	--	--	--
Antimony	µg/L	6	***0.248 J***	***0.296 J***	***0.637 J***	<0.161	***0.64 J***	***0.516 J***	<0.237	<0.185	***0.313 J***	<0.42	<0.42	***0.661 J***	<0.53	<0.58	<0.51	--	<1.1	<1.1	***0.791 J***	<0.69	<1	<1	<1	<1
Antimony, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	<0.945	***1.05 J***	<0.945	<0.945	<0.945	***0.799 J***	***1.84 J***	***2.38***	***3.87***	***3.68***	***2.65***	***2.25***	***2.57***	***1.9 J***	***2.09***	***2.2***	***1.08 J***	***1.6 J***	***1.42 J***	***1.17 J***	***1 J***	***1.17 J***	***0.633 J***	***0.742 J***
Arsenic, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	***133***	***119***	***90.6***	***86.3***	***84.9***	***69.4***	***69.2***	***66.5***	***41.7***	***64***	***50.2***	***64.9***	***53.4***	***43***	***37.4***	--	***39.1***	***39.9***	***41.2***	***48.7***	***44.2***	***35.2***	***38.6***	***34.3***
Barium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	<0.039	<0.039	<0.039	<0.039	<0.039	<0.221	<0.221	<0.125	<0.125	<0.19	<0.19	<0.27	<0.27	<0.27	<0.27	--	<0.27	<0.27	<0.27	<0.27	<0.33	<0.33	<0.33	<0.33
Beryllium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	<0.112	<0.112	<0.112	<0.112	<0.112	<0.0351	<0.0351	<0.0441	<0.0441	<0.06	<0.06	<0.077	<0.039	<0.039	<0.049	--	<0.051	<0.051	<0.055	<0.055	<0.1	<0.1	<0.1	<0.1
Cadmium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	***1.53 J***	***1.83 J***	***8.35***	***8.84***	***5.11***	***2.62 J***	<0.355	<0.729	<0.729	<0.76	<0.76	<0.98	<0.98	<1.1	<1.1	--	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.2	<1.2
Chromium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	9.83	***0.481 J***	***0.754***	***7.5***	***2.85***	***2.88***	***2.19***	***1.99***	***0.2 J***	***0.124 J***	***0.192 J***	***0.07 J***	***0.203 J***	<0.091	<0.091	<0.091	--	<0.091	<0.19	<0.19	<0.19	<0.17	<0.17	<0.17	<0.17
Cobalt, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	1300	***2.45***	***1.74 J***	***1.04 J***	***1.21 J***	***1.06 J***	***1.37 J***	<1.22	<2.19	<2.19	<1.6	<1.6	<2	<2	<3.2	<1.5	--	<1.4	<1.4	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8
Copper, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	***0.161 J***	***0.814***	***0.189 J***	***0.219 J***	***3.05***	<0.211	<0.211	<0.324	<0.324	<0.25	<0.25	<0.27	<0.27	<0.27	<0.11	--	<0.21	<0.21	<0.24	<0.24	<0.24	<0.24	<0.26	<0.26
Lead, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	µg/L	722	***4.45 J***	***4.43 J***	***209***	***46***	***60***	***13.9***	***3.61 J***	<0.929	<0.929	***1.3 J***	<3	***2.01 J***	<1.7	<1.9	<1.9	--	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<2.1	<2.1
Nickel, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	<3.34	<3.34	<3.34	<3.34	<3.34	<0.63	<0.63	<0.928	<0.928	<0.9	<0.9	<1	<1	<1	<1	--	<0.96	<0.96	<0.96	<0.96	<1.4	<1.4	<1.4	<1.4
Selenium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	µg/L	100	<0.042	<0.042	<0.042	<0.042	<0.042	<0.153	<0.153	<0.14	***0.152 J***	<0.3	<0.3	<0.37	<0.37	<0.37	<0.37	--	<0.42	<0.42	<0.49	<0.49	<0.5	<0.5	<0.5	<0.5
Silver, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	<0.0325	<0.0325	<0.0325	<0.0325	<0.0325	<0.0255	<0.0255	<0.0644	<0.0644	<0.17	<0.17	<0.27	<0.27	<0.26	<0.26	--	<0.26	***0.442 J***	<0.26	<0.26	<0.26	<0.26	<0.57	<0.57
Thallium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium	µg/L	35	***1.37 J***	***1.3 J***	<0.449	***0.594 J***	***0.749 J***	***0.396 J***	***1.12 J***	<0.84	<0.84	<0.52	<0.52	<0.82	<0.82	<0.82	<0.85	--	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Vanadium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	2000	<6.95	<6.95	<6.95	***12.4***	***7.21 J***	<5.21	<5.21	<11.5	<11.5	<10	<10	<10	<10	<10	<10	--	<10	<10	<10	<10	<6.4	<6.4	<9.7	<9.7
Zinc, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Appendix I Organics																										
1,1,1,2-Tetrachloroethane	µg/L	70	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.38	<0.38	<0.38	<0.38	<0.38	--	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38
1,1,1-Trichloroethane	µg/L	200	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.19	<0.19	<0.19	<0.19	<0.19	--	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19
1,1,2,2-Tetrachloroethane	µg/L	0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.47	<0.47	<0.47	<0.47	<0.47	--	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47
1,1,2-Trichloroethane	µg/L	5	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.45	<0.45	<0.45	<0.45	<0.45	--	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45
1,1-Dichloroethane	µg/L	140	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.22	<0.22	<0.22	<0.22	<0.22	--	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22
1,1-Dichloroethylene	µg/L	7	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.56	<0.56	<0.56	<0.56	<0.56	--	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56
1,2,3-Trichloropropane	µg/L	0.0058	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.59	<0.59	<0.59	<0.59	<0.59	--	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59
1,2-Dibromo-3-chloropropane	µg/L	0.2	<0.12	<0.12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.2	<1.2	<1.2	<1.2	<1.2	--	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2
1,2-Dibromoethane	µg/L	0.05	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.34	<0.34	<0.34	<0.34	<0.34	--	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34
1,2-Dichlorobenzene	µg/L	600	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.37	<0.37	<0.37	<0.37	<0.37	--	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37
1,2-Dichloroethane	µg/L	5	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.39	<0.39	<0.39	<0.39	<0.39	--	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39
1,2-Dichloropropane	µg/L	5	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.27	<0.27	<0.27	<0.27	<0.27	--	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27
1,4-Dichlorobenzene	µg/L	75	<0.2	<0.2	<0.2	***0.331 J***	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.23	<0.23	<0.23	<0.23	<0.23	--	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23
2-Butanone	µg/L	4000	<0.47	<0.47	<0.47	***0.94 J***	<0.47	<0.47	<0.47	<1.04	<1.04	<1.04	<2.1	<2.1	<2.1	<2.1	<2.1	--	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1
2-Hexanone	µg/L	NS	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<2	<2	<2	<2	--	<2	<2	<2	<2	<2	<2	<2	<2
4-Methyl-2-pentanone	µg/L	560	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<2.1	<2.1	<2.1	<2.1	<2.1	--	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1
Acetone	µg/L	6300	<1.79	<1.79	<1.79	<1.79	<1.79	<1.79	<1.79	***1.92 J***	***3.3 J***	<1.79	<3.1	<3.1	<3.1	<3.1	<3.1	--	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1
Acrylonitrile	µg/L	0.32	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<2.2	<2.2	<2.2	<2.2	<2.2	--	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2
Benzene	µg/L	5	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.22	<0.22	<0.22	<0.22	<0.22	--	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22
Bromochloromethane	µg/L	90	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.54	<0.54	<0.54	<0.54	<0.54	--	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54
Bromodichloromethane	µg/L	80	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.39	<0.39	<0.39	<0.39	<0.39	--	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39
Bromomethane	µg/L	10	<0.22	<0.22	<0.22	<0.22	<0.22	***0.224 J***	<0.22	<0.22	<0.22	<0.22	<1.1	<1.1	<1.1	<1.1	<1.1	--	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Carbon disulfide	µg/L	700	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	***0.927 J***	***0.293 J***	***0.487 J***	<0.15	<0.45	<0.45	***0.509 J***	***0.603 J***	<0.45	--	***0.622 J***	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45
Carbon Tetrachloride	µg/L	5	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.65	<0.65	<0.65	<0.65	<0.65	--	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65
Chlorobenzene	µg/L	100	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.4	<0.4	<0.4	<0.4	<0.4	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Chloroethane	µg/L	2800	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.79	<0.79	<0.79	<0.79	<0.79	--	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79
Chloromethane	µg/L	NS	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.61	<0.61	<0.61	<0.61	<0.61	--	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61
cis-1,2-Dichloroethylene	µg/L	70	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.21	<0.21	<0.21	<0.21	<0.21	--	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21
cis-1,3-Dichloropropene	µg/L	NS	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.25	<0.25	<0.25	<0.25	<0.25	--	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Dibromochloromethane	µg/L	80	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.75	<0.75	<0.75	<0.75	<0.75	--	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75
Dibromomethane	µg/L	70	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.33	<0.33	<0.33	<0.33	<0.33	--	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Dichloromethane	µg/L	5	<0.17	<0.17	<0.17	<0.17	<0.17	***0.257 J***	<0.17	<0.17	<0.17	<0.17	<1.7	<1.7	<1.7	<1.7	<1.7	--	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7
Ethylbenzene	µg/L	700	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.31	<0.31	<0.31	<0.31	<0.31	--	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31
Iodomethane	µg/L	NS	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<7	<7	<7	<7	<7	--	<7	<7	<7	<7	<7	<7	<7	<7
Styrene	µg/L	100	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.37	<0.37	<0.37	<0.37	<0.37	--	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37
Tetrachloroethylene	µg/L	5	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.48	<0.48	<0.48	<0.48	<0.48	--	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48
Toluene	µg/L	1000	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.43	<0.43	<0.43	<0.43	<0.43	--	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43
Trans-1,2-dichloroethylene	µg/L	100	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.27	<0.27	<0.27	<0.27	<0.27	--	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27
trans-1,3-Dichloropropene	µg/L	NS	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.56	<0.56	<0.56	<0.56	<0.56	--	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56
trans-1,4-Dichloro-2-butene	µg/L	1.8	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<1.1	<1.1	<1.1	<1.1	<1.1	--	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Tribromomethane	µg/L	80	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.78	<0.78	<0.78	<0.78	<0.78	--	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78
Trichloroethylene	µg/L	5	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.43	<0.43	<0.43	<0.43	<0.43	--	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43
Trichlorofluoromethane	µg/L	2000	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.38	<0.38	<0.38	<0.38	<0.38	--	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38
Trichloromethane	µg/L	80	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<1.3	<1.3	<1.3	<1.3	<1.3	--	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3
Vinyl Acetate	µg/L	NS	<0.74	<0.74	<0.74	<0.74	<0.74	<0.74	<0.74	<0.74	<0.74	<0.74	<2.5	<2.5	<2.5	<2.5	<2.5	--	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Vinyl Chloride	µg/L	2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.6	<0.6	<0.18	<0.18	<0.18	--	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18
Xylenes	µg/L	10000	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.4	<0.4	<0.4	<0.4	<0.4	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Detections at or above the RL are shown in bold italics on gray background.

Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.

NS = No standard

Black Hawk County Landfill
Appendix I Results
Monitoring Well MW-604B

Parameter Name	Units	GPS	Dec-14	Mar-15	Jun-15	Sep-15	Dec-15	Mar-16	Sep-16	Mar-17	Sep-17	Mar-18	Sep-18	Mar-19	Sep-19	Mar-20	Sep-20	Dec-20	Mar-21	Nov-21	Apr-22	Nov-22	Apr-23	Sep-23	May-24	Oct-24
Appendix I Inorganics																										
Total Suspended Solids	mg/L	NS	***2.25***	<1.6	***2.75***	***1.75***	***5.5***	***4.94***	***2.5***	***2.13***	***2.88***	***2***	***2.75***	***1.5 J***	***1.38 J***	***1.25 J***	***1.5 J***	<0.638	***2.6 J***	***1.75 J***	***1.13 J***	***2.75***	***1.63 J***	***1.75 J***	***2.63***	***2.38***
Turbidity, Field	NTU	NS	***3.915***	***0.0777***	***4.036***	***1.975***	--	--	***5.588***	***0.8619***	***1.691***	***0.2892***	***1.525***	0	***14.72***	***0.24***	***1.81***	***0.3***	***0.19***	***0.14***	0	***0.5***	***1.91***	***1.22***	***6.52***	***1.8***
Turbidity, Lab	NTU	NS	***2.5***	***1.3***	<0.7	<0.7	***3.3***	***1.5***	***1.4***	***0.4 J***	***1***	***1.2***	<0.4	***1.6***	***0.41 J***	***0.65 J***	--	--	--	--	--	--	--	--	--	--
Antimony	µg/L	6	***0.552 J***	***0.468 J***	***0.238 J***	***0.466***	***1.04***	***0.586 J***	<0.237	<0.185	<0.185	<0.42	<0.42	<0.53	<0.53	<0.58	<0.51	--	<1.1	<1.1	<0.69	<0.69	<1	<1	<1	<1
Antimony, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	<0.945	<0.945	<0.945	<0.945	<0.945	***0.782 J***	<0.672	<0.505	<0.505	<0.57	<0.57	<0.75	<0.75	<0.88	<0.88	--	<0.75	<0.75	<0.75	<0.75	<0.53	<0.53	<0.53	<0.53
Arsenic, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	***220***	***297***	***191***	***198***	***174***	***133***	***141***	***135***	***118***	***110***	***132***	***86.4***	***116***	***88.1***	***201***	--	***91.7***	***94.4***	***74.8***	***84.9***	***78.9***	***73.1***	***72.2***	***77.5***
Barium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	<0.039	<0.039	<0.039	<0.039	***0.068 J***	<0.221	<0.221	<0.125	<0.125	<0.19	<0.19	<0.27	<0.27	<0.27	<0.27	--	<0.27	<0.27	<0.27	<0.27	<0.33	<0.33	<0.33	<0.33
Beryllium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	<0.112	***0.155 J***	<0.112	<0.112	<0.112	***0.051 J***	***0.068 J***	<0.0441	***0.07 J***	<0.06	***0.083 J***	<0.077	***0.089 J***	<0.039	<0.049	--	<0.051	<0.051	<0.055	***0.07 J***	<0.1	<0.1	<0.1	<0.1
Cadmium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	<1.24	<1.24	<1.24	<1.24	***4.18 J***	***1.85 J***	<0.355	<0.729	***1.16 J***	***4.89 J***	***1.61 J***	***2.27 J***	<0.98	***3.87 J***	***10.9***	***3.42 J***	***8.57***	***3.2 J***	***4.82 J***	***3.81 J***	***7.73***	***2.54 J***	***8.25***	***3.42 J***
Chromium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	9.83	***0.86***	***0.337 J***	***0.807***	***1.32***	***0.966***	***0.202 J***	***0.95***	***0.121 J***	***0.675***	***0.2 J***	***0.393 J***	<0.091	***0.515***	<0.091	***0.134 J***	--	<0.091	<0.19	<0.19	***0.23 J***	<0.17	***0.192 J***	<0.17	***0.485 J***
Cobalt, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	1300	***4.35***	***14.1***	***2.52***	***2.3***	***2.67***	***2.29 J***	<1.22	<2.19	<2.19	<1.6	<1.6	<2	<2	<3.2	***1.66 J***	--	***2.05 J***	<1.4	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8
Copper, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	***0.216 J***	***1.25***	<0.0967	***0.104***	***0.099 J***	<0.211	<0.211	<0.324	<0.324	<0.25	<0.25	<0.27	<0.27	<0.27	<0.11	--	<0.21	<0.21	<0.24	<0.24	<0.24	***0.266 J***	<0.26	<0.26
Lead, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	µg/L	722	***4.63 J***	***5.49***	***3.79 J***	***4.77***	***7.5***	***1.92 J***	***4.18 J***	***2 J***	***3.46 J***	***2.16 J***	<3	***1.75 J***	***17.3***	***2.49 J***	***56.9***	--	***7.18***	***5.72***	***3.59 J***	***6.12***	***3.83 J***	***6.75***	***4.72 J***	***5.5***
Nickel, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	<3.34	<3.34	<3.34	<3.34	<3.34	<0.63	<0.63	<0.928	<0.928	<0.9	<0.9	<1	<1	<1	<1	--	<0.96	<0.96	<0.96	<0.96	<1.4	<1.4	<1.4	<1.4
Selenium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	µg/L	100	<0.042	<0.042	<0.042	***0.107***	<0.042	***0.188 J***	<0.153	<0.14	<0.14	<0.3	<0.3	<0.37	<0.37	<0.37	<0.37	--	<0.42	<0.42	<0.49	<0.49	<0.5	<0.5	<0.5	<0.5
Silver, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	<0.0325	<0.0325	<0.0325	<0.0325	<0.0325	<0.0255	<0.0255	<0.0644	<0.0644	<0.17	<0.17	<0.27	<0.27	<0.26	<0.26	--	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.57	<0.57
Thallium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium	µg/L	35	***0.975 J***	***1.15 J***	***0.834 J***	***0.89***	***1.03 J***	***0.605 J***	***0.972 J***	<0.84	<0.84	***0.787 J***	***0.775 J***	<0.82	<0.82	<0.82	<0.85	--	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Vanadium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	2000	<6.95	***7.62 J***	<6.95	<6.95	***10.4***	***5.86 J***	<5.21	<11.5	<11.5	<10	<10	<10	<10	<10	<10	--	<10	<10	<10	<10	<6.4	<6.4	<9.7	<9.7
Zinc, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Appendix I Organics																										
1,1,1,2-Tetrachloroethane	µg/L	70	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.38	<0.38	<0.38	<0.38	<0.38	--	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38
1,1,1-Trichloroethane	µg/L	200	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.19	<0.19	<0.19	<0.19	<0.19	--	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19
1,1,2,2-Tetrachloroethane	µg/L	0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.47	<0.47	<0.47	<0.47	<0.47	--	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47
1,1,2-Trichloroethane	µg/L	5	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.45	<0.45	<0.45	<0.45	<0.45	--	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45
1,1-Dichloroethane	µg/L	140	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.22	<0.22	<0.22	<0.22	<0.22	--	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22
1,1-Dichloroethylene	µg/L	7	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.56	<0.56	<0.56	<0.56	<0.56	--	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56
1,2,3-Trichloropropane	µg/L	0.0058	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.59	<0.59	<0.59	<0.59	<0.59	--	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59
1,2-Dibromo-3-chloropropane	µg/L	0.2	<0.12	<0.12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.2	<1.2	<1.2	<1.2	<1.2	--	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2
1,2-Dibromoethane	µg/L	0.05	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.34	<0.34	<0.34	<0.34	<0.34	--	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34
1,2-Dichlorobenzene	µg/L	600	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.37	<0.37	<0.37	<0.37	<0.37	--	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37
1,2-Dichloroethane	µg/L	5	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.39	<0.39	<0.39	<0.39	<0.39	--	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39
1,2-Dichloropropane	µg/L	5	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.27	<0.27	<0.27	<0.27	<0.27	--	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27
1,4-Dichlorobenzene	µg/L	75	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.23	<0.23	<0.23	<0.23	<0.23	--	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23
2-Butanone	µg/L	4000	<0.47	<0.47	<0.47	***0.769***	<0.47	<0.47	<0.47	<1.04	<1.04	<1.04	<2.1	<2.1	<2.1	<2.1	<2.1	--	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1
2-Hexanone	µg/L	NS	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<2	<2	<2	<2	--	<2	<2	<2	<2	<2	<2	<2	<2
4-Methyl-2-pentanone	µg/L	560	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<2.1	<2.1	<2.1	<2.1	<2.1	--	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1
Acetone	µg/L	6300	<1.79	<1.79	<1.79	<1.79	<1.79	***2.09 J***	<1.79	***3.72 J***	***4.49 J***	<1.79	<3.1	***3.59 J***	<3.1	<3.1	<3.1	--	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1
Acrylonitrile	µg/L	0.32	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<2.2	<2.2	<2.2	<2.2	<2.2	--	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2
Benzene	µg/L	5	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.22	<0.22	<0.22	<0.22	<0.22	--	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22
Bromochloromethane	µg/L	90	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.54	<0.54	<0.54	<0.54	<0.54	--	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54
Bromodichloromethane	µg/L	80	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.39	<0.39	<0.39	<0.39	<0.39	--	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39
Bromomethane	µg/L	10	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<1.1	<1.1	<1.1	<1.1	<1.1	--	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Carbon disulfide	µg/L	700	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	***0.167 J***	<0.15	<0.15	<0.15	<0.45	<0.45	<0.45	<0.45	<0.45	--	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45
Carbon Tetrachloride	µg/L	5	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.65	<0.65	<0.65	<0.65	<0.65	--	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65
Chlorobenzene	µg/L	100	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.4	<0.4	<0.4	<0.4	<0.4	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Chloroethane	µg/L	2800	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.79	<0.79	<0.79	<0.79	<0.79	--	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79
Chloromethane	µg/L	NS	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.61	<0.61	<0.61	<0.61	<0.61	--	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61
cis-1,2-Dichloroethylene	µg/L	70	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.21	<0.21	<0.21	<0.21	<0.21	--	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21
cis-1,3-Dichloropropene	µg/L	NS	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.25	<0.25	<0.25	<0.25	<0.25	--	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Dibromochloromethane	µg/L	80	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.75	<0.75	<0.75	<0.75	<0.75	--	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75
Dibromomethane	µg/L	70	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.33	<0.33	<0.33	<0.33	<0.33	--	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Dichloromethane	µg/L	5	<0.17	<0.17	<0.17	<0.17	<0.17	***0.278 J***	<0.17	<0.17	<0.17	<0.17	<1.7	<1.7	<1.7	<1.7	<1.7	--	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7
Ethylbenzene	µg/L	700	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.31	<0.31	<0.31	<0.31	<0.31	--	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31
Iodomethane	µg/L	NS	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<7	<7	<7	<7	<7	--	<7	<7	<7	<7	<7	<7	<7	<7
Styrene	µg/L	100	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.37	<0.37	<0.37	<0.37	<0.37	--	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37
Tetrachloroethylene	µg/L	5	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.48	<0.48	<0.48	<0.48	<0.48	--	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48
Toluene	µg/L	1000	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.43	<0.43	<0.43	<0.43	<0.43	--	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43
Trans-1,2-dichloroethylene	µg/L	100	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.27	<0.27	<0.27	<0.27	<0.27	--	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27
trans-1,3-Dichloropropene	µg/L	NS	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.56	<0.56	<0.56	<0.56	<0.56	--	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56
trans-1,4-Dichloro-2-butene	µg/L	1.8	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<1.1	<1.1	<1.1	<1.1	<1.1	--	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Tribromomethane	µg/L	80	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.78	<0.78	<0.78	<0.78	<0.78	--	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78
Trichloroethylene	µg/L	5	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.43	<0.43	<0.43	<0.43	<0.43	--	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43
Trichlorofluoromethane	µg/L	2000	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.38	<0.38	<0.38	<0.38	<0.38	--	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38
Trichloromethane	µg/L	80	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<1.3	<1.3	<1.3	<1.3	<1.3	--	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3
Vinyl Acetate	µg/L	NS	<0.74	<0.74	<0.74	<0.74	<0.74	<0.74	<0.74	<0.74	<0.74	<0.74	<2.5	<2.5	<2.5	<2.5	<2.5	--	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Vinyl Chloride	µg/L	2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.6	<0.6	<0.18	<0.18	<0.18	--	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18
Xylenes	µg/L	10000	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.4	<0.4	<0.4	<0.4	<0.4	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Detections at or above the RL are shown in bold italics on gray background.

Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.

NS = No standard

Black Hawk County Landfill
Appendix I Results
Monitoring Well MW-709B

Parameter Name	Units	GPS	Nov-21	May-22	Jul-22	Oct-22	Feb-23	Apr-23	Sep-23	Apr-24	Oct-24
Appendix I Inorganics											
Total Suspended Solids	mg/L	NS	***13***	***2.25***	***23.4***	***15.1***	***9.12***	***2.13***	***21.8***	***2.75***	***31.3***
Turbidity, Field	NTU	NS	0	0	***9.13***	***10.49***	***11.11***	***3.53***	***37.24***	***7.09***	***38.23***
Turbidity, Lab	NTU	NS	--	--	--	--	--	--	--	--	--
Antimony	µg/L	6	<1.1	<0.69	<0.69	<0.69	<0.69	<1	<1	<1	<1
Antimony, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	***1.58 J***	<0.75	<0.75	<0.75	<0.75	***1.15 J***	<0.53	<0.53	<0.53
Arsenic, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	***339***	***150***	***114***	***112***	***136***	***87.8***	***105***	***87.8***	***79.9***
Barium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	<0.27	<0.27	<0.27	<0.27	<0.27	<0.33	<0.33	<0.33	<0.33
Beryllium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	<0.051	<0.055	<0.055	<0.055	<0.055	***0.28***	<0.1	<0.1	<0.1
Cadmium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.2	<1.2
Chromium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	9.83	***0.577 J***	<0.19	***0.21 J***	***0.267 J***	***0.352 J***	***0.38 J***	***0.426 J***	<0.17	***0.586***
Cobalt, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--
Copper	µg/L	1300	<1.4	<1.8	<1.8	<1.8	<1.8	<1.8	***1.86 J***	<1.8	<1.8
Copper, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	***1.31***	<0.24	<0.24	<0.24	<0.24	***0.596***	***0.28 J***	<0.26	***0.345 J***
Lead, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--
Nickel	µg/L	722	***5.21***	<1.9	<1.9	***2.13 J***	<1.9	<1.9	<1.9	***2.42 J***	***2.19 J***
Nickel, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	***1.35 J***	***1.11 J***	<0.96	<0.96	<0.96	***3.56 J***	<1.4	<1.4	<1.4
Selenium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--
Silver	µg/L	100	<0.42	<0.49	<0.49	<0.49	<0.49	<0.5	<0.5	<0.5	<0.5
Silver, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	<0.26	<0.26	<0.26	<0.26	<0.26	***3.83***	<0.26	<0.57	<0.57
Thallium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--
Vanadium	µg/L	35	<1.1	***1.15 J***	***1.32 J***	<1.1	<1.1	<1.1	***1.95 J***	<1.1	***1.28 J***
Vanadium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--
Zinc	µg/L	2000	<10	<10	<10	<10	<10	<6.4	<6.4	<9.7	<9.7
Zinc, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--
Appendix I Organics											
1,1,1,2-Tetrachloroethane	µg/L	70	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38
1,1,1-Trichloroethane	µg/L	200	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19
1,1,2,2-Tetrachloroethane	µg/L	0.3	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47
1,1,2-Trichloroethane	µg/L	5	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45
1,1-Dichloroethane	µg/L	140	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22
1,1-Dichloroethylene	µg/L	7	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56
1,2,3-Trichloropropane	µg/L	0.0058	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59
1,2-Dibromo-3-chloropropane	µg/L	0.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2
1,2-Dibromoethane	µg/L	0.05	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34
1,2-Dichlorobenzene	µg/L	600	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37
1,2-Dichloroethane	µg/L	5	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39
1,2-Dichloropropane	µg/L	5	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27
1,4-Dichlorobenzene	µg/L	75	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23
2-Butanone	µg/L	4000	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1
2-Hexanone	µg/L	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2
4-Methyl-2-pentanone	µg/L	560	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1
Acetone	µg/L	6300	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1
Acrylonitrile	µg/L	0.32	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2
Benzene	µg/L	5	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22
Bromochloromethane	µg/L	90	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54
Bromodichloromethane	µg/L	80	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39
Bromomethane	µg/L	10	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Carbon disulfide	µg/L	700	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45
Carbon Tetrachloride	µg/L	5	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65
Chlorobenzene	µg/L	100	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Chloroethane	µg/L	2800	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79
Chloromethane	µg/L	NS	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61
cis-1,2-Dichloroethylene	µg/L	70	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21
cis-1,3-Dichloropropene	µg/L	NS	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Dibromochloromethane	µg/L	80	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75
Dibromomethane	µg/L	70	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Dichloromethane	µg/L	5	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7
Ethylbenzene	µg/L	700	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31
Iodomethane	µg/L	NS	<7	<7	<7	<7	<7	<7	<7	<7	<7
Styrene	µg/L	100	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37
Tetrachloroethylene	µg/L	5	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48
Toluene	µg/L	1000	<0.43	<0.43	<0.43	<0.43	***0.46 J***	<0.43	<0.43	<0.43	<0.43
Trans-1,2-dichloroethylene	µg/L	100	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27
trans-1,3-Dichloropropene	µg/L	NS	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56
trans-1,4-Dichloro-2-butene	µg/L	1.8	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Tribromomethane	µg/L	80	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78
Trichloroethylene	µg/L	5	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43
Trichlorofluoromethane	µg/L	2000	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38
Trichloromethane	µg/L	80	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3
Vinyl Acetate	µg/L	NS	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Vinyl Chloride	µg/L	2	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18
Xylenes	µg/L	10000	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	***0.462 J***	<0.4	<0.4

Detections at or above the RL are shown in bold italics on gray background.

Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.

NS = No standard

Black Hawk County Landfill
Appendix I Results
Monitoring Well MW-710B

Parameter Name	Units	GPS	Nov-21	May-22	Jul-22	Oct-22	Feb-23	Apr-23	Sep-23	May-24	Oct-24
Appendix I Inorganics											
Total Suspended Solids	mg/L	NS	***15.6***	***9.13***	***1 J***	***3.38***	***3.87***	***1.38 J***	***2.75***	<1.39	***8***
Turbidity, Field	NTU	NS	***19.14***	***13.82***	0	***1.17***	***6.04***	***0.93***	***1.76***	***4.49***	***9.28***
Turbidity, Lab	NTU	NS	--	--	--	--	--	--	--	--	--
Antimony	µg/L	6	<1.1	<0.69	<0.69	<0.69	<0.69	<1	<1	<1	<1
Antimony, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	<0.75	<0.75	<0.75	<0.75	<0.75	<0.53	<0.53	<0.53	<0.53
Arsenic, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	***233***	***87.9***	***88.1***	***95.8***	***83.2***	***75.7***	***80.5***	***64.4***	***57.5***
Barium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	<0.27	<0.27	<0.27	<0.27	<0.27	<0.33	<0.33	<0.33	<0.33
Beryllium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	<0.051	<0.055	<0.055	<0.055	<0.055	<0.1	<0.1	<0.1	<0.1
Cadmium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.2	<1.2
Chromium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	9.83	<0.19	<0.19	<0.19	<0.19	<0.19	<0.17	<0.17	<0.17	<0.17
Cobalt, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--
Copper	µg/L	1300	<1.4	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8
Copper, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	<0.21	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.26	<0.26
Lead, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--
Nickel	µg/L	722	<1.9	<1.9	***2.25 J***	<1.9	<1.9	<1.9	<1.9	<2.1	<2.1
Nickel, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	<0.96	<0.96	<0.96	<0.96	<0.96	<1.4	<1.4	<1.4	<1.4
Selenium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--
Silver	µg/L	100	<0.42	<0.49	<0.49	<0.49	<0.49	<0.5	<0.5	<0.5	<0.5
Silver, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.57	<0.57
Thallium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--
Vanadium	µg/L	35	***1.4 J***	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Vanadium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--
Zinc	µg/L	2000	<10	<10	<10	<10	<10	<6.4	***8.34 J***	<9.7	<9.7
Zinc, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--
Appendix I Organics											
1,1,1,2-Tetrachloroethane	µg/L	70	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38
1,1,1-Trichloroethane	µg/L	200	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19
1,1,2,2-Tetrachloroethane	µg/L	0.3	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47
1,1,2-Trichloroethane	µg/L	5	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45
1,1-Dichloroethane	µg/L	140	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22
1,1-Dichloroethylene	µg/L	7	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56
1,2,3-Trichloropropane	µg/L	0.0058	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59
1,2-Dibromo-3-chloropropane	µg/L	0.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2
1,2-Dibromoethane	µg/L	0.05	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34
1,2-Dichlorobenzene	µg/L	600	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37
1,2-Dichloroethane	µg/L	5	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39
1,2-Dichloropropane	µg/L	5	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27
1,4-Dichlorobenzene	µg/L	75	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23
2-Butanone	µg/L	4000	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1
2-Hexanone	µg/L	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2
4-Methyl-2-pentanone	µg/L	560	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1
Acetone	µg/L	6300	<3.1	***8 J***	***4.02 J***	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1
Acrylonitrile	µg/L	0.32	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2
Benzene	µg/L	5	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22
Bromochloromethane	µg/L	90	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54
Bromodichloromethane	µg/L	80	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39
Bromomethane	µg/L	10	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Carbon disulfide	µg/L	700	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45
Carbon Tetrachloride	µg/L	5	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65
Chlorobenzene	µg/L	100	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Chloroethane	µg/L	2800	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79
Chloromethane	µg/L	NS	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61
cis-1,2-Dichloroethylene	µg/L	70	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21
cis-1,3-Dichloropropene	µg/L	NS	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Dibromochloromethane	µg/L	80	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75
Dibromomethane	µg/L	70	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Dichloromethane	µg/L	5	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7
Ethylbenzene	µg/L	700	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31
Iodomethane	µg/L	NS	<7	<7	<7	<7	<7	<7	<7	<7	<7
Styrene	µg/L	100	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37
Tetrachloroethylene	µg/L	5	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48
Toluene	µg/L	1000	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43
Trans-1,2-dichloroethylene	µg/L	100	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27
trans-1,3-Dichloropropene	µg/L	NS	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56
trans-1,4-Dichloro-2-butene	µg/L	1.8	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Tribromomethane	µg/L	80	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78
Trichloroethylene	µg/L	5	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43
Trichlorofluoromethane	µg/L	2000	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38
Trichloromethane	µg/L	80	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3
Vinyl Acetate	µg/L	NS	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Vinyl Chloride	µg/L	2	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18
Xylenes	µg/L	10000	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Detections at or above the RL are shown in bold italics on gray background.

Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.

NS = No standard

Black Hawk County Landfill
Appendix I Results
Monitoring Well MW-711B

Parameter Name	Units	GPS	Nov-21	May-22	Aug-22	Oct-22	Feb-23	Apr-23	Aug-23	Sep-23	Apr-24	Oct-24
Appendix I Inorganics												
Total Suspended Solids	mg/L	NS	***10.4***	***2.5***	***1.5 J***	***13.6***	***2***	***1.88***	***2.33 J***	***2***	***7.88***	***14***
Turbidity, Field	NTU	NS	***28.68***	***1.48***	***3.9***	***23.73***	***2.41***	***3.76***	***9.31***	***2.38***	***26.14***	***23.97***
Turbidity, Lab	NTU	NS	--	--	--	--	--	--	--	--	--	--
Antimony	µg/L	6	<1.1	<0.69	<0.69	<0.69	<0.69	<1	--	<1	<1	<1
Antimony, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	<0.75	<0.75	<0.75	<0.75	<0.75	***0.68 J***	--	***0.724 J***	***0.878 J***	***1.8 J***
Arsenic, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	***136***	***79.5***	***61.4***	***57.1***	***57.7***	***54.8***	--	***49.9***	***43.5***	***40.3***
Barium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	<0.27	<0.27	<0.27	<0.27	<0.27	<0.33	--	<0.33	<0.33	<0.33
Beryllium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	***0.126***	***0.061 J***	<0.055	<0.055	***0.06 J***	***0.173 J***	--	<0.1	***0.116 J***	<0.1
Cadmium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	--	<1.1	<1.2	<1.2
Chromium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	9.83	***2.09***	***4.92***	***4.89***	***3.42***	***2.81***	***3.51***	--	***4.91***	***4.43***	***3.77***
Cobalt, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	1300	<1.4	<1.8	<1.8	<1.8	<1.8	<1.8	--	<1.8	<1.8	<1.8
Copper, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	<0.21	<0.24	<0.24	<0.24	<0.24	<0.24	--	***0.265 J***	<0.26	<0.26
Lead, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--
Nickel	µg/L	722	***7.55***	***12.3***	***10.6***	***9.02***	***11.8***	***15***	***16.3***	***14***	***19.5***	***14.7***
Nickel, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	<0.96	<0.96	<0.96	<0.96	<0.96	<1.4	--	<1.4	<1.4	<1.4
Selenium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--
Silver	µg/L	100	<0.42	<0.49	<0.49	<0.49	<0.49	<0.5	--	<0.5	<0.5	<0.5
Silver, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	<0.26	<0.26	<0.26	<0.26	<0.26	***0.477 J***	--	<0.26	<0.57	<0.57
Thallium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--
Vanadium	µg/L	35	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	--	<1.1	<1.1	<1.1
Vanadium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	2000	<10	<10	<10	<10	<10	<6.4	--	<6.4	<9.7	<9.7
Zinc, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--
Appendix I Organics												
1,1,1,2-Tetrachloroethane	µg/L	70	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	--	<0.38	<0.38	<0.38
1,1,1-Trichloroethane	µg/L	200	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	--	<0.19	<0.19	<0.19
1,1,2,2-Tetrachloroethane	µg/L	0.3	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	--	<0.47	<0.47	<0.47
1,1,2-Trichloroethane	µg/L	5	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	--	<0.45	<0.45	<0.45
1,1-Dichloroethane	µg/L	140	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--	<0.22	<0.22	<0.22
1,1-Dichloroethylene	µg/L	7	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	--	<0.56	<0.56	<0.56
1,2,3-Trichloropropane	µg/L	0.0058	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	--	<0.59	<0.59	<0.59
1,2-Dibromo-3-chloropropane	µg/L	0.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	--	<1.2	<1.2	<1.2
1,2-Dibromoethane	µg/L	0.05	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	--	<0.34	<0.34	<0.34
1,2-Dichlorobenzene	µg/L	600	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	--	<0.37	<0.37	<0.37
1,2-Dichloroethane	µg/L	5	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	--	<0.39	<0.39	<0.39
1,2-Dichloropropane	µg/L	5	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	--	<0.27	<0.27	<0.27
1,4-Dichlorobenzene	µg/L	75	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	--	<0.23	<0.23	<0.23
2-Butanone	µg/L	4000	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	--	<2.1	<2.1	<2.1
2-Hexanone	µg/L	NS	<2	<2	<2	<2	<2	<2	--	<2	<2	<2
4-Methyl-2-pentanone	µg/L	560	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	--	<2.1	<2.1	<2.1
Acetone	µg/L	6300	<3.1	***11.5***	<3.1	<3.1	<3.1	<3.1	--	<3.1	<3.1	<3.1
Acrylonitrile	µg/L	0.32	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	--	<2.2	<2.2	<2.2
Benzene	µg/L	5	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--	<0.22	<0.22	<0.22
Bromochloromethane	µg/L	90	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	--	<0.54	<0.54	<0.54
Bromodichloromethane	µg/L	80	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	--	<0.39	<0.39	<0.39
Bromomethane	µg/L	10	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	--	<1.1	<1.1	<1.1
Carbon disulfide	µg/L	700	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	--	<0.45	<0.45	<0.45
Carbon Tetrachloride	µg/L	5	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	--	<0.65	<0.65	<0.65
Chlorobenzene	µg/L	100	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	--	<0.4	<0.4	<0.4
Chloroethane	µg/L	2800	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	--	<0.79	<0.79	<0.79
Chloromethane	µg/L	NS	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	--	<0.61	<0.61	<0.61
cis-1,2-Dichloroethylene	µg/L	70	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	--	<0.21	<0.21	<0.21
cis-1,3-Dichloropropene	µg/L	NS	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	--	<0.25	<0.25	<0.25
Dibromochloromethane	µg/L	80	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	--	<0.75	<0.75	<0.75
Dibromomethane	µg/L	70	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	--	<0.33	<0.33	<0.33
Dichloromethane	µg/L	5	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	--	<1.7	<1.7	<1.7
Ethylbenzene	µg/L	700	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	--	<0.31	<0.31	<0.31
Iodomethane	µg/L	NS	<7	<7	<7	<7	<7	<7	--	<7	<7	<7
Styrene	µg/L	100	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	--	<0.37	<0.37	<0.37
Tetrachloroethylene	µg/L	5	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	--	<0.48	<0.48	<0.48
Toluene	µg/L	1000	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	--	<0.43	<0.43	<0.43
Trans-1,2-dichloroethylene	µg/L	100	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	--	<0.27	<0.27	<0.27
trans-1,3-Dichloropropene	µg/L	NS	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	--	<0.56	<0.56	<0.56
trans-1,4-Dichloro-2-butene	µg/L	1.8	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	--	<1.1	<1.1	<1.1
Tribromomethane	µg/L	80	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	--	<0.78	<0.78	<0.78
Trichloroethylene	µg/L	5	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	--	<0.43	<0.43	<0.43
Trichlorofluoromethane	µg/L	2000	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	--	<0.38	<0.38	<0.38
Trichloromethane	µg/L	80	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	--	<1.3	<1.3	<1.3
Vinyl Acetate	µg/L	NS	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	--	<2.5	<2.5	<2.5
Vinyl Chloride	µg/L	2	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	--	<0.18	<0.18	<0.18
Xylenes	µg/L	10000	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	--	<0.4	<0.4	<0.4

Detections at or above the RL are shown in bold italics on gray background.

Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.

NS = No standard

Black Hawk County Landfill
Appendix I Results
Monitoring Well MW-712B

Parameter Name	Units	GPS	Nov-21	May-22	Aug-22	Oct-22	Feb-23	Apr-23	Aug-23	Sep-23	Apr-24	Jul-24	Oct-24	Jan-25
Appendix I Inorganics														
Total Suspended Solids	mg/L	NS	***2.63***	***2.38***	***146***	***17.6***	***7.38***	***5.88***	***4.25***	***1.88***	<1.39	<1.39	***4.5***	<3.7
Turbidity, Field	NTU	NS	***0.41***	0	***127.68***	***10.02***	***5.34***	***3.1***	***10.09***	***2.1***	***2.63***	***1.74***	***5.79***	***0.75***
Turbidity, Lab	NTU	NS	--	--	--	--	--	--	--	--	--	--	--	--
Antimony	µg/L	6	<1.1	<0.69	<2.76	<0.69	<0.69	<1	--	<1	<1	--	<1	--
Antimony, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	<0.75	<0.75	***4.42***	<0.75	***1.1 J***	***1.35 J***	--	***0.654 J***	***0.537 J***	--	***0.55 J***	--
Arsenic, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	***130***	***92.9***	***113***	***18.3***	***84.9***	***63.8***	--	***67.8***	***63***	--	***68.1***	--
Barium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	<0.27	<0.27	<1.08	<0.27	<0.27	<0.33	--	<0.33	<0.33	--	<0.33	--
Beryllium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	***0.212***	***0.264***	***0.228***	<0.055	***0.08 J***	***0.355***	***0.496***	***0.237***	***0.131 J***	--	***0.174 J***	--
Cadmium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	<1.1	<1.1	<1.1	***1.16 J***	<1.1	<1.1	--	<1.1	<1.2	--	<1.2	--
Chromium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	9.83	***2.77***	***2.79***	***9.82***	<0.19	***8.6***	***8.15***	***9.29***	***7.3***	***6.02***	***4.51***	***5.59***	***4.34***
Cobalt, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	1300	***1.41 J***	***1.87 J***	***14.8***	<1.8	<1.8	<1.8	--	<1.8	<1.8	--	<1.8	--
Copper, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	<0.21	<0.24	***1.71***	<0.24	***0.304 J***	***0.555***	--	<0.24	<0.26	--	<0.26	--
Lead, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	µg/L	722	***9.58***	***8.33***	***11.5***	<1.9	***11.3***	***11.5***	--	***8.46***	***7.24***	--	***8.56***	--
Nickel, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	<0.96	<0.96	***1.3 J***	***135***	<0.96	***2.54 J***	--	<1.4	<1.4	--	<1.4	--
Selenium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--
Silver	µg/L	100	<0.42	<0.49	<0.49	<0.49	<0.49	<0.5	--	<0.5	<0.5	--	<0.5	--
Silver, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	<0.26	<0.26	<0.26	<0.26	<0.26	***2.79***	<0.26	<0.26	<0.57	--	<0.57	--
Thallium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium	µg/L	35	***1.25 J***	<1.1	***1.76 J***	<1.1	<1.1	<1.1	--	***1.64 J***	<1.1	--	<1.1	--
Vanadium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	2000	<10	<10	<10	<10	<10	<6.4	--	<6.4	<9.7	--	<9.7	--
Zinc, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--
Appendix I Organics														
1,1,1,2-Tetrachloroethane	µg/L	70	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	--	<0.38	<0.38	--	<0.38	--
1,1,1-Trichloroethane	µg/L	200	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	--	<0.19	<0.19	--	<0.19	--
1,1,2,2-Tetrachloroethane	µg/L	0.3	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	--	<0.47	<0.47	--	<0.47	--
1,1,2-Trichloroethane	µg/L	5	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	--	<0.45	<0.45	--	<0.45	--
1,1-Dichloroethane	µg/L	140	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--	<0.22	<0.22	--	<0.22	--
1,1-Dichloroethylene	µg/L	7	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	--	<0.56	<0.56	--	<0.56	--
1,2,3-Trichloropropane	µg/L	0.0058	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	--	<0.59	<0.59	--	<0.59	--
1,2-Dibromo-3-chloropropane	µg/L	0.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	--	<1.2	<1.2	--	<1.2	--
1,2-Dibromoethane	µg/L	0.05	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	--	<0.34	<0.34	--	<0.34	--
1,2-Dichlorobenzene	µg/L	600	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	--	<0.37	<0.37	--	<0.37	--
1,2-Dichloroethane	µg/L	5	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	--	<0.39	<0.39	--	<0.39	--
1,2-Dichloropropane	µg/L	5	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	--	<0.27	<0.27	--	<0.27	--
1,4-Dichlorobenzene	µg/L	75	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	--	<0.23	<0.23	--	<0.23	--
2-Butanone	µg/L	4000	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	--	<2.1	<2.1	--	<2.1	--
2-Hexanone	µg/L	NS	<2	<2	<2	<2	<2	<2	--	<2	<2	--	<2	--
4-Methyl-2-pentanone	µg/L	560	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	--	<2.1	<2.1	--	<2.1	--
Acetone	µg/L	6300	<3.1	***4.44 J***	***4.85 J***	***4.35 J***	<3.1	<3.1	--	<3.1	<3.1	--	<3.1	--
Acrylonitrile	µg/L	0.32	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	--	<2.2	<2.2	--	<2.2	--
Benzene	µg/L	5	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--	<0.22	<0.22	--	<0.22	--
Bromochloromethane	µg/L	90	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	--	<0.54	<0.54	--	<0.54	--
Bromodichloromethane	µg/L	80	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	--	<0.39	<0.39	--	<0.39	--
Bromomethane	µg/L	10	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	--	<1.1	<1.1	--	<1.1	--
Carbon disulfide	µg/L	700	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	--	<0.45	<0.45	--	<0.45	--
Carbon Tetrachloride	µg/L	5	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	--	<0.65	<0.65	--	<0.65	--
Chlorobenzene	µg/L	100	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	--	<0.4	<0.4	--	<0.4	--
Chloroethane	µg/L	2800	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	--	<0.79	<0.79	--	<0.79	--
Chloromethane	µg/L	NS	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	--	<0.61	<0.61	--	<0.61	--
cis-1,2-Dichloroethylene	µg/L	70	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	--	<0.21	<0.21	--	<0.21	--
cis-1,3-Dichloropropene	µg/L	NS	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	--	<0.25	<0.25	--	<0.25	--
Dibromochloromethane	µg/L	80	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	--	<0.75	<0.75	--	<0.75	--
Dibromomethane	µg/L	70	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	--	<0.33	<0.33	--	<0.33	--
Dichloromethane	µg/L	5	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	--	<1.7	<1.7	--	<1.7	--
Ethylbenzene	µg/L	700	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	--	<0.31	<0.31	--	<0.31	--
Iodomethane	µg/L	NS	<7	<7	<7	<7	<7	<7	--	<7	<7	--	<7	--
Styrene	µg/L	100	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	--	<0.37	<0.37	--	<0.37	--
Tetrachloroethylene	µg/L	5	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	--	<0.48	<0.48	--	<0.48	--
Toluene	µg/L	1000	<0.43	<0.43	<0.43	***0.846 J***	<0.43	<0.43	--	<0.43	<0.43	--	<0.43	--
Trans-1,2-dichloroethylene	µg/L	100	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	--	<0.27	<0.27	--	<0.27	--
trans-1,3-Dichloropropene	µg/L	NS	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	--	<0.56	<0.56	--	<0.56	--
trans-1,4-Dichloro-2-butene	µg/L	1.8	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	--	<1.1	<1.1	--	<1.1	--
Tribromomethane	µg/L	80	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	--	<0.78	<0.78	--	<0.78	--
Trichloroethylene	µg/L	5	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	--	<0.43	<0.43	--	<0.43	--
Trichlorofluoromethane	µg/L	2000	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	--	<0.38	<0.38	--	<0.38	--
Trichloromethane	µg/L	80	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	--	<1.3	<1.3	--	<1.3	--
Vinyl Acetate	µg/L	NS	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	--	<2.5	<2.5	--	<2.5	--
Vinyl Chloride	µg/L	2	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	--	<0.18	<0.18	--	<0.18	--
Xylenes	µg/L	10000	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	--	<0.4	<0.4	--	<0.4	--

Detections at or above the RL are shown in bold italics on gray background.

Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.

NS = No standard

Black Hawk County Landfill
Appendix I Results
Area E Underdrain GUE-2

Parameter Name	Units	GPS	Oct-13	Jan-14	Mar-14	Sep-14	Mar-15	Aug-15	Mar-16	Sep-16	Mar-17	Sep-17	Mar-18	Sep-18	Apr-19	Sep-19	Apr-20	Oct-20	Apr-21	Nov-21	May-22	Nov-22	Mar-23	Sep-23	May-24
Appendix I Inorganics																									
Total Suspended Solids	mg/L	NS	--	--	--	***16.6***	***12.5***	***21.3***	***29.9***	***32.6***	***27***	***37.6***	***27.6***	***39.3***	***48.6***	***22.5***	***27.5***	***17***	***16.3***	***13***	***30***	***44***	***4.13***	***22***	***31***
Turbidity, Field	NTU	NS	--	--	--	***12.87***	***5.12***	***3.216***	--	***18.94***	***23.18***	***19.37***	***18.76***	***3.99***	***6.89***	***52.11***	***16.09***	***8.62***	***24.63***	***16.21***	***11.39***	***8.43***	***18.73***	***8.74***	***11.73***
Turbidity, Lab	NTU	NS	--	--	--	***448***	***29.5***	***74***	***8.3***	***48.6***	***187***	***36***	***77***	***184***	***247***	***95.5***	***96***	--	--	--	--	--	--	--	--
Antimony	µg/L	6	<0.4	<0.4	<0.4	<0.161	<0.161	<0.161	<0.237	<0.237	<0.185	***0.23 J***	***1.21***	<0.42	<0.53	<0.53	<0.58	<0.51	<1.1	<1.1	<0.69	<0.69	<0.69	<1	<1
Antimony, Dissolved	µg/L	NS	<0.4	<0.4	<0.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	***1.79 J***	***1.83 J***	***2.04 J***	***4.06***	***1.99 J***	***3.47***	***3.02***	***3.02***	***2.49***	***2.56***	***2.69***	***3.84***	***4.91***	***3.14***	***3.15***	***2.62***	***2.2***	***1.99 J***	***2.6***	***3.91***	***2.68***	***2.33***	***3.04***
Arsenic, Dissolved	µg/L	NS	***1.28 J***	***2.1 J***	***2.06 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	***128***	***117***	***140***	***166***	***133***	***217***	***156***	***228***	***212***	***244***	***227***	***279***	***341***	***355***	***307***	***326***	***309***	***359***	***313***	***178***	***408***	***733***	***571***
Barium, Dissolved	µg/L	NS	***120***	***121***	***137***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	<0.08	<0.08	<0.08	<0.039	<0.039	<0.039	<0.221	<0.221	<0.125	<0.125	<0.125	<0.19	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.33	<0.33
Beryllium, Dissolved	µg/L	NS	<0.08	<0.08	<0.08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	<0.1	<0.1	<0.1	<0.112	<0.112	<0.112	<0.0351	<0.0351	<0.0441	<0.0441	<0.0441	<0.06	<0.077	<0.039	<0.039	<0.049	<0.051	***0.055 J***	<0.055	<0.055	<0.055	<0.1	<0.1
Cadmium, Dissolved	µg/L	NS	<0.1	<0.1	<0.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	***1.04 J***	***0.756 J***	***0.724 J***	<1.24	<1.24	<1.24	***0.672 J***	***0.948 J***	***0.829 J***	***1.08 J***	***1.61 J***	***1.21 J***	***1.56 J***	***1.79 J***	***1.23 J***	***1.92 J***	***1.82 J***	***2.32 J***	***1.56 J***	<1.1	***2.04 J***	***2.78 J***	***3.02 J***
Chromium, Dissolved	µg/L	NS	***0.832 J***	***0.759 J***	***0.811 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	9.83	***2.87***	***2.45***	***2.43***	***2.5***	***2.15***	***5.6***	***2.56***	***2.26***	***2.08***	***1.79***	***1.95***	***1.86***	***2.42***	***2.38***	***1.73***	***3.64***	***1.84***	***2.04***	***1.92***	***1.1***	***1.83***	***1.92***	***2.84***
Cobalt, Dissolved	µg/L	NS	***2.78***	***2.45***	***2.59***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	1300	<0.56	<0.56	<0.56	<0.485	<0.485	<0.485	<1.22	<1.22	<2.19	<2.19	<2.19	<1.6	<2	<2	<3.2	<1.5	<1.4	<1.4	<1.8	<1.8	<1.8	<1.8	<1.8
Copper, Dissolved	µg/L	NS	***1.63 J***	<0.56	<0.56	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	<0.18	<0.18	<0.18	<0.0967	<0.0967	<0.0967	<0.211	<0.211	<0.324	<0.324	<0.324	<0.25	<0.27	<0.27	<0.27	<0.11	<0.21	<0.21	<0.24	<0.24	<0.24	<0.24	<0.26
Lead, Dissolved	µg/L	NS	<0.18	<0.18	<0.18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	µg/L	722	***9.21***	***9.25***	***9.59***	***8.5***	***8.3***	***16.2***	***8.86***	***11.9***	***12.7***	***13.1***	***16***	***9.85 J***	***21.7***	***19.8***	***15***	***23.1***	***21.1***	***26.7***	***19.6***	***12.6***	***23.1***	***32.8***	***29.7***
Nickel, Dissolved	µg/L	NS	***9.77***	***9.8***	***11.5***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	***1.03 J***	<0.7	<0.7	<3.34	<3.34	<3.34	<0.63	<0.63	<0.928	<0.928	<0.928	<0.9	<1	<1	<1	<1	<0.96	<0.96	<0.96	<0.96	<0.96	<1.4	<1.4
Selenium, Dissolved	µg/L	NS	<0.7	<0.7	<0.7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	µg/L	100	<0.033	<0.033	<0.033	<0.042	<0.042	<0.042	<0.153	<0.153	<0.14	<0.14	<0.14	<0.3	<0.37	<0.37	<0.37	<0.37	<0.42	<0.42	<0.49	<0.49	<0.49	<0.5	<0.5
Silver, Dissolved	µg/L	NS	<0.033	<0.033	<0.033	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	<0.05	<0.05	<0.05	<0.0325	***0.037 J***	<0.0325	<0.0255	<0.0255	<0.0644	<0.0644	<0.0644	<0.17	<0.27	<0.27	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.57
Thallium, Dissolved	µg/L	NS	<0.05	<0.05	<0.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium	µg/L	35	<0.5	<0.5	***0.758 J***	***0.464 J***	<0.449	<0.449	***0.323 J***	***0.376 J***	<0.84	<0.84	<0.84	***0.592 J***	<0.82	***0.966 J***	***0.83 J***	<0.85	<1.1	<1.1	<1.1	<1.1	<1.1	***1.12 J***	***1.19 J***
Vanadium, Dissolved	µg/L	NS	<0.5	<0.5	***0.596 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	2000	***6.36 J***	<2	***2.43 J***	<6.95	<6.95	***13.5***	<5.21	<5.21	<11.5	<11.5	***23.8***	<10	<10	***13.1 J***	<10	<10	<10	<10	<10	<10	<10	<6.4	<9.7
Zinc, Dissolved	µg/L	NS	***5.34 J***	***2.54 J***	***2.79 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Appendix I Organics																									
1,1,1,2-Tetrachloroethane	µg/L	70	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38
1,1,1-Trichloroethane	µg/L	200	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19
1,1,2,2-Tetrachloroethane	µg/L	0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47
1,1,2-Trichloroethane	µg/L	5	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45
1,1-Dichloroethane	µg/L	140	<0.21	<0.21	***0.445 J***	***1.12***	***1.19***	***1.18***	***0.842 J***	<0.21	***0.772 J***	***0.661 J***	***0.415 J***	***0.72 J***	***0.689 J***	***0.636 J***	***0.405 J***	***0.578 J***	***0.411 J***	<0.22	***0.525 J***	***0.601 J***	***0.413 J***	<0.22	***0.474 J***
1,1-Dichloroethylene	µg/L	7	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56
1,2,3-Trichloropropane	µg/L	0.0058	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59
1,2-Dibromo-3-chloropropane	µg/L	0.2	<0.12	<0.12	<0.12	<0.12	<0.12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2
1,2-Dibromoethane	µg/L	0.05	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34
1,2-Dichlorobenzene	µg/L	600	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37
1,2-Dichloroethane	µg/L	5	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39
1,2-Dichloropropane	µg/L	5	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27
1,4-Dichlorobenzene	µg/L	75	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	***0.477 J***	***0.415 J***	***0.621 J***	<0.23	***0.381 J***	***0.373 J***	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	***0.412 J***	***0.378 J***
2-Butanone	µg/L	4000	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	***0.78 J***	<0.47	<1.04	<1.04	***2.43 J***	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1
2-Hexanone	µg/L	NS	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
4-Methyl-2-pentanone	µg/L	560	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1
Acetone	µg/L	6300	***2.12 J***	<1.79	***2.11 J***	<1.79	***7.81 J***	<1.79	<1.79	<1.79	***4.81 J***	***6.01 J***	***7.35 J***	***5.84 J***	<3.1	***13.1***	<3.1	<3.1	***4.24 J***	<3.1	***4.74 J***	<3.1	<3.1	***4.13 J***	***6.25 J***
Acrylonitrile	µg/L	0.32	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2
Benzene	µg/L	5	<0.11	***0.87***	***0.568***	***2.58***	***1.47***	***2.53***	***1.29***	<0.11	***1.17***	***0.773***	***0.458 J***	***0.948***	***1.38***	***1.7***	***0.928***	***1.5***	***0.536***	***0.267 J***	***1.24***	***1.27***	***1.2***	***1.19***	***1.27***
Bromochloromethane	µg/L	90	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54
Bromodichloromethane	µg/L	80	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39
Bromomethane	µg/L	10	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Carbon disulfide	µg/L	700	<0.15	<0.15	<0.15	<0.15	<0.15	***0.174 J***	<0.15	<0.15	<0.15	<0.15	<0.15	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45
Carbon Tetrachloride	µg/L	5	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65
Chlorobenzene	µg/L	100	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Chloroethane	µg/L	2800	<0.15	<0.15	<0.15	***0.631 J***	***1.26 J***	***2.97 J***	***0.939 J***	<0.15	***1.18 J***	***1.35 J***	<0.15	<0.79	<0.79	<0.79	***0.937 J***	<0.79	***0.814 J***	<0.79	***0.844 J***	<0.79	<0.79	<0.79	<0.79
Chloromethane	µg/L	NS	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	***0.45 J***	<0.31	<0.31	<0.31	<0.31	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61
cis-1,2-Dichloroethylene	µg/L	70	***0.791 J***	***3.56***	***2.29***	***7.36***	***5.76***	***7.05***	***3.56***	<0.13	***3.27***	***1.79***	***1.03***	***2.22***	***3.72***	***4.27***	***3.1***	***4.05***	***1.02***	***0.528 J***	***3.42***	***3.56***	***2.93***	***2.63***	***2.92***
cis-1,3-Dichloropropene	µg/L	NS	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Dibromochloromethane	µg/L	80	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75
Dibromomethane	µg/L	70	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Dichloromethane	µg/L	5	<0.17	***0.556 J***	***0.428 J***	<0.17	***0.392 J***	<0.17	***0.346 J***	***0.753 J***	***0.84 J***	<0.17	***1.04 J***	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7
Ethylbenzene	µg/L	700	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31
Iodomethane	µg/L	NS	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<7	***7.28 J***	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7
Styrene	µg/L	100	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37
Tetrachloroethylene	µg/L	5	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48
Toluene	µg/L	1000	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43
Trans-1,2-dichloroethylene	µg/L	100	<0.21	<0.21	<0.21	***0.34 J***	<0.21	***0.804 J***	***0.506 J***	<0.21	***0.405 J***	<0.21	***0.213 J***	<0.27	***0.461 J***	***0.413 J***	***0.392 J***	***0.451 J***	<0.27	<0.27	***0.293 J***	***0.347 J***	<0.27	<0.27	***0.278 J***
trans-1,3-Dichloropropene	µg/L	NS	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56
trans-1,4-Dichloro-2-butene	µg/L	1.8	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Tribromomethane	µg/L	80	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78
Trichloroethylene	µg/L	5	<0.19	***0.672 J***	***0.395 J***	***1.05***	***1.21***	***1.35***	***0.685 J***	<0.19	***0.732 J***	***0.514 J***	***0.348 J***	<0.43	***0.561 J***	***0.939 J***	***0.731 J***	***0.922 J***	<0.43	<0.43	***0.762 J***	***0.553 J***	***0.682 J***	***0.527 J***	***0.596 J***
Trichlorofluoromethane	µg/L	2000	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38
Trichloromethane	µg/L	80	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3
Vinyl Acetate	µg/L	NS	<0.74	<0.74	<0.74	<0.74	<0.74	<0.74	<0.74	<0.74	<0.74	<0.74	<0.74	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Vinyl Chloride	µg/L	2	<0.1	***0.145 J***	<0.1	***1.22***	***0.59 J***	***1.24***	***0.598 J***	<0.1	***0.287 J***	***0.19 J***	<0.1	<0.6	<0.6	***0.448 J***	<0.18	<0.18	<0.18	<0.18	<0.18	***0.38 J***	***0.499 J***	***0.459 J***	***0.552 J***
Xylenes	µg/L	10000	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Detections at or above the RL are shown in bold italics on gray background.

Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.

NS = No standard

Black Hawk County Landfill
Appendix I Results
Cell W1 Underdrain GUW1-1

Parameter Name	Units	GPS	Mar-10	Jun-10	Jul-10	Sep-10	Dec-10	Feb-11	May-11	Aug-11	Nov-11	May-12	Dec-12	Apr-13	Oct-13	Mar-14	Oct-14	Mar-15	Aug-15	Mar-16	Sep-16	Mar-17	Sep-17	Mar-18	Sep-18	Apr-19	Jun-19	Sep-19	Apr-20	Sep-20	Apr-21	Nov-21	May-22	Nov-22	Apr-23	Sep-23	May-24
Appendix I Inorganics																																				
Total Suspended Solids	mg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Dry	Dry	***2.63***	***8.63***	***12***	***14.8***	***8***	***5.13***	***4.88***	Obstructed,	--	***55.5***	***16.7***	***149***	***103***	***26.3***	***44.3***	***23.5***	Unable to	Unable to	Unable to
Turbidity, Field	NTU	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	***1.38***	--	***11.19***	***13.87***	***9.371***	***7.11***	***2.876***	Unable to	***27.19***	***58.29***	***10.81***	***47.62***	***63.42***	***18.73***	***37.19***	***14.62***	sample	sample	sample
Turbidity, Lab	NTU	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	***5.1***	***0.9 J***	***3.6***	***25.7***	***8.7***	***19.4***	***22.4***	sample	--	***64.7***	***16***	--	--	--	--	--	--	--	--
Antimony	µg/L	6	<6	<6	<6	<6	<6	<6	<6	<6	<2.73	***4.74 J***	<0.584	<0.271	<0.4	<0.4	--	--	<0.161	<0.237	<0.237	<0.185	<0.185	<0.42	<0.42	--	<0.53	<0.53	<0.58	<0.51	<1.1	<1.1	<0.69	<0.69	--	--	--
Antimony, Dissolved	µg/L	NS	<6	<6	<6	<6	<6	<6	<6	<6	<2.73	***3.63 J***	<0.584	<0.271	<0.4	<0.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	<3	<2	***2.4***	<1	<1	***1.4***	<2	<1	<0.6	<0.185	<0.37	<2.72	***0.835 J***	<0.33	--	--	<0.945	***0.708 J***	<0.672	***1.03 J***	***1.88 J***	***1.1 J***	***1.58 J***	--	***3.09***	***7.71***	***2.15***	***9.02***	***11.4***	***6.04***	***6.37***	***2.59***	--	--	--
Arsenic, Dissolved	µg/L	NS	<2	<2	***1.4***	<1	<1	<1	<4	<2	<0.47	<0.185	<0.185	<2.72	***0.38 J***	<0.33	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	***115***	***82.9***	***101***	***130***	***122***	***112***	***128***	***113***	***84.6***	***99.3***	***94.1***	***80.4***	***92.3***	***70.4***	--	--	***111***	***105***	***97.7***	***111***	***97.9***	***106***	***102***	--	***88***	***83.8***	***89.5***	***90***	***101***	***85.5***	***91.5***	***90.3***	--	--	--
Barium, Dissolved	µg/L	NS	***111***	***79.7***	***99.6***	***122***	***114***	***82.6***	***96.6***	***103***	***92***	***101***	***96.3***	***76.2***	***88.3***	***69***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	<1	<1	<1	<1	<1	<1	<1	<1	<0.051	<0.169	<0.169	<0.348	<0.08	<0.08	--	--	<0.039	<0.221	<0.221	<0.125	<0.125	<0.19	<0.19	--	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	--	--	--
Beryllium, Dissolved	µg/L	NS	<1	<1	<1	<1	<1	<1	<1	<1	***0.104 J***	<0.169	<0.169	<0.348	<0.08	<0.08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.124	<0.195	<0.195	<0.53	<0.1	<0.1	--	--	<0.112	<0.0351	<0.0351	<0.0441	<0.0441	<0.06	<0.06	--	<0.077	<0.039	<0.039	<0.049	<0.051	<0.051	<0.055	<0.055	--	--	--
Cadmium, Dissolved	µg/L	NS	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.124	<0.195	<0.195	<0.53	<0.1	<0.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	<20	<20	<20	<20	<20	<20	<20	<20	<1.81	<1.81	<1.81	<2.09	***0.769 J***	<0.5	--	--	<1.24	<0.355	<0.355	<0.729	<0.729	<0.76	<0.76	--	<0.98	***3.64 J***	***1.94 J***	***12.5***	***9.02***	***2.42 J***	***18.7***	***9.62***	--	--	--
Chromium, Dissolved	µg/L	NS	<20	<20	<20	<20	<20	<20	<20	<20	<1.81	<1.81	<1.81	<2.09	<0.5	<0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	9.83	<20	<20	<20	<20	<20	<20	<20	<20	<1.55	<1.55	<1.55	***0.736 J***	***1.24***	***0.854 J***	--	--	***1.56***	***1.36***	***1.29***	***1.67***	***1.8***	***1.9***	***1.66***	--	***1.79***	***2.41***	***1.47***	***1.99***	***1.72***	***2.03***	***1.47***	***1.66***	--	--	--
Cobalt, Dissolved	µg/L	NS	<20	<20	<20	<20	<20	<20	<20	<20	<1.55	<1.55	<1.55	***0.54 J***	***1.2***	***0.838 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	1300	<20	<20	<20	<20	<20	<20	***24.3***	<20	***9.04 J***	***3.99 J***	<1.51	<0.85	***0.942 J***	***0.612 J***	--	--	<0.485	<1.22	<1.22	<2.19	<2.19	<1.6	<1.6	--	<2	***2.39 J***	<3.2	***5.71***	***6.3***	<1.4	***4.47 J***	***3.56 J***	--	--	--
Copper, Dissolved	µg/L	NS	<20	<20	<20	<20	<20	<20	***23.7***	<20	***12 J***	<1.51	***1.89 J***	<0.85	***1.24 J***	***0.57 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	<4	<4	<4	<4	<4	<4	<4	<4	<1	<0.821	<0.821	<1.04	***0.263 J***	<0.18	--	--	<0.0967	<0.211	<0.211	<0.324	<0.324	<0.25	<0.25	--	<0.27	***0.525***	<0.27	***0.416 J***	***0.407 J***	<0.21	***0.436 J***	<0.24	--	--	--
Lead, Dissolved	µg/L	NS	<4	<4	<4	<4	<4	<4	<4	<4	<1	<0.821	<0.821	<1.04	<0.18	<0.18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	µg/L	722	<50	<50	<50	<50	<50	<50	<50	<50	<2.58	***3.88 J***	<2.58	***7.06***	***4.47***	***4.66***	--	--	***2.38 J***	***4.69 J***	***3.65 J***	***5.48***	***4.6 J***	***5.14***	<3	--	***6.66***	***7.59***	***4.3 J***	***10.2***	***6.99***	***5.87***	***11***	***38.3***	--	--	--
Nickel, Dissolved	µg/L	NS	<50	<50	<50	<50	<50	<50	<50	<50	***7.19 J***	***5.28 J***	<2.58	***7.65***	***5.38***	***5.46***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	<5	<5	<5	<5	<5	<5	<5	<5	<1.69	<1.83	<1.83	<7.3	***0.804 J***	<0.7	--	--	<3.34	<0.63	<0.63	<0.928	<0.928	<0.9	<0.9	--	<1	<1	<1	<1	<1	<0.96	<0.96	<0.96	--	--	--
Selenium, Dissolved	µg/L	NS	<5	<5	<5	<5	<5	<5	<5	<5	<1.69	<1.83	<1.83	<7.3	<0.7	<0.7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	µg/L	100	<20	<20	<20	<20	<20	<20	<20	<20	<1.7	<1.7	<1.7	<0.395	<0.033	<0.033	--	--	<0.042	<0.153	<0.153	<0.14	***0.176 J***	<0.3	<0.3	--	<0.37	<0.37	<0.37	<0.37	<0.42	<0.42	<0.49	<0.49	--	--	--
Silver, Dissolved	µg/L	NS	<20	<20	<20	<20	<20	<20	<20	<20	<1.7	<1.7	<1.7	<0.395	<0.033	<0.033	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	<2	<2	<2	<2	<2	<2	<2	<2	<0.84	<0.523	<0.523	<0.134	***0.0595 J***	<0.05	--	--	<0.0325	<0.0255	<0.0255	<0.0644	<0.0644	<0.17	<0.17	--	<0.27	<0.27	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	--	--	--
Thallium, Dissolved	µg/L	NS	<2	<2	<2	<2	<2	<2	<2	<2	<0.84	<0.523	<0.523	<0.134	<0.05	<0.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium	µg/L	35	<50	<50	<50	<50	<50	<50	<50	<50	<2.1	***4.16 J***	<2.1	<4.17	<0.5	***0.596 J***	--	--	<0.449	<0.255	<0.255	<0.84	<0.84	<0.52	<0.52	--	<0.82	***1.16 J***	<0.82	***1.16 J***	<1.1	<1.1	<1.1	<1.1	--	--	--
Vanadium, Dissolved	µg/L	NS	<50	<50	<50	<50	<50	<50	<50	<50	<2.1	***3.62 J***	<2.1	<4.17	<0.5	***0.578 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	2000	***77.6***	<20	***68.5***	***34.7***	***63.6***	***102***	***93.3***	<20	<9.11	***20.7***	***46.1***	***7.83 J***	***18.7***	***8.65 J***	--	--	<6.95	***8.39 J***	<5.21	<11.5	<11.5	<10	<10	--	<10	***10 J***	<10	<10	<10	<10	<10	<10	--	--	--
Zinc, Dissolved	µg/L	NS	***74.6***	<20	***43.1***	***27.5***	***48.4***	***62.3***	***34.4***	<20	<9.11	***17.3 J***	***60.2***	***8.43 J***	***6.97 J***	***9.33 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Appendix I Organics																																				
1,1,1,2-Tetrachloroethane	µg/L	70	<1	<1	<1	<5	<1	<2	<1	<1	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	--	--	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.38	--	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	--	--	--
1,1,1-Trichloroethane	µg/L	200	<1	<1	<1	<1	<1	<1	<1	<1	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	--	--	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.19	--	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	--	--	--
1,1,2,2-Tetrachloroethane	µg/L	0.3	<1	<1	<1	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	--	--	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.47	--	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	--	--	--
1,1,2-Trichloroethane	µg/L	5	<1	<1	<1	<1	<1	<1	<1	<1	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	--	--	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.45	--	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	--	--	--
1,1-Dichloroethane	µg/L	140	<1	<1	<1	<1	<1	<1	<1	<1	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	--	--	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.22	--	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--	--	--
1,1-Dichloroethylene	µg/L	7	<2	<2	<2	<2	<2	<2	<2	<2	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	--	--	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.56	--	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	--	--	--
1,2,3-Trichloropropane	µg/L	0.006	<1	<1	<1	<1	<1	<1	<1	<1	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	--	--	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.59	--	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	--	--	--
1,2-Dibromo-3-chloropropane	µg/L	0.2	<10	<10	<10	<10	<10	<10	<10	<10	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.2	--	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	--	--	--
1,2-Dibromoethane	µg/L	0.05	<10	<10	<10	<10	<10	<10	<10	<10	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	--	--	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.34	--	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	--	--	--
1,2-Dichlorobenzene	µg/L	600	<1	<1	<1	<1	<1	<1	<1	<1	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	--	--	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.37	--	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	--	--	--
1,2-Dichloroethane	µg/L	5	<1	<1	<1	<1	<1	<1	<1	<1	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	--	--	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.39	--	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	--	--	--
1,2-Dichloropropane	µg/L	5	<1	<1	<1	<1	<1	<1	<1	<1	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	--	--	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.27	--	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	--	--	--
1,4-Dichlorobenzene	µg/L	75	<2	<1	<1	<1	<1	<1	<1	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	--	--	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.23	--	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	--	--	--
2-Butanone	µg/L	4000	<10	<10	***64.6***	<10	<10	***11.5***	<10	<10	<0.47	***0.96 J***	***0.58 J***	***0.624 J***	<0.47	<0.47	--	--	<0.47	<0.47	<0.47	<1.04	<1.04	<1.04	<2.1	--	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	--	--	--
2-Hexanone	µg/L	NS	<10	<10	<10	<10	<10	<10	<10	<10	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	--	--	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	--	<2	<2	<2	<2	<2	<2	<2	<2	--	--	--
4-Methyl-2-pentanone	µg/L	560	<10	<10	<10	<10	<10	<10	<10	<10	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--	--	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<2.1	--	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	--	--	--
Acetone	µg/L	6300	<10	<10	***50.3***	<10	<10	***16.4***	<10	<10	<1.79	<1.79	<1.79	<1.79	<1.79	<1.79	--	--	<1.79	***3.27 J***	<1.79	<1.79	***4.64 J***	<3.1	<3.1	--	<3.1	***3.73 J***	<3.1	<3.1	<3.1	<3.1	***7.3 J***	<3.1	--	--	--
Acrylonitrile	µg/L	0.32	<10	<10	<10	<10	<10	<10	<10	<10	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	--	--	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<2.2	--	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	--	--	--
Benzene	µg/L	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	--	--	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.22	--	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--	--	--
Bromochloromethane	µg/L	90	<5	<5	<5	<5	<5	<5	<5	<5	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	--	--	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.54	--	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	--	--	--
Bromodichloromethane	µg/L	80	<1	<5	<1	<1	<1	<1	<1	<1	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	--	--	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.39	--	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	--	--	--
Bromomethane	µg/L	10	<4	<4	<4	<4	<4	<4	<4	<4	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--	--	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<1.1	--	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	--	--	--
Carbon disulfide	µg/L	700	<2	<5	<5	<10	<1	<1	<1	<1	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	--	--	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.45	--	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	--	--	--
Carbon Tetrachloride	µg/L	5	<2	<4	<5	<5	<2	<2	<2	<2	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	--	--	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.65	--	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	--	--	--
Chlorobenzene	µg/L	100	<1	<1	<1	<1	<1	<1	<1	<1	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	--	--	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.4	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	--	--	--
Chloroethane	µg/L	2800	<4	<4	<4	<4	<4	<4	<4	<4	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	--	--	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.79	--	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	--	--	--
Chloromethane	µg/L	NS	<3	<3	<3	<3	<3	<3	<3	<3	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	--	--	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.61	--	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	--	--	--
cis-1,2-Dichloroethylene	µg/L	70	<2	<1	<1	<1	<1	<1	<1	<1	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	--	--	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.21	--	***0.354 J***	***0.8 J***	<0.21	<0.21	***0.723 J***	<0.21	***0.876 J***	<0.21	--	--	--
cis-1,3-Dichloropropene	µg/L	NS	<5	<5	<5	<10	<10	<5	<5	<5	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	--	--	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.25	--	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	--	--	--
Dibromochloromethane	µg/L	80	<5	<5	<5	<5	<5	<5	<5	<5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	--	--	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.75	--	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	--	--	--
Dibromomethane	µg/L	70	<2	<1	<1	<1	<1	<1	<1	<1	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	--	--	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.33	--	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	--	--	--
Dichloromethane	µg/L	5	<5	<5	<5	<5	<5	<5	<5	<5	<0.17	<0.17	***0.48 J***	<0.17	<0.17	***0.717 J***	--	--	<0.17	***0.339 J***	<0.17	<0.17	<0.17	<1.7	<1.7	--	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	--	--	--
Ethylbenzene	µg/L	700	<1	<1	<1	<1	<1	<1	<1	<1	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	--	--	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.31	--	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	--	--	--
Iodomethane	µg/L	NS	<10	<50	<10	<10	<10	<10	<10	<20	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	--	--	<0.8	<0.8	<0.8	***7.03 J***	<0.8	<0.8	<7	--	<7	<7	<7	<7	<7	<7	<7	<7	--	--	--
Styrene	µg/L	100	<5	<1	<4	<1	<2	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	--	--	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.37	--	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	--	--	--
Tetrachloroethylene	µg/L	5	<1	<1	<1	<1	<1	<1	<1	<1	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	--	--	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.48	--	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	--	--	--
Toluene	µg/L	1000	<1	<1	<1	<1	<1	<1	<1	<1	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	--	--	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.43	--	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	--	--	--
Trans-1,2-dichloroethylene	µg/L	100	<1	<1	<1	<1	<1	<1	<1	<1	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	--	--	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.27	--	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	--	--	--
trans-1,3-Dichloropropene	µg/L	NS	<5	<5	<5	<10	<10	<5	<5	<5	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--	--	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.56	--	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	--	--	--
trans-1,4-Dichloro-2-butene	µg/L	1.8	<10	<10	<10	<10	<10	<10	<10	<10	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	--	--	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<1.1	--	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	--	--	--
Tribromomethane	µg/L	80	<5	<5	<5	<5	<10	<5	<5	<5	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	--	--	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.78	--	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	--	--	--
Trichloroethylene	µg/L	5	<1	<1	<1	<1	<1	<1	<1	<1	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	--	--	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.43	--	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	--	--	--
Trichlorofluoromethane	µg/L	2000	<4	<4	<4	<4	<4	<4	<4	<4	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	--	--	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.38	--	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	--	--	--
Trichloromethane	µg/L	80	<1	<1	<1	<1	<1	<1	<1	<1	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	--	--	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<1.3	--	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	--	--	--
Vinyl Acetate	µg/L	NS	<2	<2	<2	<2	<2	<2	<4	<2	<0.74	<0.74	<0.74	<0.74	<0.74	<0.74	--	--	<0.74	<0.74	<0.74	<0.74	<0.74	<2.5	<2.5	--	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	--	--	--
Vinyl Chloride	µg/L	2	<1	<1	<1	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	--	--	<0.1	<0.1	<0.1	***0.2 J***	***0.298 J***	***0.267 J***	<0.6	--	***0.462 J***	***0.636 J***	<0.18	***0.609 J***	***0.357 J***	***0.565 J***	***0.496 J***	<0.18	--	--	--
Xylenes	µg/L	10000	<3	<3	<3	<3	<3	<3	<3	<3	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13

Black Hawk County Landfill
Appendix I Results
Cell W2 Underdrain GUW2-1

Parameter Name	Units	GPS	Dec-14	Mar-15	Jun-15	Sep-15	Mar-16	Oct-16	Mar-17	Sep-17	Mar-18	Sep-18	Apr-19	Sep-19	Apr-20	Oct-20	Mar-21	Nov-21	May-22	Nov-22	Mar-23	Sep-23	May-24	Oct-24
Appendix I Inorganics																								
Total Suspended Solids	mg/L	NS	***2.13***	<1.6	<1.2	<1.2	<0.581	<0.581	<0.581	***1.13 J***	<0.638	***1.75 J***	<0.638	***2.63***	***3 J***	***11.3***	***5.5 J***	***10.5***	***10***	***15***	***3.63***	***19***	***25***	***31.5***
Turbidity, Field	NTU	NS	***3.81***	***0.14***	***2.038***	***1.121***	--	***9.11***	***8.32***	***11.73***	***9.79***	***6.842***	***6.59***	***11.19***	***6.29***	***3.11***	***11.29***	***9.21***	***11.29***	***4.13***	***11.97***	***6.43***	***9.74***	***7.43***
Turbidity, Lab	NTU	NS	***1.8***	<0.7	<0.7	<0.7	<0.4	<0.4	<0.4	***0.7 J***	<0.4	***0.8 J***	<0.4	***14.7***	***14.4***	--	--	--	--	--	--	--	--	--
Antimony	µg/L	6	***0.198 J***	<0.161	***0.167 J***	***0.214 J***	<0.237	<0.237	<0.185	<0.185	<0.42	<0.42	<0.53	<0.53	<0.58	<0.51	<1.1	<1.1	<0.69	<0.69	<0.69	<1	<1	<1
Antimony, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	<0.945	<0.945	<0.945	<0.945	<0.672	<0.672	<0.505	<0.505	<0.57	<0.57	***1.05 J***	***1.34 J***	***1.98 J***	***4.6***	***2.74***	***3.54***	***3.53***	***3.12***	***5.04***	***6.21***	***10.2***	***12.9***
Arsenic, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	***40.3***	***39.2***	***48.5***	***58.4***	***59.2***	***62.8***	***66.4***	***68.3***	***83.5***	***82.3***	***74.1***	***81.8***	***82.8***	***89.6***	***89***	***89.9***	***92.9***	***86***	***111***	***127***	***246***	***344***
Barium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	<0.039	<0.039	<0.039	***0.043 J***	<0.221	<0.221	<0.125	<0.125	<0.19	<0.19	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.33	<0.33	<0.33
Beryllium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	<0.112	<0.112	<0.112	<0.112	***0.046 J***	***0.037 J***	<0.0441	<0.0441	<0.06	<0.06	<0.077	<0.039	<0.039	<0.049	<0.051	<0.051	<0.055	<0.055	***0.083 J***	<0.1	<0.1	<0.1
Cadmium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	<1.24	<1.24	<1.24	<1.24	<0.355	<0.355	<0.729	<0.729	<0.76	<0.76	<0.98	<0.98	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.2	<1.2
Chromium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	9.83	***0.169 J***	***0.352 J***	***0.887***	***1.76***	***2.68***	***3.16***	***3.07***	***3.86***	***3.98***	***3.79***	***4.02***	***3.93***	***3.57***	***2.54***	***3.13***	***2.41***	***3.42***	***2.76***	***2.65***	***2.47***	***2.08***	***2.03***
Cobalt, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	1300	***1.28 J***	<0.485	***0.538 J***	<0.485	<1.22	<1.22	<2.19	<2.19	<1.6	<1.6	<2	<2	<3.2	<1.5	<1.4	<1.4	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8
Copper, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	<0.0967	<0.0967	<0.0967	<0.0967	<0.211	<0.211	<0.324	<0.324	<0.25	<0.25	<0.27	<0.27	<0.27	<0.11	<0.21	<0.21	<0.24	<0.24	<0.24	<0.24	<0.26	<0.26
Lead, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	µg/L	722	***4.98 J***	***4.57 J***	***4.16 J***	***6.57***	***5.26***	***4.7 J***	***4.58 J***	***4.29 J***	***4.41 J***	<3	***3.21 J***	***2.38 J***	<1.9	***2.49 J***	***2.83 J***	***2.02 J***	***2.43 J***	***2.31 J***	***2.41 J***	***2.32 J***	<2.1	<2.1
Nickel, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	<3.34	<3.34	<3.34	<3.34	<0.63	<0.63	<0.928	<0.928	<0.9	<0.9	<1	<1	<1	<1	<0.96	<0.96	<0.96	<0.96	<0.96	<1.4	<1.4	<1.4
Selenium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	µg/L	100	<0.042	<0.042	<0.042	<0.042	<0.153	<0.153	<0.14	<0.14	<0.3	<0.3	<0.37	<0.37	<0.37	<0.37	<0.42	<0.42	<0.49	<0.49	<0.49	<0.5	<0.5	<0.5
Silver, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	***0.12 J***	***0.064 J***	***0.07 J***	***0.07 J***	***0.039 J***	***0.032 J***	<0.0644	<0.0644	<0.17	<0.17	<0.27	<0.27	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.57	<0.57
Thallium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium	µg/L	35	***0.761 J***	***0.565 J***	***0.661 J***	***0.695 J***	***0.417 J***	***0.344 J***	<0.84	<0.84	***0.698 J***	<0.52	<0.82	<0.82	<0.82	<0.85	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Vanadium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	2000	<6.95	<6.95	<6.95	<6.95	<5.21	<5.21	<11.5	<11.5	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<6.4	<9.7	<9.7
Zinc, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Appendix I Organics																								
1,1,1,2-Tetrachloroethane	µg/L	70	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38
1,1,1-Trichloroethane	µg/L	200	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19
1,1,2,2-Tetrachloroethane	µg/L	0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47
1,1,2-Trichloroethane	µg/L	5	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45
1,1-Dichloroethane	µg/L	140	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22
1,1-Dichloroethylene	µg/L	7	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56
1,2,3-Trichloropropane	µg/L	0.0058	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59
1,2-Dibromo-3-chloropropane	µg/L	0.2	<0.12	<0.12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2
1,2-Dibromoethane	µg/L	0.05	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34
1,2-Dichlorobenzene	µg/L	600	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37
1,2-Dichloroethane	µg/L	5	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39
1,2-Dichloropropane	µg/L	5	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27
1,4-Dichlorobenzene	µg/L	75	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23
2-Butanone	µg/L	4000	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<1.04	<1.04	<1.04	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1
2-Hexanone	µg/L	NS	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
4-Methyl-2-pentanone	µg/L	560	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1
Acetone	µg/L	6300	<1.79	<1.79	<1.79	<1.79	<1.79	***2.37 J***	<1.79	***3.3 J***	***3.28 J***	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	***4.61 J***	***8.91 J***	<3.1	<3.1	<3.1	<3.1	<3.1
Acrylonitrile	µg/L	0.32	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2
Benzene	µg/L	5	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22
Bromochloromethane	µg/L	90	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54
Bromodichloromethane	µg/L	80	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39
Bromomethane	µg/L	10	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Carbon disulfide	µg/L	700	***0.2 J***	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45
Carbon Tetrachloride	µg/L	5	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65
Chlorobenzene	µg/L	100	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Chloroethane	µg/L	2800	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79
Chloromethane	µg/L	NS	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61
cis-1,2-Dichloroethylene	µg/L	70	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21
cis-1,3-Dichloropropene	µg/L	NS	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Dibromochloromethane	µg/L	80	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75
Dibromomethane	µg/L	70	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Dichloromethane	µg/L	5	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	***0.818 J***	<0.17	<0.17	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7
Ethylbenzene	µg/L	700	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31
Iodomethane	µg/L	NS	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7
Styrene	µg/L	100	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37
Tetrachloroethylene	µg/L	5	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48
Toluene	µg/L	1000	***1.13***	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43
Trans-1,2-dichloroethylene	µg/L	100	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27
trans-1,3-Dichloropropene	µg/L	NS	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56
trans-1,4-Dichloro-2-butene	µg/L	1.8	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Tribromomethane	µg/L	80	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78
Trichloroethylene	µg/L	5	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43
Trichlorofluoromethane	µg/L	2000	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38
Trichloromethane	µg/L	80	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3
Vinyl Acetate	µg/L	NS	<0.74	<0.74	<0.74	<0.74	<0.74	<0.74	<0.74	<0.74	<0.74	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Vinyl Chloride	µg/L	2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.6	<0.6	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	***0.209 J***
Xylenes	µg/L	10000	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Detections at or above the RL are shown in bold italics on gray background.

Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.

NS = No standard

Black Hawk County Landfill
Appendix I Results
Cell W2 Underdrain GUW3-1

Parameter Name	Units	GPS	May-22	Aug-22	Nov-22	Jan-23	Mar-23	Sep-23	May-24	Oct-24
Appendix I Inorganics										
Total Suspended Solids	mg/L	NS	***16.3***	***11***	***40.5***	***17***	***7***	***37***	***18.7***	***26.5***
Turbidity, Field	NTU	NS	***14.32***	***8.73***	***19.31***	***3.72***	***16.42***	***20.11***	***9.27***	***8.73***
Turbidity, Lab	NTU	NS	--	--	--	--	--	--	--	--
Antimony	µg/L	6	***1.34 J***	<0.69	<0.69	<0.69	<0.69	***1.1 J***	<1	<1
Antimony, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	***1.29 J***	***1.69 J***	***1.96 J***	<0.75	<0.75	***2.98***	***1.84 J***	***2.04***
Arsenic, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--
Barium	µg/L	2000	***34.9***	***38.2***	***32.3***	***26.7***	***33.4***	***30***	***27.4***	***31.5***
Barium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	<0.27	<0.27	<0.27	<0.27	<0.27	<0.33	<0.33	<0.33
Beryllium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	<0.055	<0.055	<0.055	<0.055	<0.055	***0.284***	<0.1	<0.1
Cadmium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--
Chromium	µg/L	100	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.2	<1.2
Chromium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--
Cobalt	µg/L	9.83	***5.34***	***4.21***	***2.52***	***2***	***2.24***	***2.77***	***2.21***	***2.05***
Cobalt, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--
Copper	µg/L	1300	<1.8	***8.37***	***10.7***	***5.84***	***7.22***	***40.3***	***5.55***	***6.59***
Copper, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--
Lead	µg/L	15	<0.24	***0.767***	***0.923***	***0.241 J***	<0.24	***1.78***	***0.486 J***	***0.342 J***
Lead, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--
Nickel	µg/L	722	***15.8***	***16.2***	***10.4***	***8.53***	***7.46***	***10.4***	***6.61***	***7.72***
Nickel, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--
Selenium	µg/L	50	<0.96	<0.96	<0.96	<0.96	<0.96	***2.43 J***	<1.4	<1.4
Selenium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--
Silver	µg/L	100	<0.49	<0.49	<0.49	<0.49	<0.49	***0.997 J***	<0.5	<0.5
Silver, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--
Thallium	µg/L	2	<0.26	<0.26	<0.26	<0.26	<0.26	***9.99***	***1.15***	<0.57
Thallium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--
Vanadium	µg/L	35	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Vanadium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--
Zinc	µg/L	2000	***29.9***	***14.5 J***	***19.5 J***	***52.8***	***13.3 J***	***35.4***	***11 J***	***17 J***
Zinc, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--
Appendix I Organics										
1,1,1,2-Tetrachloroethane	µg/L	70	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38
1,1,1-Trichloroethane	µg/L	200	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19
1,1,2,2-Tetrachloroethane	µg/L	0.3	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47
1,1,2-Trichloroethane	µg/L	5	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45
1,1-Dichloroethane	µg/L	140	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22
1,1-Dichloroethylene	µg/L	7	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56
1,2,3-Trichloropropane	µg/L	0.0058	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59
1,2-Dibromo-3-chloropropane	µg/L	0.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2
1,2-Dibromoethane	µg/L	0.05	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34
1,2-Dichlorobenzene	µg/L	600	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37
1,2-Dichloroethane	µg/L	5	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39
1,2-Dichloropropane	µg/L	5	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27
1,4-Dichlorobenzene	µg/L	75	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23
2-Butanone	µg/L	4000	<2.1	<2.1	<2.1	***2.13 J***	<2.1	<2.1	<2.1	<2.1
2-Hexanone	µg/L	NS	<2	<2	<2	<2	<2	<2	<2	<2
4-Methyl-2-pentanone	µg/L	560	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1
Acetone	µg/L	6300	***9.86 J***	<3.1	***68.6***	***28.2***	***3.89 J***	***14.7***	<3.1	***5.45 J***
Acrylonitrile	µg/L	0.32	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2
Benzene	µg/L	5	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22
Bromochloromethane	µg/L	90	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54
Bromodichloromethane	µg/L	80	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39
Bromomethane	µg/L	10	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Carbon disulfide	µg/L	700	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45
Carbon Tetrachloride	µg/L	5	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65
Chlorobenzene	µg/L	100	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Chloroethane	µg/L	2800	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79
Chloromethane	µg/L	NS	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61
cis-1,2-Dichloroethylene	µg/L	70	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21
cis-1,3-Dichloropropene	µg/L	NS	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Dibromochloromethane	µg/L	80	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75
Dibromomethane	µg/L	70	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Dichloromethane	µg/L	5	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7
Ethylbenzene	µg/L	700	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31
Iodomethane	µg/L	NS	<7	<7	<7	<7	<7	<7	<7	<7
Styrene	µg/L	100	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37
Tetrachloroethylene	µg/L	5	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48
Toluene	µg/L	1000	<0.43	<0.43	<0.43	***0.481 J***	<0.43	<0.43	<0.43	<0.43
Trans-1,2-dichloroethylene	µg/L	100	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27
trans-1,3-Dichloropropene	µg/L	NS	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56
trans-1,4-Dichloro-2-butene	µg/L	1.8	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Tribromomethane	µg/L	80	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78
Trichloroethylene	µg/L	5	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43
Trichlorofluoromethane	µg/L	2000	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38
Trichloromethane	µg/L	80	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3
Vinyl Acetate	µg/L	NS	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Vinyl Chloride	µg/L	2	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18
Xylenes	µg/L	10000	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Detections at or above the RL are shown in bold italics on gray background.

Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.

NS = No standard

Black Hawk County Landfill
Appendix I Results
Cell X Underdrain GUX-1

Parameter Name	Units	GPS	Mar-10	Jun-10	Jul-10	Sep-10	Dec-10	Feb-11	May-11	Aug-11	Nov-11	May-12	Dec-12	Apr-13	Oct-13	Mar-14	Oct-14	Mar-15	Aug-15	Mar-16	Sep-16	Mar-17	Sep-17	Mar-18	Sep-18	Apr-19	Sep-19	Apr-20	Sep-20	Apr-21	Nov-21	May-22	Nov-22	Mar-23	Sep-23	May-24	Oct-24
Appendix I Inorganics																																				
Total Suspended Solids	mg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	***16***	***11.8***	***13.1***	***10.8***	***9.75***	***14.3***	***30.4***	***19.1***	***23.4***	***14.6***	***24***	***16***	***17***	No	No	***20.5***	***61***	***18***	***31.5***	***27***	***28.5***
Turbidity, Field	NTU	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	***6.29***	***0.67***	***16.32***	--	***21.16***	***18.22***	***11.87***	***4.32***	***4.675***	***7.37***	***5.29***	***12.21***	***11.21***	Sample	Sample	***14.32***	***18.39***	***11.29***	***8.76***	***11.42***	***4.57***
Turbidity, Lab	NTU	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	***31.4***	***55.5***	***74.8***	***14.8***	***61.8***	***82***	***33.7***	***141***	***126***	***92***	***126***	***81.7***	--	Pump	Pump	--	--	--	--	--	--
Antimony	µg/L	6	<6	<6	<6	<6	<6	<6	<6	***6.18***	<2.73	***10.5***	<0.584	<0.271	<0.4	<0.4	<0.161	<0.161	<0.161	<0.237	<0.237	<0.185	<0.185	<0.42	<0.42	<0.53	<0.53	<0.58	<0.51	Failure	Failure	<0.69	<0.69	<0.69	***1.46 J***	<1	<1
Antimony, Dissolved	µg/L	NS	<6	<6	<6	<6	<6	<6	<6	<6	<2.73	***7.55***	<0.584	<0.271	<0.4	<0.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	***3.33***	***8.32***	***2***	***1.64***	<1	<1	<4	<2	<0.6	***9.72***	<0.37	<2.72	<0.33	<0.33	<0.945	<0.945	<0.945	<0.672	<0.672	<0.505	<0.505	<0.57	***2.12***	<0.75	<0.75	<0.88	<0.88	--	--	<0.75	<0.75	<0.75	***1.14 J***	<0.53	<0.53
Arsenic, Dissolved	µg/L	NS	***1.22***	***2.56***	***1.1***	<8	<1	<1	<4	<2	<0.47	<0.37	<0.185	<2.72	<0.33	<0.33	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	***269***	***288***	***251***	***343***	***382***	***257***	***345***	***391***	***386***	***586***	***874***	***622***	***645***	***579***	***740***	***634***	***583***	***431***	***529***	***570***	***1720***	***922***	***593***	***648***	***738***	***717***	***703***	--	--	***791***	***860***	***699***	***812***	***848***	***820***
Barium, Dissolved	µg/L	NS	***239***	***161***	***257***	***309***	***365***	***284***	***323***	***349***	***389***	***278***	***910***	***564***	***595***	***583***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	<1	<1	<1	<1	<1	<1	<1	<1	<0.051	<0.169	<0.169	<0.348	<0.08	<0.08	<0.039	<0.039	<0.039	<0.221	<0.221	<0.125	<0.125	<0.19	<0.19	<0.27	<0.27	<0.27	<0.27	--	--	<0.27	<0.27	<0.27	<0.33	<0.33	<0.33
Beryllium, Dissolved	µg/L	NS	<1	<1	<1	<1	<1	<1	<1	<1	<0.051	<0.169	<0.169	<0.348	<0.08	<0.08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	***0.131 J***	<0.195	<0.195	<0.53	<0.1	<0.1	<0.112	<0.112	<0.112	<0.0351	<0.0351	<0.0441	<0.0441	<0.06	***0.089 J***	<0.077	<0.039	<0.039	<0.049	--	--	<0.055	<0.055	<0.055	***0.296***	<0.1	<0.1
Cadmium, Dissolved	µg/L	NS	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.124	<0.195	<0.195	<0.53	<0.1	<0.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	<20	<20	<20	<20	<20	<20	<20	<20	<1.81	***14.7 J***	<1.81	<2.09	<0.5	<0.5	<1.24	<1.24	<1.24	<0.355	<0.355	<0.729	<0.729	<0.76	***2.62 J***	<0.98	<0.98	<1.1	<1.1	--	--	<1.1	<1.1	<1.1	<1.1	<1.2	<1.2
Chromium, Dissolved	µg/L	NS	<20	<20	<20	<20	<20	<20	<20	<20	<1.81	<1.81	<1.81	<2.09	<0.5	<0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	9.83	<20	<20	<20	<20	<20	<20	<20	<20	<1.55	***12.5 J***	<1.55	<0.277	***0.0987 J***	***0.067 J***	<0.0528	***0.71 J***	<0.0528	***0.54 J***	***0.069 J***	***0.106 J***	***0.079 J***	***0.223 J***	***2.75***	<0.091	<0.091	<0.091	<0.091	--	--	***0.251 J***	<0.19	<0.19	***0.344 J***	<0.17	<0.17
Cobalt, Dissolved	µg/L	NS	<20	<20	<20	<20	<20	<20	<20	<20	<1.55	<1.55	<1.55	<0.277	***0.116 J***	***0.121 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	1300	<20	<20	<20	<20	<20	<20	***20.5***	***22.7***	***10.8 J***	***20.8***	<1.51	***0.99 J***	***1.26 J***	<0.56	<0.485	<0.485	***11.7***	<1.22	<1.22	<2.19	<2.19	***1.65 J***	<1.6	<2	<2	<3.2	<1.5	--	--	<1.8	<1.8	***4.31 J***	***6.29***	***4.13 J***	***4.45 J***
Copper, Dissolved	µg/L	NS	<20	<20	<20	<20	<20	<20	***20.6***	***27.5***	***9.37 J***	<1.51	***1.96 J***	<0.85	***1.83 J***	<0.56	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	<4	<4	<4	<4	<4	<4	<4	<4	<1	<0.821	<0.821	<1.04	<0.18	<0.18	<0.0967	<0.0967	<0.0967	<0.211	<0.211	<0.324	<0.324	<0.25	<0.25	<0.27	<0.27	<0.27	<0.11	--	--	<0.24	<0.24	***0.304 J***	***0.62***	<0.26	***0.359 J***
Lead, Dissolved	µg/L	NS	<4	<4	<4	<4	<4	<4	<4	<4	<1	<0.821	<0.821	<1.04	<0.18	<0.18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	µg/L	722	<50	<50	<50	<50	<50	<50	<50	<50	<2.58	***26.7 J***	<2.58	***4.89***	***1.24 J***	***0.797 J***	<1.74	***0.852 J***	<0.581	<1.53	<1.53	***1.17 J***	<0.929	<1	***16.5***	<1.7	<1.7	<1.9	<1.9	--	--	<1.9	<1.9	***1.93 J***	***2.06 J***	<2.1	<2.1
Nickel, Dissolved	µg/L	NS	<50	<50	<50	<50	<50	<50	<50	<50	<2.58	***4.97 J***	<2.58	***3.71***	***1.41 J***	***2.27***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	<5	<5	<5	<5	<5	<5	<5	<5	<1.69	<1.83	<1.83	<7.3	<0.7	<0.7	<3.34	<3.34	<3.34	<0.63	<0.63	<0.928	<0.928	<0.9	<0.9	<1	<1	<1	<1	--	--	<0.96	<0.96	<0.96	***1.89 J***	<1.4	<1.4
Selenium, Dissolved	µg/L	NS	<5	<5	<5	<5	<5	<5	<5	<5	<1.69	<1.83	<1.83	<7.3	<0.7	<0.7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	µg/L	100	<20	<20	<20	<20	<20	<20	<20	<20	<1.7	***12.4 J***	<1.7	<0.395	<0.033	<0.033	<0.042	<0.042	<0.042	<0.153	<0.153	<0.14	<0.14	<0.3	<0.3	<0.37	<0.37	<0.37	<0.37	--	--	***0.777 J***	<0.49	<0.49	***1.12***	<0.5	<0.5
Silver, Dissolved	µg/L	NS	<20	<20	<20	<20	<20	<20	<20	<20	<1.7	<1.7	<1.7	<0.395	<0.033	<0.033	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	<2	<2	<2	<2	<2	<2	<2	<2	<0.84	<0.523	<0.523	<0.134	<0.05	<0.05	<0.0325	<0.0325	<0.0325	<0.0255	<0.0255	<0.0644	<0.0644	<0.17	<0.17	<0.27	<0.27	<0.26	<0.26	--	--	<0.26	<0.26	<0.26	***12.8***	<0.57	<0.57
Thallium, Dissolved	µg/L	NS	<2	<2	<2	<2	<2	<2	<2	<2	<0.84	<0.523	<0.523	<0.134	<0.05	<0.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium	µg/L	35	<50	<50	<50	<50	<50	<50	<50	<50	<2.1	***14 J***	<2.1	<4.17	<0.5	***0.588 J***	***0.501 J***	***0.515 J***	<0.449	***0.478 J***	***0.407 J***	<0.84	<0.84	***0.705 J***	***0.924 J***	<0.82	<0.82	***1.32 J***	<0.85	--	--	<1.1	<1.1	***1.44 J***	<1.1	<1.1	<1.1
Vanadium, Dissolved	µg/L	NS	<50	<50	<50	<50	<50	<50	<50	<50	<2.1	***4.51 J***	<2.1	<4.17	<0.5	***0.71 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	2000	***132***	<20	***447***	***41.3***	***49.2***	***49.9***	<20	<20	<9.11	<9.11	***44.8***	***12.4 J***	***6.42 J***	***6.5 J***	<6.95	<6.95	<6.95	<5.21	<5.21	<11.5	<11.5	<10	<10	<10	<10	<10	<10	--	--	<10	<10	<10	***16.4 J***	<9.7	<9.7
Zinc, Dissolved	µg/L	NS	***104***	<20	***103***	***46.1***	***55.1***	***46.5***	<20	<20	<9.11	***23***	***53.1***	***6.48 J***	***6.03 J***	***5.34 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Appendix I Organics																																				
1,1,1,2-Tetrachloroethane	µg/L	70	<1	<4	<1	<5	<1	<2	<1	<1	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.38	<0.38	<0.38	<0.38	<0.38	--	--	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38
1,1,1-Trichloroethane	µg/L	200	<1	<4	<1	<1	<1	<1	<1	<1	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.19	<0.19	<0.19	<0.19	<0.19	--	--	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19
1,1,2,2-Tetrachloroethane	µg/L	0.3	<1	<1	<1	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.47	<0.47	<0.47	<0.47	<0.47	--	--	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47
1,1,2-Trichloroethane	µg/L	5	<1	<1	<1	<1	<1	<1	<1	<1	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.45	<0.45	<0.45	<0.45	<0.45	--	--	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45
1,1-Dichloroethane	µg/L	140	<1	<1	<1	<1	<1	<1	<1	<1	***0.24 J***	***0.29 J***	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.22	<0.22	<0.22	<0.22	<0.22	--	--	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22
1,1-Dichloroethylene	µg/L	7	<2	<2	<2	<2	<2	<2	<2	<2	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.56	<0.56	<0.56	<0.56	<0.56	--	--	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56
1,2,3-Trichloropropane	µg/L	0.006	<1	<1	<1	<1	<1	<1	<1	<1	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.59	<0.59	<0.59	<0.59	<0.59	--	--	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59
1,2-Dibromo-3-chloropropane	µg/L	0.2	<10	<10	<10	<10	<10	<10	<10	<10	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.2	<1.2	<1.2	<1.2	<1.2	--	--	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2
1,2-Dibromoethane	µg/L	0.05	<10	<10	<10	<10	<10	<10	<10	<10	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.34	<0.34	<0.34	<0.34	<0.34	--	No Sample	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34
1,2-Dichlorobenzene	µg/L	600	<1	<1	<1	<1	<1	<1	<1	<1	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.37	<0.37	<0.37	<0.37	<0.37	--	No Power	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37
1,2-Dichloroethane	µg/L	5	<1	<1	<1	<1	<1	<1	<1	<1	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.39	<0.39	<0.39	<0.39	<0.39	--	To Pump	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39
1,2-Dichloropropane	µg/L	5	<1	<1	<1	<1	<1	<1	<1	<1	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.27	<0.27	<0.27	<0.27	<0.27	--	--	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27
1,4-Dichlorobenzene	µg/L	75	<2	<1	<1	<1	<1	<1	<1	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.23	<0.23	<0.23	<0.23	<0.23	--	--	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23
2-Butanone	µg/L	4000	<10	<10	<10	<10	<10	<10	<10	<10	<0.47	***0.65 J***	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<1.04	<1.04	<1.04	<2.1	<2.1	<2.1	<2.1	<2.1	--	--	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1
2-Hexanone	µg/L	NS	<10	<20	<10	<10	<10	<10	<10	<10	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<2	<2	<2	<2	--	--	<2	<2	<2	<2	<2	<2
4-Methyl-2-pentanone	µg/L	560	<10	<10	<10	<10	<10	<10	<10	<10	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<2.1	<2.1	<2.1	<2.1	<2.1	--	--	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1
Acetone	µg/L	6300	<10	<10	<20	<10	***20.7***	<10	<10	<10	<1.79	<1.79	<1.79	<1.79	<1.79	<1.79	<1.79	<1.79	<1.79	<1.79	<1.79	***8.61 J***	***3.14 J***	***3.9 J***	<3.1	<3.1	<3.1	<3.1	<3.1	--	--	***8.37 J***	<3.1	<3.1	<3.1	<3.1	<3.1
Acrylonitrile	µg/L	0.32	<10	<10	<10	<10	<10	<10	<10	<10	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<2.2	<2.2	<2.2	<2.2	<2.2	--	--	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2
Benzene	µg/L	5	***2.77***	***1.7***	***1.97***	***1.97***	***0.97***	***1.33***	***2.49***	***1.18***	***2.37***	***3.38***	***3.79***	***4.07***	***2.13***	***2.26***	***1.97***	***1.59***	***1.79***	***1.8***	***1.59***	***0.957***	***0.493 J***	***1.58***	***1.88***	***0.38 J***	***0.566***	***0.35 J***	***0.252 J***	--	--	***0.626***	<0.22	<0.22	<0.22	<0.22	<0.22
Bromochloromethane	µg/L	90	<5	<5	<5	<5	<5	<5	<5	<5	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.54	<0.54	<0.54	<0.54	<0.54	--	--	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54
Bromodichloromethane	µg/L	80	<1	<4	<1	<1	<1	<1	<1	<1	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.39	<0.39	<0.39	<0.39	<0.39	--	--	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39
Bromomethane	µg/L	10	<4	<4	<4	<4	<4	<4	<4	<4	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<1.1	<1.1	<1.1	<1.1	<1.1	--	--	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Carbon disulfide	µg/L	700	<2	<4	<5	<10	<1	<1	<1	<1	<0.15	<0.15	***1.02***	***2.68***	***0.405 J***	***1.67***	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.45	<0.45	<0.45	<0.45	<0.45	--	--	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45
Carbon Tetrachloride	µg/L	5	<2	<4	<5	<5	<2	<2	<2	<2	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.65	<0.65	<0.65	<0.65	<0.65	--	--	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65
Chlorobenzene	µg/L	100	<1	<1	<1	<1	<1	<1	<1	<1	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.4	<0.4	<0.4	<0.4	<0.4	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Chloroethane	µg/L	2800	<4	<4	<4	<4	<4	<4	<4	<4	<0.15	***0.83 J***	<0.15	***0.963 J***	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.79	<0.79	<0.79	<0.79	<0.79	--	--	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79
Chloromethane	µg/L	NS	<3	<3	<3	<3	<3	<3	<3	<3	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.61	<0.61	<0.61	<0.61	<0.61	--	--	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61
cis-1,2-Dichloroethylene	µg/L	70	<2	***1.76***	***1.06***	***1.06***	<1	<1	<1	<1	***1.15***	***0.47 J***	***0.71 J***	***0.631 J***	***0.748 J***	***0.808 J***	***0.698 J***	***0.426 J***	***0.667 J***	***0.928 J***	***0.577 J***	***0.448 J***	***0.31 J***	***0.259 J***	***0.48 J***	***0.417 J***	***0.706 J***	***0.325 J***	***0.265 J***	--	--	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21
cis-1,3-Dichloropropene	µg/L	NS	<5	<5	<5	<10	<10	<5	<5	<5	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.25	<0.25	<0.25	<0.25	<0.25	--	--	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Dibromochloromethane	µg/L	80	<5	<5	<5	<5	<5	<5	<5	<5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.75	<0.75	<0.75	<0.75	<0.75	--	--	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75
Dibromomethane	µg/L	70	<2	<1	<1	<1	<1	<1	<1	<1	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.33	<0.33	<0.33	<0.33	<0.33	--	--	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Dichloromethane	µg/L	5	<5	<5	<5	<5	<5	<5	<5	<5	<0.17	***0.17 J***	***0.44 J***	<0.17	<0.17	***0.527 J***	<0.17	***0.241 J***	<0.17	<0.17	<0.17	***1.53 J***	<0.17	<0.17	<1.7	<1.7	<1.7	<1.7	<1.7	--	--	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7
Ethylbenzene	µg/L	700	<1	<1	<1	<1	<1	<1	<1	<1	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.31	<0.31	<0.31	<0.31	<0.31	--	--	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31
Iodomethane	µg/L	NS	<10	<10	<10	<10	<10	<10	<10	<20	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<7	<7	<7	<7	<7	--	--	<7	<7	<7	<7	<7	<7
Styrene	µg/L	100	<5	<4	<4	<1	<2	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.37	<0.37	<0.37	<0.37	<0.37	--	--	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37
Tetrachloroethylene	µg/L	5	<1	<1	<1	<1	<1	<1	<1	<1	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.48	<0.48	<0.48	<0.48	<0.48	--	--	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48
Toluene	µg/L	1000	<1	<1	<1	<1	<1	<1	<1	<1	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.43	<0.43	<0.43	<0.43	<0.43	--	--	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43
Trans-1,2-dichloroethylene	µg/L	100	<1	<1	<1	<1	<1	<1	<1	<1	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.27	<0.27	<0.27	<0.27	<0.27	--	--	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27
trans-1,3-Dichloropropene	µg/L	NS	<5	<5	<5	<10	<10	<5	<5	<5	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.56	<0.56	<0.56	<0.56	<0.56	--	--	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56
trans-1,4-Dichloro-2-butene	µg/L	1.8	<10	<10	<10	<10	<10	<10	<10	<10	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<1.1	<1.1	<1.1	<1.1	<1.1	--	--	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Tribromomethane	µg/L	80	<5	<20	<5	<5	<10	<5	<5	<5	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.78	<0.78	<0.78	<0.78	<0.78	--	--	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78
Trichloroethylene	µg/L	5	<1	<1	<1	<1	<1	<1	<1	<1	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.43	<0.43	<0.43	<0.43	<0.43	--	--	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43
Trichlorofluoromethane	µg/L	2000	<4	<4	<4	<4	<4	<4	<4	<4	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.

Black Hawk County Landfill
Appendix II Results
Underdrain Outlet G1X-1

Parameter Name	Units	UPL	Abs. 2010
Alcohols/Co ycols by GC			
Acetonitrile	ug/L	NS	<10000
Methanol	ug/L	21593	<10000
Pesticides (GC)			
2,4,5-T	ug/L	70	<0.54
2,4-D	ug/L	70	<0.54
Silvex (2,4,5-TP)	ug/L	50	<0.54
Inorganics			
N, nitrite	ug/L	200	<100
Mercury	ug/L	2	<0.2
Sulfide	ug/L	NS	<1
TC	ug/L	4300	<100
PCBs (EPA Method 8082)			
PCB-1016	ug/L	NS	<0.8
PCB-1221	ug/L	NS	<0.8
PCB-1232	ug/L	NS	<0.8
PCB-1242	ug/L	NS	<0.8
PCB-1248	ug/L	NS	<0.8
PCB-1254	ug/L	NS	<0.8
PCB-1260	ug/L	NS	<0.8
Pesticides (EPA Method 8081A)			
4,4'-DDD	ug/L	0.75	<0.032
4,4'-DDE	ug/L	0.32	<0.032
4,4'-DDT	ug/L	0.16	<0.032
Aldrin	ug/L	0.05	<0.032
Alpha-BHC	ug/L	0.038	<0.032
beta-BHC	ug/L	0.042	<0.032
Chlordane	ug/L	2	<0.032
delta-BHC	ug/L	1.1	<0.032
Dieldrin	ug/L	0.033	<0.032
Endosulfan I	ug/L	42	<0.032
Endosulfan II	ug/L	42	<0.032
Endosulfan sulfate	ug/L	NS	<0.032
Endrin	ug/L	2	<0.032
Endrin aldehyde	ug/L	2.1	<0.032
gamma-BHC (Lindane)	ug/L	0.2	<0.032
Heptachlor	ug/L	0.4	<0.032
Heptachlor epoxide	ug/L	0.2	<0.032
Methoxychlor	ug/L	40	<0.032
Toxaphene	ug/L	3	<2
Semivolatile Organics by GC/MS			
1,2,4,5-Tetrachlorobenzene	ug/L	2.3	<10
1,2,4-Trimethylbenzene	ug/L	NS	<10
1,3-Dinitrobenzene	ug/L	3	<10
1,4-Naphthoquinone	ug/L	NS	<10
1,4-Phenylenediamine	ug/L	NS	<10
1-Naphthylamine	ug/L	NS	<10
2,3,4,6-Tetrachlorophenol	ug/L	NS	<10
2,4,5-Trichlorophenol	ug/L	700	<10
2,4,6-Trichlorophenol	ug/L	16	<10
2,4-Dichlorophenol	ug/L	60	<10
2,4-Dimethylphenol	ug/L	140	<10
2,4-Dinitrophenol	ug/L	14	<20
2,4-Dinitrotoluene	ug/L	0.49	<10
2,6-Dichlorophenol	ug/L	NS	<10
2,6-Dinitrotoluene	ug/L	0.26	<10
2-Acetylaminofluorene	ug/L	NS	<10
2-Chloronaphthalene	ug/L	560	<10
2-Chlorophenol	ug/L	40	<10
2-Methylnaphthalene	ug/L	20	<10
2-Methylphenol (o-Cresol)	ug/L	30	<10
2-Naphthylamine	ug/L	0.057	<10
2-Nitroaniline	ug/L	60	<10
2-Nitrophenol	ug/L	NS	<10
3,3'-Dichlorobenzidine	ug/L	0.39	<10
3,3'-Dimethylbenzidine	ug/L	NS	<10
3/4-Methylphenol	ug/L	70	<10
3-Methylcholanthrene	ug/L	NS	<10
3-Nitroaniline	ug/L	NS	<10
4,6-Dinitro-2-methylphenol	ug/L	NS	<10
4-Aminobiphenyl	ug/L	0.0003	<10
4-Bromophenyl phenyl ether	ug/L	NS	<10
4-Chloro-3-methylphenol	ug/L	700	<10
4-Nitroaniline	ug/L	20	<10
4-Chlorophenyl phenyl ether	ug/L	NS	<10
4-Nitrophenol	ug/L	NS	<10
4-Nitroquinoline-1-oxide	ug/L	NS	<10
5-Nitro-o-toluidine	ug/L	NS	<10
7,12-Dimethylbenz(a)anthracene	ug/L	NS	<10
Acenaphthene	ug/L	420	<10
Acenaphthylene	ug/L	210	<10
Acetophenone	ug/L	NS	<10
Anthracene	ug/L	2100	<10
Benzo (a) anthracene	ug/L	0.18	<10
Benzo (a) pyrene	ug/L	0.2	<10
Benzo (b) fluoranthene	ug/L	0.18	<10
Benzo (g,h,i) perylene	ug/L	210	<10
Benzo (k) fluoranthene	ug/L	1.8	<10
Benzyl alcohol	ug/L	700	<10
Bis(2-chloroethoxy)methane	ug/L	NS	<10
Bis(2-chloroethyl) ether	ug/L	0.16	<10
Bis(2-chloroisopropyl) ether	ug/L	200	<10
Bis(2-ethylhexyl)phthalate	ug/L	6	<10
Butyl benzyl phthalate	ug/L	140	<10
Chlorobenzilate	ug/L	NS	<10
Chrysene	ug/L	18	<10
Diallate (cis or trans)	ug/L	NS	<10
Dibenz(a,h) anthracene	ug/L	0.018	<10
Dibenzofuran	ug/L	14	<10
Diethyl phthalate	ug/L	6600	<10
Dimethoate	ug/L	1.4	<10
Dimethyl phthalate	ug/L	NS	<10
Di-n-butyl phthalate	ug/L	700	<10
Di-n-octyl phthalate	ug/L	140	<10
Diphenyl	ug/L	7	<10
Diphenylamine	ug/L	180	<10
Disulfoton	ug/L	0.7	<10
Ethyl Methanesulfonate	ug/L	NS	<10
Famphur	ug/L	NS	<20
Fluoranthene	ug/L	280	<10
Fluorene	ug/L	280	<10
Hexachlorobenzene	ug/L	1	<10
Hexachlorobutadiene	ug/L	3	<10
Hexachlorocyclopentadiene	ug/L	50	<10
Hexachloroethane	ug/L	3	<10
Hexachlorophene	ug/L	NS	<10
Isodrin (1,2,3-cdl) pa rene	ug/L	0.18	<10
Isosafrole	ug/L	NS	<10
Kepone	ug/L	100	<10
Methapyrilene	ug/L	NS	<10
Methyl Methanesulfonate	ug/L	1.8	<10
Naphthalene	ug/L	14	<10
N-Nitrosodiethylamine	ug/L	NS	<10
N-Nitrosodiethylamine	ug/L	0.0054	<10
N-Nitrosodi-n-butylamine	ug/L	0.032	<10
N-Nitrosodi-n-propylamine	ug/L	NS	<10
N-Nitrosodiphenylamine	ug/L	16	<10
N-Nitrosomethylethylamine	ug/L	0.008	<10
N-Nitrosopiperidine	ug/L	NS	<10
N-Nitrosopyrrolidine	ug/L	0.083	<10
O,O,O-Triethylphosphorothioate	ug/L	NS	<10
O-Toluidine	ug/L	13	<10
p-Dimethylaminoazobenzene	ug/L	NS	<10
Pentachloronitrobenz	ug/L	NS	<10
Pentachlorophenol	ug/L	3	<10
Phenacetin	ug/L	NS	<10
Phenanthrene	ug/L	210	<10
Phenol	ug/L	2000	<10
Pronamide	ug/L	5.4	<10
Pyrene	ug/L	210	<10
Safrole	ug/L	NS	<10
Thionazin	ug/L	NS	<10
Volatile Organic Compounds			
1,1-Dichloroethane	ug/L	NS	<1
1,1,2-Trichloroethane	ug/L	70	<5
1,1-Dichloroethene	ug/L	600	<1
1,2-Dichloropropane	ug/L	NS	<1
1,2-Dichloropropene	ug/L	NS	<4
Acrolein	ug/L	NS	<10
Allyl chloride	ug/L	NS	<2
Benzene	ug/L	5000	<1
Bis(chloromethyl)ether	ug/L	0.006	<2
Ethyl Methacrylate	ug/L	NS	<5
Methacrylonitrile	ug/L	NS	<1
Methyl Methacrylate	ug/L	NS	<4
Naphthalene	ug/L	100	<5
Propionitrile	ug/L	NS	<10

Detections at or above the RL are shown in bold italics on gray background.
Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.
NS = No standard

Appendix B-1-2
Deep Wells

Black Hawk County Landfill
Appendix I Results
Monitoring Well P-213C

Parameter Name	Units	GPS	Oct-07	Jan-08	Apr-08	Jun-08	Sep-08	Feb-09	Aug-09	Mar-10	Sep-10	May-11	Nov-11	May-12	Dec-12	Apr-13	Oct-13	Apr-14	Sep-14	Mar-15	Sep-15	Mar-16	Oct-16	Mar-17	Sep-17	Apr-18	Sep-18	Apr-19	Oct-19	Nov-19	Apr-20	Aug-20	Sep-20	Mar-21	Nov-21	Feb-22	May-22	Nov-22	Apr-23	Oct-23	May-24	Oct-24	Jan-25
Appendix I Inorganics																																											
Total Suspended Solids	mg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<3.77	<1.6	***1.88***	***0.625 J***	***1.13 J***	<0.581	***2.75***	***3.25***	***0.875 J***	<0.638	***0.875 J***	<0.638	<1.7	<0.638	<0.638	<0.638	***4.88***	***2 J***	***2 J***	<0.638	<1.7	<1.7	<1.39	***3.13***	<3.7
Turbidity, Field	NTU	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	***3.827***	***0.3714***	***2.114***	***0.5283***	***0.2618***	***0.4618***	***2.446***	***3.593***	***1.453***	***2.18***	***0.47***	***0.43***	0	***3.15***	***2.11***	0	***0.04***	0	0	0	***0.42***	***0.75***	***0.66***	***1.57***	0
Turbidity, Lab	NTU	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.6	<0.7	***0.7 J***	<0.4	<0.4	<0.4	***1.3***	***1.3***	<0.4	<0.4	***0.52 J***	<0.4	<0.29	--	--	--	--	--	--	--	--	--	--	--	--
Antimony	µg/L	6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<2.73	***2.93 J***	<0.584	<0.271	<0.4	<0.4	***0.236 J***	<0.161	<0.161	<0.237	***0.461 J***	<0.185	<0.185	<0.42	<0.42	<0.53	<0.53	--	<0.58	--	<0.51	<1.1	<1.1	--	<0.69	***1.7 J***	<1	<1	<1	<1	--
Antimony, Dissolved	µg/L	NS	--	--	--	--	--	--	<6	<6	<6	<6	<2.73	<0.584	<0.584	<0.271	<0.4	<0.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	<1	***1.01***	<2	<1	<1	<1	<1	<8	<2	<0.6	<0.185	***2.13***	<2.72	<0.33	***0.768 J***	<0.945	<0.945	<0.945	<0.672	<0.672	<0.505	<0.505	<0.57	<0.57	<0.75	<0.75	--	<0.88	--	<0.88	<1.75	***2.39***	***6.73***	<0.75	***9.83***	<0.53	***0.723 J***	<0.53	***2.68***	--
Arsenic, Dissolved	µg/L	NS	--	--	--	--	--	--	<1	<5	<1	<3	<0.47	<0.185	<0.185	<2.72	<0.33	<0.33	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	***36.7***	***70.1***	***41.3***	***19.7***	***30.4***	***36.1***	***23.6***	***29.5***	***33.9***	***38***	***46.3***	***28.1***	***329***	***53.2***	***15.5***	***147***	***10.1***	***10***	***11***	***9.54***	***9.43***	***11.1***	***10.1***	***9.69***	***9***	***9.49***	***9.9***	--	***10.2***	--	***9.84***	***11***	***9.68***	--	***9.8***	***7.11***	***8.98***	***10.5***	***8.72***	***9.32***	--
Barium, Dissolved	µg/L	NS	--	--	--	--	--	--	***12.2***	***13.7***	***10.1***	***16.3***	***21***	***9.07 J***	***11.5***	***11.4***	***12.5***	***11.5***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.051	<0.169	***0.303 J***	<0.348	<0.08	***0.175 J***	<0.039	<0.039	<0.039	<0.221	<0.221	<0.125	<0.125	<0.19	<0.19	<0.27	<0.27	--	<0.27	--	<0.27	<0.27	<0.27	--	<0.27	<0.27	<0.33	<0.33	<0.33	<0.33	--
Beryllium, Dissolved	µg/L	NS	--	--	--	--	--	--	<1	<1	<1	<1	***0.059 J***	<0.169	<0.169	<0.348	<0.08	<0.08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	***0.242 J***	<0.195	***0.226 J***	<0.53	<0.1	***0.112 J***	<0.112	<0.112	<0.112	<0.0351	***0.04 J***	<0.0441	<0.0441	<0.06	<0.06	<0.077	***0.041 J***	--	***0.048 J***	--	<0.049	<0.051	<0.0511	--	<0.055	***0.061 J***	<0.1	<0.1	<0.1	<0.1	--
Cadmium, Dissolved	µg/L	NS	--	--	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.124	<0.195	<0.195	<0.53	<0.1	<0.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	<20	<20	***2.68***	<20	<20	<20	<20	<20	<20	<20	<1.81	***114***	***39.4***	***80.6***	***2.11***	***7.83***	<1.24	<1.24	<1.24	<0.355	***1.39 J***	<0.729	<0.729	<0.76	<0.76	***1 J***	<0.98	--	<1.1	--	***2.85 J***	<1.1	***31.1***	***90.1***	***1.89 J***	***93.7***	<1.1	***8.51***	<1.2	***36.4***	***52.7***
Chromium, Dissolved	µg/L	NS	--	--	--	--	--	--	<20	<20	<20	<20	<1.81	<1.81	<1.81	<2.09	***0.757 J***	<0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	9.83	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<1.55	***9.72 J***	***16.1 J***	***17.6***	***3.13***	***7.33***	***3.74***	***3.37***	***3.93***	***3.51***	***2.06***	***3.4***	***2.77***	***3.62***	***3.08***	***2.31***	***3.55***	***3.65***	***3.21***	***2.71***	***2.55***	***3.29***	***1.84***	***0.816***	***2.27***	***0.229 J***	***3.22***	***2.44***	***3.25***	***1.22***	--
Cobalt, Dissolved	µg/L	NS	--	--	--	--	--	--	<20	<20	<20	<20	<1.55	***2.66 J***	***3.54 J***	***5.36***	***2.69***	***3.49***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	1300	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	***13 J***	***8.76 J***	***26.1***	***19.3***	***1.65 J***	***6.08***	<0.485	<0.485	***0.62 J***	<1.22	<1.22	<2.19	<2.19	<1.6	<1.6	<2	<2	--	<3.2	--	<1.5	<1.4	<1.4	--	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	--
Copper, Dissolved	µg/L	NS	--	--	--	--	--	--	<20	<20	<20	<20	***11.2 J***	<1.51	<1.51	<0.85	***1.87 J***	<0.56	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<1	***3.32 J***	***9.48***	***8.68***	***0.207 J***	***1.68***	***0.184 J***	***0.12 J***	***0.111 J***	<0.211	<0.211	<0.324	<0.324	<0.25	<0.25	<0.27	<0.27	--	***0.437 J***	--	<0.11	<0.21	<0.21	--	<0.24	<0.24	<0.24	<0.24	<0.26	<0.26	--
Lead, Dissolved	µg/L	NS	--	--	--	--	--	--	<4	<4	<4	<4	<1	<0.821	<0.821	<1.04	<0.18	<0.18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	µg/L	722	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	***11.5 J***	***87.5***	***39.8 J***	***104***	***10.1***	***19.1***	***8.91***	***10.2***	***10.5***	***9.82***	***9.22***	***11.2***	***9.78***	***10.9***	***7.38 J***	***10.3***	***11***	***11.2***	***10.1***	--	***8.92***	***9.71***	***9.61***	--	***10.1***	***4.22 J***	***10.5***	***8.79***	***9.6***	***4.4 J***	--
Nickel, Dissolved	µg/L	NS	--	--	--	--	--	--	<50	<50	<50	<50	***9.11 J***	***13.5 J***	***6.97 J***	***26***	***10.2***	***11.8***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<1.69	<1.83	<1.83	<7.3	***1.06 J***	<0.7	<3.34	<3.34	<3.34	<0.63	<0.63	<0.928	<0.928	<0.9	<0.9	<1	<1	--	***1.14 J***	--	<1	<0.96	<0.96	--	<0.96	***2.14 J***	<1.4	<1.4	<1.4	<1.4	--
Selenium, Dissolved	µg/L	NS	--	--	--	--	--	--	<5	<5	<5	<5	<1.69	<1.83	<1.83	<7.3	<0.7	<0.7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	µg/L	100	<20	<20	<1	<20	<20	<20	<20	<20	<20	<20	<1.7	<1.7	<1.7	<0.395	<0.033	***0.0386 J***	<0.042	<0.042	***0.128 J***	<0.153	<0.153	<0.14	<0.14	<0.3	<0.3	<0.37	<0.37	--	<0.37	--	<0.37	<0.42	<0.42	--	<0.49	***1.15***	<0.5	<0.5	<0.5	<0.5	--
Silver, Dissolved	µg/L	NS	--	--	--	--	--	--	<20	<20	<20	<20	<1.7	<1.7	***3.51 J***	<0.395	<0.033	<0.033	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<0.84	<0.523	<0.523	***0.374 J***	***0.375 J***	***0.456 J***	***0.321 J***	***0.18 J***	***0.225 J***	***0.276 J***	***0.263 J***	***0.211 J***	***0.167 J***	<0.17	***0.353 J***	***0.365 J***	***0.427 J***	--	***0.399 J***	--	<0.26	***0.318 J***	***0.271 J***	--	***0.343 J***	***0.429 J***	<0.26	<0.26	<0.57	<0.57	--
Thallium, Dissolved	µg/L	NS	--	--	--	--	--	--	<2	<2	<2	<2	<0.84	<0.523	<0.523	***0.273 J***	***0.357 J***	***0.397 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium	µg/L	35	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<2.1	***6.88 J***	***18.9 J***	<4.17	***0.605 J***	***4.57 J***	<0.449	<0.449	<0.449	<0.255	<0.255	<0.84	<0.84	<0.52	<0.52	<0.82	<0.82	--	<0.82	--	<0.85	<1.1	<1.1	--	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	--
Vanadium, Dissolved	µg/L	NS	--	--	--	--	--	--	<50	<50	<50	<50	<2.1	***3.62 J***	<2.1	<4.17	<0.5	<0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	2000	***61.4***	***25.1***	***30.5***	***100***	***39.5***	***51.9***	***72.3***	***71.8***	***54.4***	<20	<9.11	***23.1***	***166***	***17.3 J***	***5.38 J***	***19.7***	<6.95	<6.95	<6.95	***7.38 J***	<5.21	<11.5	<11.5	<10	<10	<10	<10	--	<10	--	<10	<10	<10	--	<10	<10	<6.4	<6.4	<9.7	<9.7	--
Zinc, Dissolved	µg/L	NS	--	--	--	--	--	--	***63.5***	***83.5***	***40***	<20	<9.11	<9.11	***40.7***	***3.54 J***	***5.61 J***	***3.65 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Appendix I Organics																																											
1,1,1,2-Tetrachloroethane	µg/L	70	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.38	<0.38	<0.38	--	<0.38	--	<0.38	<0.38	<0.38	--	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	--
1,1,1-Trichloroethane	µg/L	200	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.19	<0.19	<0.19	--	<0.19	--	<0.19	<0.19	<0.19	--	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	--
1,1,2,2-Tetrachloroethane	µg/L	0.3	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.47	<0.47	<0.47	--	<0.47	--	<0.47	<0.47	<0.47	--	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	--
1,1,2-Trichloroethane	µg/L	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.45	<0.45	<0.45	--	<0.45	--	<0.45	<0.45	<0.45	--	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	--
1,1-Dichloroethane	µg/L	140	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.22	<0.22	<0.22	--	<0.22	--	<0.22	<0.22	<0.22	--	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--
1,1-Dichloroethylene	µg/L	7	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.56	<0.56	<0.56	--	<0.56	--	<0.56	<0.56	<0.56	--	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	--
1,2,3-Trichloropropane	µg/L	0.0058	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.59	<0.59	<0.59	--	<0.59	--	<0.59	<0.59	<0.59	--	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	--
1,2-Dibromo-3-chloropropane	µg/L	0.2	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.2	<1.2	<1.2	--	<1.2	--	<1.2	<1.2	<1.2	--	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	--
1,2-Dibromoethane	µg/L	0.05	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.34	<0.34	<0.34	--	<0.34	--	<0.34	<0.34	<0.34	--	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	--
1,2-Dichlorobenzene	µg/L	600	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.14	<0.14	<0.14	***0.170 J***	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.37	<0.37	<0.37	--	<0.37	--	<0.37	<0.37	<0.37	--	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	--
1,2-Dichloroethane	µg/L	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.39	<0.39	<0.39	--	<0.39	--	<0.39	<0.39	<0.39	--	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	--
1,2-Dichloropropane	µg/L	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.27	<0.27	<0.27	--	<0.27	--	<0.27	<0.27	<0.27	--	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	--
1,4-Dichlorobenzene	µg/L	75	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.23	<0.23	<0.23	--	<0.23	--	<0.23	<0.23	<0.23	--	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	--
2-Butanone	µg/L	4000	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<1.04	<1.04	<1.04	<1.04	<2.1	--	<2.1	--	<2.1	<2.1	<2.1	--	<2.1	***2.3 J***	<2.1	<2.1	<2.1	<2.1	--
2-Hexanone	µg/L	NS	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	--	<2	--	<2	<2	<2	--	<2	<2	<2	<2	<2	<2	--
4-Methyl-2-pentanone	µg/L	560	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<2.1	<2.1	<2.1	--	<2.1	--	<2.1	<2.1	<2.1	--	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	--
Acetone	µg/L	6300	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<1.79	<1.79	<1.79	<1.79	<1.79	<1.79	<1.79	<1.79	<1.79	<1.79	<1.79	***2.75 J***	***3.47 J***	***1.88 J***	<3.1	<3.1	***3.88 J***	--	<3.1	--	<3.1	<3.1	<3.1	--	***10.7***	<3.1	<3.1	<3.1	<3.1	<3.1	--
Acrylonitrile	µg/L	0.32	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<2.2	<2.2	<2.2	--	<2.2	--	<2.2	<2.2	<2.2	--	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	--
Benzene	µg/L	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.22	<0.22	<0.22	--	<0.22	--	<0.22	<0.22	<0.22	--	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--
Bromochloromethane	µg/L	90	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.54	<0.54	<0.54	--	<0.54	--	<0.54	<0.54	<0.54	--	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	--
Bromodichloromethane	µg/L	80	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.39	<0.39	<0.39	--	<0.39	--	<0.39	<0.39	<0.39	--	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	--
Bromomethane	µg/L	10	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<1.1	<1.1	<1.1	--	<1.1	--	<1.1	<1.1	<1.1	--	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	--
Carbon disulfide	µg/L	700	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<0.15	***0.16 J***	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.45	<0.45	<0.45	--	<0.45	--	<0.45	<0.45	<0.45	--	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	--
Carbon Tetrachloride	µg/L	5	<2	<2	<2	<2	<2	<2	<2	<2	<2	<5	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.65	<0.65	<0.65	--	<0.65	--	<0.65	<0.65	<0.65	--	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	--
Chlorobenzene	µg/L	100	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.4	<0.4	<0.4	--	<0.4	--	<0.4	<0.4	<0.4	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	--
Chloroethane	µg/L	2800	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.79	<0.79	<0.79	--	<0.79	--	<0.79	<0.79	<0.79	--	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	--
Chloromethane	µg/L	NS	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.61	<0.61	<0.61	--	<0.61	--	<0.61	<0.61	<0.61	--	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	--
cis-1,2-Dichloroethylene	µg/L	70	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.21	<0.21	<0.21	--	***0.264 J***	--	<0.21	<0.21	<0.21	--	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	--
cis-1,3-Dichloropropene	µg/L	NS	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.25	<0.25	<0.25	--	<0.25	--	<0.25	<0.25	<0.25	--	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	--
Dibromochloromethane	µg/L	80	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.75	<0.75	<0.75	--	<0.75	--	<0.75	<0.75	<0.75	--	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	--
Dibromomethane	µg/L	70	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.33	<0.33	<0.33	--	<0.33	--	<0.33	<0.33	<0.33	--	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	--
Dichloromethane	µg/L	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<0.17	<0.17	***0.29 J***	<0.17	<0.17	***0.516 J***	<0.17	<0.17	<0.17	***0.219 J***	<0.17	***0.424 J***	<0.17	<0.17	<1.7	<1.7	<1.7	--	<1.7	--	<1.7	<1.7	<1.7	--	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	--
Ethylbenzene	µg/L	700	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.31	<0.31	<0.31	--	<0.31	--	<0.31	<0.31	<0.31	--	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	--
Iodomethane	µg/L	NS	<10	<10	<10	<10	<10	<10	<20	<10	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<7	<7	<7	--	<7	--	<7	<7	<7	--	<7	<7	<7	<7	<7	<7	--
Styrene	µg/L	100	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1

Black Hawk County Landfill
Appendix II Results
Monitoring Well P-213C

Parameter Name	Unit	May-22	Mar-24
Alcohols/Glycols by GC			
Acetonitrile	ug/L	<404	<808
Isobutanol	ug/L	<203	<400
Herbicides (GC)			
2,4,5-T	ug/L	<0.0759	<0.0748
2,4-D	ug/L	<0.292	<0.286
Silvex (2,4,5-TP)	ug/L	<0.0117	<0.0252
Inorganics			
Cyanide	ug/L	<4.3	<5.5
Mercury	ug/L	<0.11	<0.11
Sulfide	ug/L	<231	<1410
Tin	ug/L	<3	<3.3
PCBs (EPA Method 8082)			
PCB-1016	ug/L	<0.17	<0.202
PCB-1221	ug/L	<0.17	<0.202
PCB-1232	ug/L	<0.17	<0.202
PCB-1242	ug/L	<0.17	<0.202
PCB-1248	ug/L	<0.11	<0.133
PCB-1254	ug/L	<0.11	<0.133
PCB-1260	ug/L	<0.11	<0.133
Pesticides (EPA Method 8081A)			
4,4'-DDD	ug/L	<0.027	<0.0321
4,4'-DDE	ug/L	<0.027	<0.0321
4,4'-DDT	ug/L	<0.042	<0.05
Aldrin	ug/L	<0.032	<0.0381
alpha-BHC	ug/L	<0.028	<0.0345
beta-BHC	ug/L	<0.037	<0.044
Chlordane	ug/L	<0.81	<0.964
delta- BHC	ug/L	<0.027	<0.0321
Dieldrin	ug/L	<0.026	<0.031
Endosulfan I	ug/L	<0.033	<0.0393
Endosulfan II	ug/L	<0.029	<0.0345
Endosulfan sulfate	ug/L	<0.03	<0.0357
Endrin	ug/L	<0.026	<0.031
Endrin aldehyde	ug/L	<0.029	<0.0345
gamma-BHC (Lindane)	ug/L	<0.036	<0.0429
Heptachlor	ug/L	<0.033	<0.0393
Heptachlor epoxide	ug/L	<0.029	<0.0345
Methoxychlor	ug/L	<0.043	<0.0488
Toxaphene	ug/L	<0.69	<0.821
Semivolatile Organics by GC/MS			
1,2,4,5-Tetrachlorobenzene	ug/L	<0.54	<0.614
1,2,3-Trichlorobenzene	ug/L	<2.3	<2.61
1,2-Dinitrobenzene	ug/L	<3.2	<3.68
1,4-Naphthoquinone	ug/L	<3.6	<4.09
1,4-Phenylenediamine	ug/L	<1.9	<2.16
1-Naphthylamine	ug/L	<2.3	<2.61
2,3,4,6-Tetrachlorophenol	ug/L	<5.3	<6.02
2,4,5-Trichlorophenol	ug/L	<5.3	<6.02
2,4,6-Trichlorophenol	ug/L	<5	<5.68
2,4-Dichlorophenol	ug/L	<0.85	<0.966
2,4-Dimethylphenol	ug/L	<0.58	<0.659
2,4-Dinitrophenol	ug/L	<13	<14.8
2,4-Dinitrotoluene	ug/L	<6.4	<7.27
2,6-Dichlorophenol	ug/L	<0.69	<0.784
2,6-Dinitrotoluene	ug/L	<0.52	<0.591
2-Acetylaminofluorene	ug/L	<2.7	<3.07
2-Chloronaphthalene	ug/L	<0.64	<0.727
2-Chlorophenol	ug/L	<0.54	<0.614
2-Methylnaphthalene	ug/L	<0.59	<0.67
2-Methylphenol (o-Cresol)	ug/L	<0.65	<0.739
2-Naphthylamine	ug/L	<2.1	<2.39
2-Nitroaniline	ug/L	<5.9	<6.7
2-Nitrophenol	ug/L	<6.8	<7.73
3,3'-Dichlorobenzidine	ug/L	<1.4	<1.59
3,3'-Dimethylbenzidine	ug/L	<1.5	<1.7
3/4-Methylphenol	ug/L	<0.7	<0.795
3-Methylcholanthrene	ug/L	<0.32	<0.364
3-Nitroaniline	ug/L	<2.7	<3.07
4,6-Dinitro-2-methylphenol	ug/L	<6.9	<7.84
4-Aminobiphenyl	ug/L	<2.2	<2.5
4-Bromophenyl phenyl ether	ug/L	<0.7	<0.795
4'-Nitro-3-methylphenol	ug/L	<0.84	<0.955
4-Chloroaniline	ug/L	<0.62	<0.705
4-Chlorophenyl phenyl ether	ug/L	<0.69	<0.784
4-Nitroaniline	ug/L	<1.1	<1.48
4-Nitrophenol	ug/L	<7.6	<8.64
5-Nitro-o-toluidine	ug/L	<2.8	<3.18
7,12-Dimethylbenz (a) anthracene	ug/L	<1.9	<2.16
Acenaphthene	ug/L	<0.64	<0.727
Acenaphthylene	ug/L	<0.72	<0.818
Acetophenone	ug/L	<0.69	<0.784
Anthracene	ug/L	<0.87	<0.989
Benzo (a) anthracene	ug/L	<0.85	<0.966
Benzo (a) pyrene	ug/L	<0.1	<0.2
Benzo (b) fluoranthene	ug/L	<0.9	<0.9
Benzo (g,h,i) perylene	ug/L	<0.3	<0.35
Benzo (k) fluoranthene	ug/L	<2.2	<2.5
Benzyl alcohol	ug/L	<1.3	<1.48
Bis(2-chloroethoxy) methane	ug/L	<0.76	<0.864
Bis(2-chloroethyl)ether	ug/L	<0.82	<0.932
Bis(2-chloroisopropyl) ether	ug/L	<0.54	<0.614
Bis(2-ethylhexyl)phthalate	ug/L	<5.5	<6.25
Butyl benzyl phthalate	ug/L	<5.4	<6.14
Chlorobenzilate	ug/L	<3.6	<4.09
Chrysene	ug/L	<0.87	<0.989
Diallate (cis or trans)	ug/L	<4	<4.55
Dibenzo (a,h) anthracene	ug/L	<3.9	<4.43
Dibenzofuran	ug/L	<0.74	<0.841
Diethyl phthalate	ug/L	<1.7	<1.93
Dimethoate	ug/L	<3.6	<4.09
Dimethyl phthalate	ug/L	<1	<1.14
Di-n-butyl phthalate	ug/L	<5.6	<6.36
Di-n-octyl phthalate	ug/L	<7	<7.95
Diphenyl	ug/L	<2.4	<2.73
Diphenylamine	ug/L	<8	<9.09
Disulfoton	ug/L	<2.4	<2.73
Ethyl Methanesulfonate	ug/L	<3.6	<4.09
Famphur	ug/L	<3.8	<4.32
Fluoranthene	ug/L	<1.7	<1.93
Fluorene	ug/L	<0.79	<0.898
Hexachlorobenzene	ug/L	<0.7	<0.795
Hexachlorobutadiene	ug/L	<0.86	<0.977
Hexachlorocyclopentadiene	ug/L	<5.1	<5.8
Hexachloroethane	ug/L	<0.97	<1.1
Hexachloropropene	ug/L	<2.6	<2.95
Indeno (1,2,3-cd) pyrene	ug/L	<4.2	<4.77
Isodrin	ug/L	<4.7	<5.34
Isophorone	ug/L	<0.93	<1.06
Isosafrole	ug/L	<2.3	<2.61
Kepone	ug/L	<1	<1.14
Methapyrilene	ug/L	<0.76	<0.864
Methyl Methanesulfonate	ug/L	<3.3	<3.75
Nitrobenzene	ug/L	<0.8	<0.909
N-Nitrosodiethylamine	ug/L	<1.4	<1.86
N-Nitrosodimethylamine	ug/L	<0.72	<0.818
N-Nitroso-di-n-butylamine	ug/L	<3.9	<4.43
N-Nitroso-di-n-propylamine	ug/L	<0.92	<1.05
N-Nitrosodiphenylamine	ug/L	<0.75	<0.852
N-Nitrosomethylethylamine	ug/L	<4.9	<5.57
N-Nitrosopiperidine	ug/L	<2.7	<3.07
N-Nitrosopyrrolidine	ug/L	<3.6	<4.09
O,O,O-Triethyl phosphorothioate	ug/L	<3.2	<3.64
o-Toluidine	ug/L	<2.9	<3.3
p-(Dimethylamino)azobenzene	ug/L	<2.2	<2.5
Parathion-ethyl	ug/L	<2.2	<2.5
Parathion-methyl	ug/L	<2.3	<2.61
Pentachlorobenzene	ug/L	<2.8	<3.18
Pentachloronitrobenzene	ug/L	<5.8	<6.59
Pentachlorophenol	ug/L	<9.6	<10.9
Phenacetin	ug/L	<1.9	<2.16
Phenanthrene	ug/L	<0.79	<0.898
Phenol	ug/L	<1.1	<1.25
Pronamide	ug/L	<3.2	<3.64
Pyrene	ug/L	<2.7	<3.07
Safrole	ug/L	<0.79	<0.898
Thionazin	ug/L	<2.8	<3.18
Volatile Organic Compounds			
1,1-Dichloropropene	ug/L	<5.5	<5.98
1,2,4-Trichlorobenzene	ug/L	<0.43	<0.43
1,2,4-Trimethylbenzene	ug/L	<0.75	<0.75
1,3-Dichlorobenzene	ug/L	<0.3	<0.3
1,3-Dichloropropane	ug/L	<0.4	<0.4
2,2-Dichloropropane	ug/L	<0.69	<0.69
Acrylonitrile	ug/L	<3.6	<3.6
Allyl chloride	ug/L	<0.7	<0.7
Chloroprene	ug/L	<0.23	<0.23
Dichlorodifluoromethane	ug/L	<0.25	<0.25
Ethyl Methacrylate	ug/L	<0.68	<0.68
Methacrylonitrile	ug/L	<3.3	<3.3
Methyl Methacrylate	ug/L	<0.76	<0.76
Naphthalene	ug/L	<3	<3
Propionitrile	ug/L	<3.4	<3.4

Detection at or above the RL are shown in bold italics on gray background.

Detection greater than the MDL but less than the RL are shown in bold italics on white background with a J.
ND = No standard

Black Hawk County Landfill
Appendix I Results
Monitoring Well P-214C/P-214CR

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Black Hawk County Landfill
Appendix II Results
Monitoring Well P-214C

Parameter Name	Units	GPS	Dec. 2012	Feb. 2013	Apr. 2013	Jun. 2013	Aug. 2013	Oct. 2013	Jan. 2014	Apr. 2014	Jun. 2014	Mar. 2015	Sep. 2015	Jan. 2016	Mar. 2016	Oct. 2016
Alcohols/Glycols by GC																
Acetonitrile	ug/L	NS	<126	--	--	--	--	<126	--	--	--	--	<126	--	--	<126
Isobutanol	ug/L	2100	<177	--	--	--	--	<177	--	--	--	--	<177	--	--	<177
Herbicides (GC)																
2,4,5-T	ug/L	70	<0.44	--	--	--	--	<0.464	--	--	--	--	<0.447	--	--	<0.492
2,4-D	ug/L	70	<0.47	--	--	--	--	3.4	<0.488	<0.491	<0.516	<0.564	<0.48	--	<0.5	<0.528
Silvex (2,4,5-TP)	ug/L	50	<0.29	--	--	--	--	*0.384 J*	--	--	--	--	<0.298	--	--	<0.326
Inorganics																
Cyanide	ug/L	200	5.98	<5.12	<5.12	<5.12	<1.81	<1.81	--	--	--	--	<3.04	--	<3.52	<3.52
Mercury	ug/L	2	<0.025	--	--	--	--	<0.025	--	--	--	--	<0.0909	--	--	<0.142
Sulfide	ug/L	NS	*440 J*	<230	2960	*733 J*	<128	*149 J*	--	--	--	--	*703 J*	--	--	<180
Tin	ug/L	4200	<5.7	--	--	--	--	<5.77	--	--	--	--	<1.8	--	--	<0.82
PCBs (EPA Method 8082)																
PCB-1016	ug/L	NS	<0.0434	--	--	--	--	<0.0443	--	--	--	--	<0.0482	--	--	<0.0472
PCB-1221	ug/L	NS	<0.16	--	--	--	--	<0.163	--	--	--	--	<0.178	--	--	<0.174
PCB-1232	ug/L	NS	<0.11	--	--	--	--	<0.112	--	--	--	--	<0.122	--	--	<0.12
PCB-1242	ug/L	NS	<0.13	--	--	--	--	<0.133	--	--	--	--	<0.144	--	--	<0.141
PCB-1248	ug/L	NS	<0.11	--	--	--	--	<0.112	--	--	--	--	<0.122	--	--	<0.12
PCB-1254	ug/L	NS	<0.082	--	--	--	--	<0.0839	--	--	--	--	<0.102	--	--	<0.1
PCB-1260	ug/L	NS	<0.044	--	--	--	--	<0.0449	--	--	--	--	<0.0489	--	--	<0.0478
Pesticides (EPA Method 8081A)																
4,4'-DDD	ug/L	0.73	<0.18	--	--	--	--	<0.00186	--	--	--	--	*0.00211 J*	<0.018	--	<0.0101
4,4'-DDE	ug/L	0.53	<0.21	--	--	--	--	<0.00216	--	--	--	--	<0.00214	--	--	<0.0118
4,4'-DDT	ug/L	0.51	<0.38	--	--	--	--	<0.00392	--	--	--	--	<0.00388	--	--	<0.0213
Aldrin	ug/L	0.01	<0.45	--	--	--	--	<0.00464	--	--	--	--	<0.00459	--	--	<0.0253
alpha-BHC	ug/L	0.0108	<0.17	--	--	--	--	<0.00175	--	--	--	--	<0.00177	--	--	<0.00963
beta-BHC	ug/L	0.042	<0.48	--	--	--	--	*0.00935 J*	<0.00511	<0.00511	<0.00511	<0.0161	<0.0049	--	--	<0.027
Chlordane	ug/L	2	<0.4	--	--	--	--	<0.0366	--	--	--	--	<0.0413	--	--	<0.36
delta- BHC	ug/L	2.1	<0.23	--	--	--	--	*0.00339 J*	<0.00245	<0.00245	<0.00245	<0.0125	<0.00235	--	--	<0.0129
Dieldrin	ug/L	0.011	<0.2	--	--	--	--	<0.00206	--	--	--	--	<0.00204	--	--	<0.0112
Endosulfan I	ug/L	42	<0.2	--	--	--	--	<0.00208	--	--	--	--	<0.00204	--	--	<0.0112
Endosulfan II	ug/L	42	<0.19	--	--	--	--	<0.00196	--	--	--	--	<0.00194	--	--	<0.0107
Endosulfan sulfate	ug/L	NS	<0.25	--	--	--	--	<0.00258	--	--	--	--	<0.00255	--	--	<0.014
Endrin	ug/L	2	<0.19	--	--	--	--	<0.00196	--	--	--	--	<0.00194	--	--	<0.0107
Endrin aldehyde	ug/L	2.1	<0.73	--	--	--	--	<0.00753	--	--	--	--	<0.00745	--	--	<0.041
gamma-BHC (Lindane)	ug/L	0.2	<0.19	--	--	--	--	<0.00196	--	--	--	--	<0.00194	--	--	<0.0107
Heptachlor	ug/L	0.4	<0.26	--	--	--	--	0.152	<0.00277	<0.00277	<0.00277	<0.0141	<0.00265	--	<0.0285	<0.0146
Heptachlor epoxide	ug/L	0.2	<0.61	--	--	--	--	<0.00629	--	--	--	--	<0.00622	--	--	<0.0343
Methoxychlor	ug/L	40	<0.23	--	--	--	--	<0.00219	--	--	--	--	<0.00214	--	--	<0.0118
Toxaphene	ug/L	3	<5.8	--	--	--	--	<0.0598	--	--	--	--	<0.0592	--	--	<0.326
Semivolatile Organics by GC/MS																
1,2,4,5-Tetrachlorobenzene	ug/L	2.1	<0.12	--	--	--	--	<0.129	--	--	--	--	<0.125	--	--	<0.126
1,3,5-Trinitrobenzene	ug/L	NS	<1.28	--	--	--	--	<1.38	--	--	--	--	<1.33	--	--	<1.34
1,3-Dinitrobenzene	ug/L	1	<0.17	--	--	--	--	<0.183	--	--	--	--	<0.177	--	--	<0.177
1,4-Naphthoquinone	ug/L	NS	<0.14	--	--	--	--	<0.151	--	--	--	--	<0.146	--	--	<0.146
1,4-Phenylenediamine	ug/L	NS	<8.4	--	--	--	--	<9.03	--	--	--	--	<8.75	--	--	<8.75
1-Naphthylamine	ug/L	NS	<0.24	--	--	--	--	<0.258	--	--	--	--	<0.25	--	--	<0.25
2,3,4,6-Tetrachlorophenol	ug/L	NS	<9.2	--	--	--	--	<9.215	--	--	--	--	<8.398	--	--	<8.398
2,4,5-Trichlorophenol	ug/L	700	<0.32	--	--	--	--	<0.344	--	--	--	--	<0.333	--	--	<0.333
2,4,6-Trichlorophenol	ug/L	35	<0.22	--	--	--	--	<0.237	--	--	--	--	<0.229	--	--	<0.229
2,4-Dichlorophenol	ug/L	20	<0.15	--	--	--	--	<0.161	--	--	--	--	<0.156	--	--	<0.156
2,4-Dinethylphenol	ug/L	100	<0.21	--	--	--	--	*0.405 J*	<0.221	<0.214	<0.231	<0.291	<0.219	--	--	<0.219
2,4-Dinitrophenol	ug/L	14	<1.34	--	--	--	--	<1.44	--	--	--	--	<1.4	--	--	<1.4
2,4-Dinitrotoluene	ug/L	0.25	<0.19	--	--	--	--	<0.204	--	--	--	--	<0.198	--	--	<0.198
2,6-Dichlorophenol	ug/L	NS	<0.22	--	--	--	--	<0.237	--	--	--	--	<0.229	--	--	<0.229
2,6-Dinitrotoluene	ug/L	0.16	<0.24	--	--	--	--	<0.258	--	--	--	--	<0.25	--	--	<0.25
2-Acetylaminofluorene	ug/L	NS	<0.28	--	--	--	--	<0.301	--	--	--	--	<0.292	--	--	<0.292
2-Chloronaphthalene	ug/L	560	<0.23	--	--	--	--	<0.247	--	--	--	--	<0.24	--	--	<0.24
2-Chlorophenol	ug/L	40	<0.15	--	--	--	--	<0.161	--	--	--	--	<0.156	--	--	<0.156
2-Methylnaphthalene	ug/L	28	<0.19	--	--	--	--	<0.204	--	--	--	--	<0.198	--	--	<0.198
2-Methylphenol (o-Cresol)	ug/L	35	<0.18	--	--	--	--	*1.26 J*	<0.189	<0.184	<0.198	<0.186	<0.188	--	--	<0.188
2-Naphthylamine	ug/L	0.1197	<0.22	--	--	--	--	<0.237	--	--	--	--	<0.229	--	--	<0.229
2-Nitroaniline	ug/L	NS	<0.23	--	--	--	--	<0.247	--	--	--	--	<0.24	--	--	<0.24
2-Nitrophenol	ug/L	NS	<0.16	--	--	--	--	<0.172	--	--	--	--	<0.167	--	--	<0.167
3,3'-Dichlorobenzidine	ug/L	0.39	<0.46	--	--	--	--	<0.495	--	--	--	--	<0.479	--	--	<0.479
3,3'-Dimethylbenzidine	ug/L	NS	<0.21	--	--	--	--	<0.226	--	--	--	--	<0.219	--	--	<0.219
3&4-Methylphenol	ug/L	70	<0.18	--	--	--	--	*0.951 J*	<0.189	<0.184	<0.198	<0.186	<0.188	--	--	<0.188
3-Methylcholanthrene	ug/L	NS	<0.313	--	--	--	--	<0.333	--	--	--	--	<0.323	--	--	<0.323
3-Nitroaniline	ug/L	NS	<0.22	--	--	--	--	<0.237	--	--	--	--	<0.229	--	--	<0.229
4,6-Dinitro-2-methylphenol	ug/L	NS	<2.22	--	--	--	--	<2.39	--	--	--	--	<2.31	--	--	<2.31
4-Aminobiphenyl	ug/L	0.0093	<0.3	--	--	--	--	<0.323	--	--	--	--	<0.313	--	--	<0.313
4-Bromophenyl phenyl ether	ug/L	NS	<0.29	--	--	--	--	<0.312	--	--	--	--	<0.302	--	--	<0.302
4-C Nitro-3-methylphenol	ug/L	560	<0.19	--	--	--	--	<0.204	--	--	--	--	<0.198	--	--	<0.198
4-Chloroaniline	ug/L	28	<0.14	--	--	--	--	<0.151	--	--	--	--	<0.146	--	--	<0.146
4-Chlorophenyl phenyl ether	ug/L	NS	<0.25	--	--	--	--	<0.269	--	--	--	--	<0.26	--	--	<0.26
4-Nitroaniline	ug/L	NS	<0.32	--	--	--	--	<0.344	--	--	--	--	<0.333	--	--	<0.333
4-Nitrophenol	ug/L	60	<0.12	--	--	--	--	<0.129	--	--	--	--	<0.125	--	--	<0.125
5-Nitro-o-toluidine	ug/L	NS	<0.17	--	--	--	--	<0.183	--	--	--	--	<0.177	--	--	<0.177
7,12-Dimethylbenz (a) anthracene	ug/L	NS	<0.25	--	--	--	--	<0.269	--	--	--	--	<0.26	--	--	<0.26
Acenaphthene	ug/L	420	<0.3	--	--	--	--	<0.323	--	--	--	--	<0.313	--	--	<0.313
Acenaphthylene	ug/L	210	<0.21	--	--	--	--	<0.226	--	--	--	--	<0.219	--	--	<0.219
Acetophenone	ug/L	NS	<0.22	--	--	--	--	<0.237	--	--	--	--	<0.229	--	--	<0.229
Anthracene	ug/L	2100	<0.17	--	--	--	--	<0.183	--	--	--	--	<0.177	--	--	<0.177
Benzo (a) anthracene	ug/L	0.24	<0.24	--	--	--	--	<0.258	--	--	--	--	<0.25	--	--	<0.25
Benzo (a) pyrene	ug/L	0.2	<0.25	--	--	--	--	<0.269	--	--	--	--	<0.26	--	--	<0.26
Benzo (b) fluoranthene	ug/L	0.24	<0.31	--	--	--	--	<0.333	--	--	--	--	<0.323	--	--	<0.323
Benzo (g,h,i) perylene	ug/L	21	<0.22	--	--	--	--	<0.247	--	--	--	--	<0.24	--	--	<0.24
Benzo (k) fluoranthene	ug/L	2.4	<0.2	--	--	--	--	<0.215	--	--	--	--	<0.208	--	--	<0.208
Benzyl alcohol	ug/L	700	<0.18	--	--	--	--	<0.194	--	--	--	--	<0.188	--	--	<0.188
Bis(2-chloroethoxy)methane	ug/L	NS	<0.26	--	--	--	--	<0.28	--	--	--	--	<0.271	--	--	<0.271
Bis(2-chloroethyl)ether	ug/L	0.16	<0.18	--	--	--	--	<0.194	--	--	--	--	<0.188	--	--	<0.188
Bis(2-chloroisopropyl) ether	ug/L	300	<0.18	--	--	--	--	<0.194	--	--	--	--	<0.188	--	--	<0.188
Bis(2-ethylhexyl)phthalate	ug/L	6	*0.792 J*	<0.402	<0.39	*0.869 J*	*1.44 J*	<0.419	--	--	--	<0.402	<0.406	--	--	<0.406
Butyl benzyl phthalate	ug/L	140	<0.16	--	--	--	--	<0.366	--	--	--	--	<0.354	--	--	<0.354
Chlorobenzilate	ug/L	NS	<0.21	--	--	--	--	<0.226	--	--	--	--	<0.219	--	--	<0.219
Chrysene	ug/L	24	<0.29	--	--	--	--	<0.312	--	--	--	--	<0.302	--	--	<0.302
Diallate (cis or trans)	ug/L	NS	<0.23	--	--	--	--	<0.247	--	--	--	--	<0.24	--	--	<0.24
Dibenzo (a,h) anthracene	ug/L	0.0324	<0.25	--	--	--	--	<0.269	--	--	--	--	<0.26	--	--	<0.26
Dibenzofuran	ug/L	7	<0.24	--	--	--	--	<0.258	--	--	--	--	<0.25	--	--	<0.25
Diethyl phthalate	ug/L	5600	<0.28	--	--	--	--	<0.3	--	--	--	--	<0.273	--	--	<0.273
Dimethoate	ug/L	1.4	<0.27	--	--	--	--	<0.29	--	--	--	--	<0.281	--	--	<0.281
Dimethyl phthalate	ug/L	NS	<0.23	--	--	--	--	<0.247	--	--	--	--	<0.24	--	--	<0.24
Di-n-butyl phthalate	ug/L	700	<0.51	--	--	--	--	<0.548	--	--	--	--	<0.531	--	--	<0.531
Di-n-octyl phthalate	ug/L	140	<0.23	--	--	--	--	<0.247	--	--	--	--	<0.24	--	--	*1.68 J*
Dinoseb	ug/L	7	<0.43	--	--	--	--	<0.462	--	--	--	--	<0.448	--	--	<0.448
Diphenylamine	ug/L	189	<0.66	--	--	--	--	<0.71	--	--	--	--	<0.688	--	--	<0.688
Disulfoton	ug/L	0.7	<0.29	--	--	--	--	<0.312	--	--	--	--	<0.302	--	--	<0.302
Ethyl Methanesulfonate	ug/L	NS	<0.15	--	--	--	--	<0.161	--	--	--	--	<0.156	--	--	<0.156
Famphur	ug/L	NS	<0.47	--	--	--	--	<0.505	--	--	--	--	<0.49	--	--	<0.49
Fluoranthene	ug/L	280	<0.33	--	--	--	--	<0.355	--	--	--	--	<0.344	--	--	<0.344
Fluorene	ug/L	280	<0.29	--	--	--	--	<0.312	--	--	--	--	<0.302	--	--	<0.302
Hexachlorobenzene	ug/L	1	<0.27	--	--	--	--	<0.29	--	--	--	--	<0.281	--	--	<0.281
Hexachlorobutadiene	ug/L	1	<0.14	--	--	--	--	<0.14	--	--	--	--	<0.135	--	--	<0.135
Hexachloro cyclopentadiene	ug/L	50	<1.89	--	--	--	--	<2.03	--	--	--	--	<1.97	--	--	<1.97
Hexachloroethane	ug/L	1	<0.14	--	--	--	--	<0.14	--	--	--	--	<0.135	--	--	<0.135
Hexachloropropene	ug/L	NS	<1.64	--	--	--	--	<1.76	--	--	--	--	<1.71	--	--	<1.71
Indeno (1,2,3-cd) pyrene	ug/L	0.24	<0.24	--	--	--	--	<0.258	--	--	--	--	<0.25	--	--	<0.25
Isodrin	ug/L	NS	<0.38	--	--	--	--	<0.409	--	--	--	--	<0.396	--	--	<0.396
Isophorone	ug/L	103	<0.22	--	--	--	--	<0.237	--	--	--	--	<0.229	--	--	<0.229
Isosafrole	ug/L	NS	<0.18	--	--	--	--	<0.194	--	--	--	--	<0.188	--	--	<0.188
Kepone	ug/L	NS	<0.24	--	--	--	--	<0.258	--	--	--	--	<0.25	--	--	<0.25
Methapyrilene	ug/L	NS	<0.29	--	--	--	--	<0.312	--	--	--	--	<0.302	--	--	<0.302
Methyl Methanesulfonate	ug/L	1.8	<0.14	--	--	--	--	<0.151	--	--	--	--	<0.146	--	--	<0.146
Naphthalene	ug/L	14	<0.22	--	--	--	--	<0.237	--	--	--	--	<0.229	--	--	<0.229
N-Nitrosodiethylamine	ug/L	NS	<0.3	--	--	--	--	<0.323	--	--	--	--	<0.313	--	--	<0.313
N-Nitrosodimethylamine	ug/L	0.0018	<0.14	--	--	--	--	<0.151	--	--	--	--	<0.146	--	--	<0.146
N-Nitrosodi-n-butylamine	ug/L	0.032	<0.29	--	--	--	--	<0.312	--	--	--	--	<0.302	--	--	<0.302
N-Nitrosodi-n-propylamine	ug/L	NS	<0.26	--	--	--	--	<0.28	--	--	--	--	<0.271	--	--	<0.271
N-Nitrosodiphenylamine	ug/L	36	<0.66	--	--	--	--	<0.71	--	--	--	--	<0.688	--	--	<0.688
N-Nitrosomethylethylamine	ug/L	0.008	<0.2	--	--	--	--	<0.215	--	--	--	--	<0.208	--	--	<0.208
N-Nitrosopiperidine	ug/L	NS	<0.15	--	--	--	--	<0.161	--	--	--	--	<0.156	--	--	<0.156
N-Nitrosopyrrolidine	ug/L	0.083	<0.23	--	--	--	--	<0.247	--	--	--	--	<0.24	--	--	<0.24
O,O,O-Triethyl phosphorothioate	ug/L	NS	<0.24	--	--	--	--	<0.258	--	--	--	--	<0.25	--	--	<0.25
o-Toluidine	ug/L	11	<0.181	--	--	--	--	<0.194	--	--	--	--	<0.188	--	--	<0.188
p-Dimethylamino azobenzene	ug/L	NS	<0.24	--	--	--	--	<0.258	--	--	--	--	<0.25	--	--	<0.25
Pentachloroethanol	ug/L	NS	<0.18	--	--	--	--	<0.194	--	--	--	--	<0.188	--	--	<0.188
Pentachloronitrobenzene	ug/L	1	<0.15	--	--	--	--	<0.161	--	--	--	--	<0.156	--	--	<0.156
Pentachlorophenol	ug/L	NS	<0.22	--	--	--	--	<0.237	--	--	--	--	<0.229	--	--	<0.229
Pronamide	ug/L	NS	<0.33	--	--	--	--	<0.355	--	--	--	--	<0.344	--	--	<0.344
Pyridine	ug/L	1	<0.244	--	--	--	--	<0.258	--	--	--	--	<0.25	--	--	<0.25
Phenacetin	ug/L	NS	<0.17	--	--	--	--	<0.183	--	--	--	--	<0.177	--	--	<0.177
Phenanthrene	ug/L	210	<0.61	--	--	--	--	<0.645	--	--	--	--	<0.625	--	--	<0.625
Phenol	ug/L	2000	<2.4	--	--	--	--	<2.58	--	--	--	--	<2.5	--	--	<2.5
Pyrazole	ug/L	1.4	<0.17	--	--	--	--	<0.183	--	--	--	--	<0.177	--	--	<0.177
Pyridine	ug/L	5	<0.26	--	--	--	--	<0.28	--	--	--	--	<0.271	--	--	<0.271
Pyrene	ug/L	210	*0.234 J*	<0.237	<0.23	<0.23	<0.247	<0.247	--	--	--	<0.237	<0.24	--	--	<0.24
Safrole	ug/L	NS	<0.2	--	--	--	--	<0.215	--	--	--	--	<0.208	--	--	<0.208
Thionazin	ug/L	NS	<0.31	--	--	--	--	<0.333	--	--	--	--	<0.323	--	--	<0.323
Volatile Organic Compounds																
1,1-Dichloropropene	ug/L	NS	<0.15	--	--	--	--	<0.15	--	--	--	--	<0.15	--	--	<0.15
1,2,4-Trichlorobenzene	ug/L	70	<0.16	--	--	--	--	<0.16	--	--	--	--	<0.16	--	--	<0.16
1,3-Dichlorobenzene	ug/L	600	<0.17	--	--	--	--	<0.17	--	--	--	--	<0.17	--	--	<0.17
1,3-Dichloropropane	ug/L	NS	<0.16	--	--	--	--	<0.16	--	--	--	--	<0.16	--	--	<0.16
2,2-Dichloropropane	ug/L	NS	<0.18	--	--	--	--	<0.18	--	--	--	--	<0.18	--	--	<0.18
Acrolein	ug/L	NS	<1.5	--	--	--	--	<1.5	--	--	--	--	<1.5	--	--	<1.5
Allyl chloride	ug/L	NS	<0.27	--	--	--	--	<0.27	--	--	--	--	<0.27	--	--	<0.27
Chloroprene	ug/L	NS	<0.19	--	--	--	--	<0.19	--	--	--	--	<0.19	--	--	<0.19
Di-Isopropylfluorophosphate	ug/L	1000	<0.2	--	--	--	--	<0.2	--	--	--	--	<0.2	--	--	<0.2
Ethyl Methacrylate	ug/L	NS	<0.15	--	--	--	--	<0.15	--	--	--	--	<0.15	--	--	<0.15
Methacrylonitrile	ug/L	NS	<0.25	--	--	--	--	<0.25	--	--	--	--	<0.25	--	--	<0.25
Methyl Methacrylate	ug/L	NS	<0.15	--	--	--	--	<0.15	--	--	--	--	<0.15	--	--	<0.15
Naphthalene	ug/L	800	<0.37	--	--	--	--	<0.37	--	--	--	--	<0.37	--	--	<0.37
Propionitrile	ug/L	NS	<2	--	--	--	--	<2	--	--	--	--	<2	--	--	<2

Detection at or above the RL are shown in bold italics on grey background.

Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.
NS = No standard

Black Hawk County Landfill
Appendix I Results
Monitoring Well P-215C/P-215CR

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Black Hawk County Landfill
Appendix II Results
Monitoring Well P-215C

Parameter Name	Units	GPS	Apr. 2013	Jun. 2013	Oct. 2013	Jan. 2014	Apr. 2014	Jun. 2014	Aug. 2014	Dec. 2014	Mar. 2015	Sep. 2015	Jan. 2016	Oct. 2016
Alcohols/Gycols by GC														
Acetonitrile	µg/L	NS	<126	--	--	--	<126	--	--	--	--	<126	--	<126
Isobutanol	µg/L	2100	<177	--	--	--	<177	--	--	--	--	<177	--	<177
Herbicides (GC)														
2,4,5-T	µg/L	70	<0.44	--	--	--	<0.468	--	--	--	--	<0.445	--	<0.505
2,4-D	µg/L	70	<0.472	--	--	--	<0.503	--	--	--	--	<0.478	--	<0.542
Silvex (2,4,5-TP)	µg/L	50	<0.293	--	--	--	<0.312	--	--	--	--	<0.297	--	<0.337
Inorganics														
Cyanide	µg/L	200	<5.12	--	--	--	<3.1	--	--	--	--	<3.04	--	<3.52
Mercury	µg/L	2	***0.03 J***	<0.025	<0.025	<0.025	<0.071	--	--	--	<0.0926	<0.0926	--	<0.142
Sulfide	µg/L	NS	<128	--	--	--	<219	--	--	--	--	***527 J***	***335 J***	<180
Tin	µg/L	4200	<1.9	--	--	--	<121	--	--	--	--	<1.8	--	<0.832
PCBs (EPA Method 8082)														
PCB-1016	µg/L	NS	<0.0434	--	--	--	<0.0452	--	--	--	--	<0.0482	--	<0.0472
PCB-1221	µg/L	NS	<0.16	--	--	--	<0.167	--	--	--	--	<0.178	--	<0.174
PCB-1232	µg/L	NS	<0.11	--	--	--	<0.115	--	--	--	--	<0.122	--	<0.12
PCB-1242	µg/L	NS	<0.13	--	--	--	<0.135	--	--	--	--	<0.144	--	<0.141
PCB-1248	µg/L	NS	<0.11	--	--	--	<0.115	--	--	--	--	<0.122	--	<0.12
PCB-1254	µg/L	NS	<0.092	--	--	--	<0.0958	--	--	--	--	<0.102	--	<0.1
PCB-1260	µg/L	NS	<0.044	--	--	--	<0.0458	--	--	--	--	<0.0489	--	<0.0478
Pesticides (EPA Method 8081A)														
4,4'-DDD	µg/L	0.73	<0.0018	--	--	--	<0.00189	--	--	--	--	<0.00202	--	<0.00989
4,4'-DDE	µg/L	0.51	<0.0021	--	--	--	<0.00221	--	--	--	--	<0.00236	--	<0.0115
4,4'-DDT	µg/L	0.51	<0.0038	--	--	--	<0.004	--	--	--	--	<0.00427	--	<0.0209
Aldrin	µg/L	0.01	<0.0045	--	--	--	<0.00474	--	--	--	--	<0.00506	--	<0.0247
alpha-BHC	µg/L	0.028	<0.0017	--	--	--	<0.00179	--	--	--	--	<0.00191	--	<0.00934
beta-BHC	µg/L	0.042	<0.0048	--	--	--	***0.018 J***	<0.00533	<0.00505	<0.00558	<0.00522	<0.00539	--	<0.0264
Chlordane	µg/L	2	<0.064	--	--	--	<0.0674	--	--	--	--	<0.0719	--	<0.352
delta-BHC	µg/L	2.1	<0.0023	--	--	--	***0.00295 J***	***0.00325***	<0.00242	<0.00267	<0.0025	<0.00258	--	<0.0126
Dieldrin	µg/L	0.011	<0.002	--	--	--	<0.00211	--	--	--	--	<0.00225	--	<0.011
Endosulfan I	µg/L	42	<0.002	--	--	--	***0.00508 J***	<0.00222	<0.00211	<0.00233	<0.00217	<0.00225	--	<0.011
Endosulfan II	µg/L	42	<0.0019	--	--	--	***0.0122 J***	<0.00211	<0.002	<0.00221	<0.00207	<0.00213	--	<0.0104
Endosulfan sulfate	µg/L	NS	<0.0025	--	--	--	<0.00263	--	--	--	--	<0.00281	--	<0.0137
Endrin	µg/L	2	<0.0019	--	--	--	<0.002	--	--	--	--	<0.00213	--	<0.0104
Endrin aldehyde	µg/L	2.1	<0.0073	--	--	--	<0.00768	--	--	--	--	<0.0082	--	<0.0401
gamma-BHC (Lindane)	µg/L	0.2	<0.0019	--	--	--	***0.00372 J***	<0.00211	<0.002	<0.00221	<0.00207	<0.00213	--	<0.0104
Heptachlor	µg/L	0.4	***0.00743 J***	<0.138	<0.00265	<0.00274	<0.00274	--	--	--	<0.00283	<0.00292	--	<0.0143
Heptachlor epoxide	µg/L	0.2	<0.0061	--	--	--	<0.00642	--	--	--	--	<0.00685	--	<0.0335
Methoxychlor	µg/L	40	<0.0021	--	--	--	<0.00221	--	--	--	--	<0.00236	--	<0.0115
Toxaphene	µg/L	3	<0.058	--	--	--	<0.0611	--	--	--	--	<0.0652	--	<0.319
Semivolatile Organics by GC/MS														
1,2,4,5-Tetrachlorobenzene	µg/L	2.1	<0.12	--	--	--	<0.121	--	--	--	--	<0.141	--	<0.129
1,3,5-Trinitrobenzene	µg/L	NS	<1.28	--	--	--	<1.29	--	--	--	--	<1.51	--	<1.38
1,3-Dinitrobenzene	µg/L	1	<0.17	--	--	--	<0.172	--	--	--	--	<0.2	--	<0.183
1,4-Naphthoquinone	µg/L	NS	<0.14	--	--	--	<0.141	--	--	--	--	<0.165	--	<0.151
1,4-Phenylenediamine	µg/L	NS	<8.4	--	--	--	<8.48	--	--	--	--	<9.88	--	<9.03
1-Naphthylamine	µg/L	NS	<0.24	--	--	--	<0.242	--	--	--	--	<0.282	--	<0.258
2,3,4,6-Tetrachlorophenol	µg/L	NS	<0.2	--	--	--	<0.202	--	--	--	--	<0.235	--	<0.215
2,4,5-Trichlorophenol	µg/L	700	<0.32	--	--	--	<0.323	--	--	--	--	<0.376	--	<0.344
2,4,6-Trichlorophenol	µg/L	16	<0.22	--	--	--	<0.222	--	--	--	--	<0.259	--	<0.237
2,4-Dichlorophenol	µg/L	20	<0.15	--	--	--	<0.152	--	--	--	--	<0.176	--	<0.161
2,4-Dimethylphenol	µg/L	100	<0.21	--	--	--	<0.212	--	--	--	--	<0.247	--	<0.226
2,4-Dinitrophenol	µg/L	14	<1.34	--	--	--	<1.35	--	--	--	--	<1.58	--	<1.44
2,4-Dinitrotoluene	µg/L	0.25	<0.19	--	--	--	<0.192	--	--	--	--	<0.224	--	<0.204
2,6-Dichlorophenol	µg/L	NS	<0.22	--	--	--	<0.222	--	--	--	--	<0.259	--	<0.237
2,6-Dinitrotoluene	µg/L	0.26	<0.24	--	--	--	<0.242	--	--	--	--	<0.282	--	<0.258
2-Acetylaminofluorene	µg/L	NS	<0.28	--	--	--	<0.283	--	--	--	--	<0.329	--	<0.301
2-Chloronaphthalene	µg/L	560	<0.23	--	--	--	<0.232	--	--	--	--	<0.271	--	<0.247
2-Chlorophenol	µg/L	40	<0.15	--	--	--	<0.152	--	--	--	--	<0.176	--	<0.161
2-Methylnaphthalene	µg/L	28	<0.19	--	--	--	<0.192	--	--	--	--	<0.224	--	<0.204
2-Methylphenol (o-Cresol)	µg/L	35	<0.18	--	--	--	<0.182	--	--	--	--	<0.212	--	<0.194
2-Naphthylamine	µg/L	0.097	<0.22	--	--	--	<0.222	--	--	--	--	<0.259	--	<0.237
2-Nitroaniline	µg/L	NS	<0.23	--	--	--	<0.232	--	--	--	--	<0.271	--	<0.247
2-Nitrophenol	µg/L	NS	<0.16	--	--	--	<0.162	--	--	--	--	<0.188	--	<0.172
3,3'-Dichlorobenzidine	µg/L	0.39	<0.46	--	--	--	<0.465	--	--	--	--	<0.541	--	<0.495
3,3'-Dimethylbenzidine	µg/L	NS	<0.21	--	--	--	<0.212	--	--	--	--	<0.247	--	<0.226
3/4-Methylphenol	µg/L	70	<0.18	--	--	--	<0.182	--	--	--	--	<0.212	--	<0.194
3-Methylcholanthrene	µg/L	NS	<0.31	--	--	--	<0.313	--	--	--	--	<0.365	--	<0.333
3-Nitroaniline	µg/L	NS	<0.22	--	--	--	<0.222	--	--	--	--	<0.259	--	<0.237
4,6-Dinitro-2-methylphenol	µg/L	NS	<2.22	--	--	--	<2.24	--	--	--	--	<2.61	--	<2.39
4-Aminobiphenyl	µg/L	0.0083	<0.3	--	--	--	<0.303	--	--	--	--	<0.353	--	<0.323
4-Bromophenyl phenyl ether	µg/L	NS	<0.29	--	--	--	<0.293	--	--	--	--	<0.341	--	<0.312
4-Chloro-3-methylphenol	µg/L	700	<0.19	--	--	--	<0.192	--	--	--	--	<0.224	--	<0.204
4-Chloroaniline	µg/L	28	<0.14	--	--	--	<0.141	--	--	--	--	<0.165	--	<0.151
4-Chlorophenyl phenyl ether	µg/L	NS	<0.25	--	--	--	<0.253	--	--	--	--	<0.294	--	<0.269
4-Nitroaniline	µg/L	NS	<0.32	--	--	--	<0.323	--	--	--	--	<0.376	--	<0.344
4-Nitrophenol	µg/L	60	<0.12	--	--	--	<0.121	--	--	--	--	<0.141	--	<0.129
5-Nitro-o-toluidine	µg/L	NS	<0.17	--	--	--	<0.172	--	--	--	--	<0.2	--	<0.183
7,12-Dimethylbenz (a) anthracene	µg/L	NS	<0.25	--	--	--	<0.253	--	--	--	--	<0.294	--	<0.269
Acenaphthene	µg/L	420	<0.3	--	--	--	<0.303	--	--	--	--	<0.353	--	<0.323
Acenaphthylene	µg/L	210	<0.21	--	--	--	<0.212	--	--	--	--	<0.247	--	<0.226
Acetophenone	µg/L	NS	<0.22	--	--	--	<0.222	--	--	--	--	<0.259	--	<0.237
Anthracene	µg/L	2100	<0.17	--	--	--	<0.172	--	--	--	--	<0.2	--	<0.183
Benzo (a) anthracene	µg/L	0.24	<0.24	--	--	--	<0.242	--	--	--	--	<0.282	--	<0.258
Benzo (a) pyrene	µg/L	0.2	<0.25	--	--	--	<0.253	--	--	--	--	<0.294	--	<0.269
Benzo (b) fluoranthene	µg/L	0.24	<0.31	--	--	--	<0.313	--	--	--	--	<0.365	--	<0.333
Benzo (g,h,i) perylene	µg/L	21	<0.23	--	--	--	<0.232	--	--	--	--	<0.271	--	<0.247
Benzo (k) fluoranthene	µg/L	2.4	<0.2	--	--	--	<0.202	--	--	--	--	<0.235	--	<0.215
Benzyl alcohol	µg/L	700	<0.18	--	--	--	<0.182	--	--	--	--	<0.212	--	<0.194
Bis(2-chloroethoxy)methane	µg/L	NS	<0.26	--	--	--	<0.263	--	--	--	--	<0.306	--	<0.28
Bis(2-chloroethyl)ether	µg/L	0.16	<0.18	--	--	--	<0.182	--	--	--	--	<0.212	--	<0.194
Bis(2-chloroisopropyl) ether	µg/L	300	<0.18	--	--	--	<0.182	--	--	--	--	<0.212	--	<0.194
Bis(2-ethylhexyl)phthalate	µg/L	6	<0.39	--	--	--	<0.394	--	--	--	--	<0.459	--	<0.419
Butyl benzyl phthalate	µg/L	140	<0.34	--	--	--	<0.343	--	--	--	--	<0.4	--	<0.366
Chlorobenzilate	µg/L	NS	<0.21	--	--	--	<0.212	--	--	--	--	<0.247	--	<0.226
Chrysene	µg/L	24	<0.29	--	--	--	<0.293	--	--	--	--	<0.341	--	<0.312
Diallate (cis or trans)	µg/L	NS	<0.23	--	--	--	<0.232	--	--	--	--	<0.271	--	<0.247
Dibenzo (a,h) anthracene	µg/L	0.024	<0.25	--	--	--	<0.253	--	--	--	--	<0.294	--	<0.269
Dibenzofuran	µg/L	7	<0.24	--	--	--	<0.242	--	--	--	--	<0.282	--	<0.258
Diethyl phthalate	µg/L	5600	<0.26	--	--	--	<0.263	--	--	--	--	<0.306	--	<0.28
Dimethoate	µg/L	1.4	<0.27	--	--	--	<0.273	--	--	--	--	<0.318	--	<0.29
Dimethyl phthalate	µg/L	NS	<0.23	--	--	--	<0.232	--	--	--	--	<0.271	--	<0.247
Di-n-butyl phthalate	µg/L	700	<0.51	--	--	--	<0.515	--	--	--	--	<0.6	--	<0.548
Di-n-octyl phthalate	µg/L	140	<0.23	--	--	--	<0.232	--	--	--	--	<0.271	--	***1.79 J***
Dinoseb	µg/L	7	<0.43	--	--	--	<0.434	--	--	--	--	<0.506	--	<0.462
Diphenylamine	µg/L	180	<0.66	--	--	--	<0.667	--	--	--	--	<0.776	--	<0.71
Disulfoton	µg/L	0.7	<0.29	--	--	--	<0.293	--	--	--	--	<0.341	--	<0.312
Ethyl Methanesulfonate	µg/L	NS	<0.15	--	--	--	<0.152	--	--	--	--	<0.176	--	<0.161
Famphur	µg/L	NS	<0.47	--	--	--	<0.475	--	--	--	--	<0.553	--	<0.505
Fluoranthene	µg/L	280	<0.33	--	--	--	<0.333	--	--	--	--	<0.388	--	<0.355
Fluorene	µg/L	280	<0.29	--	--	--	<0.293	--	--	--	--	<0.341	--	<0.312
Hexachlorobenzene	µg/L	1	<0.27	--	--	--	<0.273	--	--	--	--	<0.318	--	<0.29
Hexachlorobutadiene	µg/L	1	<0.13	--	--	--	<0.131	--	--	--	--	<0.153	--	<0.14
Hexachlorocyclopentadiene	µg/L	50	<1.89	--	--	--	<1.91	--	--	--	--	<2.22	--	<2.03
Hexachloroethane	µg/L	1	<0.13	--	--	--	<0.131	--	--	--	--	<0.153	--	<0.14
Hexachloropropene	µg/L	NS	<1.64	--	--	--	<1.66	--	--	--	--	<1.93	--	<1.76
Indeno (1,2,3-cd) pyrene	µg/L	0.24	<0.24	--	--	--	<0.242	--	--	--	--	<0.282	--	<0.258
Isodrin	µg/L	NS	<0.38	--	--	--	<0.384	--	--	--	--	<0.447	--	<0.409
Isophorone	µg/L	100	<0.22	--	--	--	<0.222	--	--	--	--	<0.259	--	<0.237
Isosafrole	µg/L	NS	<0.18	--	--	--	<0.182	--	--	--	--	<0.212	--	<0.194
Kepone	µg/L	NS	<0.24	--	--	--	<0.242	--	--	--	--	<0.282	--	<0.258
Methapyrilene	µg/L	NS	<0.29	--	--	--	<0.293	--	--	--	--	<0.341	--	<0.312
Methyl Methanesulfonate	µg/L	1.8	<0.14	--	--	--	<0.141	--	--	--	--	<0.165	--	<0.151
Nitrobenzene	µg/L	14	<0.22	--	--	--	<0.222	--	--	--	--	<0.259	--	<0.237
N-Nitrosodiethylamine	µg/L	NS	<0.3	--	--	--	<0.303	--	--	--	--	<0.353	--	<0.323
N-Nitrosodimethylamine	µg/L	0.0034	<0.14	--	--	--	<0.141	--	--	--	--	<0.165	--	<0.151
N-Nitrosodi-n-butylamine	µg/L	0.032	<0.29	--	--	--	<0.293	--	--	--	--	<0.341	--	<0.312
N-Nitrosodi-n-propylamine	µg/L	NS	<0.26	--	--	--	<0.263	--	--	--	--	<0.306	--	<0.28
N-Nitrosodiphenylamine	µg/L	36	<0.66	--	--	--	<0.667	--	--	--	--	<0.776	--	<0.71
N-Nitrosomethylethylamine	µg/L	0.008	<0.2	--	--	--	<0.202	--	--	--	--	<0.235	--	<0.215
N-Nitrosopiperidine	µg/L	NS	<0.15	--	--	--	<0.152	--	--	--	--	<0.176	--	<0.161
N-Nitrosopyrrolidine	µg/L	0.083	<0.23	--	--	--	<0.232	--	--	--	--	<0.271	--	<0.247
O,O,O-Triethyl phosphorothioate	µg/L	NS	<0.24	--	--	--	<0.242	--	--	--	--	<0.282	--	<0.258
o-Toluidine	µg/L	11	<0.18	--	--	--	<0.182	--	--	--	--	<0.212	--	<0.194
p-(Dimethylamino)azobenzene	µg/L	NS	<0.24	--	--	--	<0.242	--	--	--	--	<0.282	--	<0.258
Parathion-ethyl	µg/L	NS	<0.18	--	--	--	<0.182	--	--	--	--	<0.212	--	<0.194
Parathion-methyl	µg/L	1	<0.15	--	--	--	<0.152	--	--	--	--	<0.176	--	<0.161
Pentachlorobenzene	µg/L	NS	<0.22	--	--	--	<0.222	--	--	--	--	<0.259	--	<0.237
Pentachloronitrobenzene	µg/L	NS	<0.33	--	--	--	<0.333	--	--	--	--	<0.388	--	<0.355
Pentachlorophenol	µg/L	1	<0.24	--	--	--	<0.242	--	--	--	--	<0.282	--	<0.258
Phenacetin	µg/L	NS	<0.17	--	--	--	<0.172	--	--	--	--	<0.2	--	<0.183
Phenanthrene	µg/L	210	<0.6	--	--	--	<0.606	--	--	--	--	<0.706	--	<0.645
Phenol	µg/L	2000	<2.4	--	--	--	<2.42	--	--	--	--	<2.82	--	<2.58
Phorate	µg/L	1.4	<0.17	--	--	--	<0.172	--	--	--	--	<0.2	--	<0.183
Pronamide	µg/L	5	<0.26	--	--	--	<0.263	--	--	--	--	<0.306	--	<0.28
Pyrene	µg/L	210	<0.23	--	--	--	<0.232	--	--	--	--	<0.271	--	<0.247
Safrole	µg/L	NS	<0.2	--	--	--	<0.202	--	--	--	--	<0.235	--	<0.215
Thionazin	µg/L	NS	<0.31	--	--	--	<0.313	--	--	--	--	<0.365	--	<0.333
Volatile Organic Compounds														
1,1-Dichloropropene	µg/L	NS	<0.15	--	--	--	<0.15	--	--	--	--	<0.15	--	<0.15
1,2,4-Trichlorobenzene	µg/L	70	<0.16	--	--	--	<0.16	--	--	--	--	<0.16	--	<0.16
1,3-Dichlorobenzene	µg/L	600	<0.17	--	--	--	<0.17	--	--	--	--	<0.17	--	<0.17
1,3-Dichloropropane	µg/L	NS	<0.16	--	--	--	<0.16	--	--	--	--	<0.16	--	<0.16
2,2-Dichloropropane	µg/L	NS	<0.18	--	--	--	<0.18	--	--	--	--	<0.18	--	<0.18
Acrolein	µg/L	NS	<1.5	--	--	--	<1.5	--	--	--	--	<1.5	--	<1.5
Allyl chloride	µg/L	NS	<0.27	--	--	--	<0.27	--	--	--	--	<0.27	--	<0.27
Chloroprene	µg/L	NS	<0.19	--	--	--	<0.19	--	--	--	--	<0.19	--	<0.19
Dichlorodifluoromethane	µg/L	1000	<0.2	--	--	--	<0.2	--	--	--	--	<0.2	--	<0.2
Ethyl Methacrylate	µg/L	NS	<0.15	--	--	--	<0.15	--	--	--	--	<0.15	--	<0.15
Methacrylonitrile	µg/L	NS	<0.25	--	--	--	<0.25	--	--	--	--	<0.25	--	<0.25
Methyl Methacrylate	µg/L	NS	<0.15	--	--	--	<0.15	--	--	--	--	<0.15	--	<0.15
Naphthalene	µg/L	100	<0.37	--	--	--	<0.37	--	--	--	--	<0.37	--	<0.37
Propionitrile	µg/L	NS	<2	--	--	--	<2	--	--	--	--	<2	--	<2

Detections at or above the RL are shown in bold italics on gray background.

Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.

NS = No standard

Black Hawk County Landfill
Appendix I Results
Monitoring Well P-216C/P-216CR

| | | |

Black Hawk County Landfill
Appendix II Results
Monitoring Well P-216C

Parameter Name	Units	GPS	Dec. 2012	Feb. 2013	Apr. 2013	Jun. 2013	Oct. 2013	Jan. 2014	Apr. 2014	Jun. 2014	Mar. 2015	Sep. 2015	Jan. 2016	Mar. 2016	Oct. 2016
Alcohols/Gycols by GC															
Acetonitrile	µg/L	NS	<126	--	--	--	<126	--	--	--	--	<126	--	--	<126
Isobutanol	µg/L	2100	<177	--	--	--	<177	--	--	--	--	<177	--	--	<177
Herbicides (GC)															
2,4,5-T	µg/L	70	<0.44	--	--	--	<0.473	--	--	--	--	<0.512	--	--	<0.525
2,4-D	µg/L	70	<0.47	--	--	--	***3.76***	<0.493	<0.519	<0.479	<0.537	<0.55	--	<0.533	<0.564
Silvex (2,4,5-TP)	µg/L	50	<0.29	--	--	--	<0.316	--	--	--	--	<0.342	--	--	<0.35
Inorganics															
Cyanide	µg/L	200	<5.12	--	--	--	<1.81	--	--	--	--	<3.04	--	--	<3.52
Mercury	µg/L	2	<0.025	--	--	--	<0.025	--	--	--	--	<0.0926	--	--	<0.142
Sulfide	µg/L	NS	<230	--	--	--	<128	--	--	--	--	<219	--	--	<180
Tin	µg/L	4200	<16.7	--	--	--	<0.77	--	--	--	--	<1.8	--	--	<0.832
PCBs (EPA Method 8082)															
PCB-1016	µg/L	NS	<0.0434	--	--	--	<0.0505	--	--	--	--	<0.0488	--	--	<0.0488
PCB-1221	µg/L	NS	<0.16	--	--	--	<0.186	--	--	--	--	<0.18	--	--	<0.18
PCB-1232	µg/L	NS	<0.11	--	--	--	<0.128	--	--	--	--	<0.124	--	--	<0.124
PCB-1242	µg/L	NS	<0.13	--	--	--	<0.151	--	--	--	--	<0.146	--	--	<0.146
PCB-1248	µg/L	NS	<0.11	--	--	--	<0.128	--	--	--	--	<0.124	--	--	<0.124
PCB-1254	µg/L	NS	<0.092	--	--	--	<0.107	--	--	--	--	<0.103	--	--	<0.103
PCB-1260	µg/L	NS	<0.044	--	--	--	<0.0512	--	--	--	--	<0.0494	--	--	<0.0494
Pesticides (EPA Method 8081A)															
4,4'-DDD	µg/L	0.73	<0.18	--	--	--	<0.00205	--	--	--	--	<0.002	--	--	<0.002
4,4'-DDE	µg/L	0.51	<0.21	--	--	--	<0.00239	--	--	--	--	<0.00233	--	--	<0.00233
4,4'-DDT	µg/L	0.51	<0.38	--	--	--	<0.00432	--	--	--	--	<0.00422	--	--	<0.00422
Aldrin	µg/L	0.01	<0.45	--	--	--	<0.00511	--	--	--	--	<0.005	--	--	<0.005
alpha-BHC	µg/L	0.028	<0.17	--	--	--	<0.00193	--	--	--	--	<0.00189	--	--	<0.00189
beta-BHC	µg/L	0.042	<0.48	--	--	--	<0.00545	--	--	--	--	<0.00533	--	--	<0.00533
Chlordane	µg/L	2	<6.4	--	--	--	<0.0727	--	--	--	--	<0.0711	--	--	<0.0711
delta-BHC	µg/L	2.1	<0.23	--	--	--	***0.00394 J***	<0.00242	<0.00245	<0.00256	***0.00273 J***	<0.00256	--	--	***0.00824 J***
Dieldrin	µg/L	0.011	<0.2	--	--	--	<0.00227	--	--	--	--	<0.00222	--	--	<0.00222
Endosulfan I	µg/L	42	<0.2	--	--	--	***0.00911 J***	<0.00211	***0.00397 J***	<0.00222	<0.00206	<0.00222	--	--	<0.00222
Endosulfan II	µg/L	42	<0.19	--	--	--	<0.00216	--	--	--	--	<0.00211	--	--	<0.00211
Endosulfan sulfate	µg/L	NS	***1.34 J***	<0.00255	<0.00255	<0.133	<0.00284	--	--	--	<0.00258	<0.00278	--	--	<0.00278
Endrin	µg/L	2	<0.19	--	--	--	<0.00216	--	--	--	--	<0.00211	--	--	<0.00211
Endrin aldehyde	µg/L	2.1	<0.73	--	--	--	<0.0083	--	--	--	--	***0.00888 J***	***0.0101 J***	--	<0.00811
gamma-BHC (Lindane)	µg/L	0.2	<0.19	--	--	--	<0.00216	--	--	--	--	<0.00211	--	--	<0.00211
Heptachlor	µg/L	0.4	<0.26	--	--	--	***0.0313 J***	<0.00274	<0.00277	<0.00289	<0.00268	<0.00289	--	--	<0.00289
Heptachlor epoxide	µg/L	0.2	<0.61	--	--	--	<0.00693	--	--	--	--	<0.00678	--	--	<0.00678
Methoxychlor	µg/L	40	<0.21	--	--	--	<0.00239	--	--	--	--	<0.00233	--	--	<0.00233
Toxaphene	µg/L	3	<5.8	--	--	--	<0.0659	--	--	--	--	<0.0644	--	--	<0.0644
Semivolatile Organics by GC/MS															
1,2,4,5-Tetrachlorobenzene	µg/L	2.1	<0.12	--	--	--	<0.132	--	--	--	--	<0.132	--	--	<0.133
1,3,5-Trinitrobenzene	µg/L	NS	<1.28	--	--	--	<1.41	--	--	--	--	<1.41	--	--	<1.42
1,3-Dinitrobenzene	µg/L	1	<0.17	--	--	--	<0.187	--	--	--	--	<0.187	--	--	<0.189
1,4-Naphthoquinone	µg/L	NS	<0.14	--	--	--	<0.154	--	--	--	--	<0.154	--	--	<0.156
1,4-Phenylenediamine	µg/L	NS	<8.4	--	--	--	<9.23	--	--	--	--	<9.23	--	--	<9.33
1-Naphthylamine	µg/L	NS	<0.24	--	--	--	<0.264	--	--	--	--	<0.264	--	--	<0.267
2,3,4,6-Tetrachlorophenol	µg/L	NS	<0.2	--	--	--	<0.22	--	--	--	--	<0.22	--	--	<0.222
2,4,5-Trichlorophenol	µg/L	700	<0.32	--	--	--	<0.352	--	--	--	--	<0.352	--	--	<0.356
2,4,6-Trichlorophenol	µg/L	16	<0.22	--	--	--	<0.242	--	--	--	--	<0.242	--	--	<0.244
2,4-Dichlorophenol	µg/L	20	<0.15	--	--	--	<0.165	--	--	--	--	<0.165	--	--	<0.167
2,4-Dimethylphenol	µg/L	100	<0.21	--	--	--	<0.231	--	--	--	--	<0.231	--	--	<0.233
2,4-Dinitrophenol	µg/L	14	<1.34	--	--	--	<1.47	--	--	--	--	<1.47	--	--	<1.49
2,4-Dinitrotoluene	µg/L	0.25	<0.19	--	--	--	<0.209	--	--	--	--	<0.209	--	--	<0.211
2,6-Dichlorophenol	µg/L	NS	<0.22	--	--	--	<0.242	--	--	--	--	<0.242	--	--	<0.244
2,6-Dinitrotoluene	µg/L	0.26	<0.24	--	--	--	<0.264	--	--	--	--	<0.264	--	--	<0.267
2-Acetylaminofluorene	µg/L	NS	<0.28	--	--	--	<0.308	--	--	--	--	<0.308	--	--	<0.311
2-Chloronaphthalene	µg/L	560	<0.23	--	--	--	<0.253	--	--	--	--	<0.253	--	--	<0.256
2-Chlorophenol	µg/L	40	<0.15	--	--	--	<0.165	--	--	--	--	<0.165	--	--	<0.167
2-Methylnaphthalene	µg/L	28	<0.19	--	--	--	<0.209	--	--	--	--	<0.209	--	--	<0.211
2-Methylphenol (o-Cresol)	µg/L	35	<0.18	--	--	--	<0.198	--	--	--	--	<0.198	--	--	<0.2
2-Naphthylamine	µg/L	0.097	<0.22	--	--	--	<0.242	--	--	--	--	<0.242	--	--	<0.244
2-Nitroaniline	µg/L	NS	<0.23	--	--	--	<0.253	--	--	--	--	<0.253	--	--	<0.256
2-Nitrophenol	µg/L	NS	<0.16	--	--	--	<0.176	--	--	--	--	<0.176	--	--	<0.178
3,3'-Dichlorobenzidine	µg/L	0.39	<0.46	--	--	--	<0.505	--	--	--	--	<0.505	--	--	<0.511
3,3'-Dimethylbenzidine	µg/L	NS	<0.21	--	--	--	<0.231	--	--	--	--	<0.231	--	--	<0.233
3/4-Methylphenol	µg/L	70	<0.18	--	--	--	<0.198	--	--	--	--	<0.198	--	--	<0.2
3-Methylcholanthrene	µg/L	NS	<0.313	--	--	--	<0.341	--	--	--	--	<0.341	--	--	<0.344
3-Nitroaniline	µg/L	NS	<0.22	--	--	--	<0.242	--	--	--	--	<0.242	--	--	<0.244
4,6-Dinitro-2-methylphenol	µg/L	NS	<2.22	--	--	--	<2.44	--	--	--	--	<2.44	--	--	<2.47
4-Aminobiphenyl	µg/L	0.0083	<0.3	--	--	--	<0.33	--	--	--	--	<0.33	--	--	<0.333
4-Bromophenyl phenyl ether	µg/L	NS	<0.29	--	--	--	<0.319	--	--	--	--	<0.319	--	--	<0.322
4-Chloro-3-methylphenol	µg/L	700	<0.19	--	--	--	<0.209	--	--	--	--	<0.209	--	--	<0.211
4-Chloroaniline	µg/L	28	<0.14	--	--	--	<0.154	--	--	--	--	<0.154	--	--	<0.156
4-Chlorophenyl phenyl ether	µg/L	NS	<0.25	--	--	--	<0.275	--	--	--	--	<0.275	--	--	<0.278
4-Nitroaniline	µg/L	NS	<0.32	--	--	--	<0.352	--	--	--	--	<0.352	--	--	<0.356
4-Nitrophenol	µg/L	60	<0.12	--	--	--	<0.132	--	--	--	--	<0.132	--	--	<0.133
5-Nitro-o-toluidine	µg/L	NS	<0.17	--	--	--	<0.187	--	--	--	--	<0.187	--	--	<0.189
7,12-Dimethylbenz (a) anthracene	µg/L	NS	<0.25	--	--	--	<0.275	--	--	--	--	<0.275	--	--	<0.278
Acenaphthene	µg/L	420	<0.3	--	--	--	<0.33	--	--	--	--	<0.33	--	--	<0.333
Acenaphthylene	µg/L	210	<0.21	--	--	--	<0.231	--	--	--	--	<0.231	--	--	<0.233
Acetophenone	µg/L	NS	<0.22	--	--	--	<0.242	--	--	--	--	<0.242	--	--	<0.244
Anthracene	µg/L	2100	<0.17	--	--	--	<0.187	--	--	--	--	<0.187	--	--	<0.189
Benzo (a) anthracene	µg/L	0.24	<0.24	--	--	--	<0.264	--	--	--	--	<0.264	--	--	<0.267
Benzo (a) pyrene	µg/L	0.2	<0.25	--	--	--	<0.275	--	--	--	--	<0.275	--	--	<0.278
Benzo (b) fluoranthene	µg/L	0.24	<0.31	--	--	--	<0.341	--	--	--	--	<0.341	--	--	<0.344
Benzo (g,h,i) perylene	µg/L	21	<0.23	--	--	--	<0.253	--	--	--	--	<0.253	--	--	<0.256
Benzo (k) fluoranthene	µg/L	2.4	<0.2	--	--	--	<0.22	--	--	--	--	<0.22	--	--	<0.222
Benzyl alcohol	µg/L	700	<0.18	--	--	--	<0.198	--	--	--	--	<0.198	--	--	<0.2
Bis(2-chloroethoxy)methane	µg/L	NS	<0.26	--	--	--	<0.286	--	--	--	--	<0.286	--	--	<0.289
Bis(2-chloroethyl)ether	µg/L	0.16	<0.18	--	--	--	<0.198	--	--	--	--	<0.198	--	--	<0.2
Bis(2-chloroisopropyl) ether	µg/L	300	<0.18	--	--	--	<0.198	--	--	--	--	<0.198	--	--	<0.2
Bis(2-ethylhexyl)phthalate	µg/L	6	***0.749 J***	<0.398	<0.398	***2.39 J***	***15***	--	--	--	<0.39	<0.429	--	***11 J+***	<0.433
Butyl benzyl phthalate	µg/L	140	<0.34	--	--	--	<0.374	--	--	--	--	<0.374	--	--	<0.378
Chlorobenzilate	µg/L	NS	<0.21	--	--	--	<0.231	--	--	--	--	<0.231	--	--	<0.233
Chrysene	µg/L	24	<0.29	--	--	--	<0.319	--	--	--	--	<0.319	--	--	<0.322
Diallate (cis or trans)	µg/L	NS	<0.23	--	--	--	<0.253	--	--	--	--	<0.253	--	--	<0.256
Dibenzo (a,h) anthracene	µg/L	0.024	<0.25	--	--	--	<0.275	--	--	--	--	<0.275	--	--	<0.278
Dibenzofuran	µg/L	7	<0.24	--	--	--	<0.264	--	--	--	--	<0.264	--	--	<0.267
Diethyl phthalate	µg/L	5600	<0.26	--	--	--	<0.286	--	--	--	--	<0.286	--	--	<0.289
Dimethoate	µg/L	1.4	<0.27	--	--	--	<0.297	--	--	--	--	<0.297	--	--	<0.3
Dimethyl phthalate	µg/L	NS	<0.23	--	--	--	<0.253	--	--	--	--	<0.253	--	--	<0.256
Di-n-butyl phthalate	µg/L	700	<0.51	--	--	--	<0.56	--	--	--	--	<0.56	--	--	<0.567
Di-n-octyl phthalate	µg/L	140	<0.23	--	--	--	<0.253	--	--	--	--	<0.253	--	--	<0.256
Dinoseb	µg/L	7	<0.43	--	--	--	<0.473	--	--	--	--	<0.473	--	--	<0.478
Diphenylamine	µg/L	180	<0.66	--	--	--	<0.725	--	--	--	--	<0.725	--	--	<0.733
Disulfoton	µg/L	0.7	<0.29	--	--	--	<0.319	--	--	--	--	<0.319	--	--	<0.322
Ethyl Methanesulfonate	µg/L	NS	<0.15	--	--	--	<0.165	--	--	--	--	<0.165	--	--	<0.167
Famphur	µg/L	NS	<0.47	--	--	--	<0.516	--	--	--	--	<0.516	--	--	<0.522
Fluoranthene	µg/L	280	<0.33	--	--	--	<0.363	--	--	--	--	<0.363	--	--	<0.367
Fluorene	µg/L	280	<0.29	--	--	--	<0.319	--	--	--	--	<0.319	--	--	<0.322
Hexachlorobenzene	µg/L	1	<0.27	--	--	--	<0.297	--	--	--	--	<0.297	--	--	<0.3
Hexachlorobutadiene	µg/L	1	<0.13	--	--	--	<0.143	--	--	--	--	<0.143	--	--	<0.144
Hexachlorocyclopentadiene	µg/L	50	<1.89	--	--	--	<2.08	--	--	--	--	<2.08	--	--	<2.1
Hexachloroethane	µg/L	1	<0.13	--	--	--	<0.143	--	--	--	--	<0.143	--	--	<0.144
Hexachloropropene	µg/L	NS	<1.64	--	--	--	<1.8	--	--	--	--	<1.8	--	--	<1.82
Indeno (1,2,3-cd) pyrene	µg/L	0.24	<0.24	--	--	--	<0.264	--	--	--	--	<0.264	--	--	<0.267
Isodrin	µg/L	NS	<0.38	--	--	--	<0.418	--	--	--	--	<0.418	--	--	<0.422
Isophorone	µg/L	100	<0.22	--	--	--	<0.242	--	--	--	--	<0.242	--	--	<0.244
Isosafrole	µg/L	NS	<0.18	--	--	--	<0.198	--	--	--	--	<0.198	--	--	<0.2
Kepone	µg/L	NS	<0.24	--	--	--	<0.264	--	--	--	--	<0.264	--	--	<0.267
Methapyrilene	µg/L	NS	<0.29	--	--	--	<0.319	--	--	--	--	<0.319	--	--	<0.322
Methyl Methanesulfonate	µg/L	1.8	<0.14	--	--	--	<0.154	--	--	--	--	<0.154	--	--	<0.156
Nitrobenzene	µg/L	14	<0.22	--	--	--	<0.242	--	--	--	--	<0.242	--	--	<0.244
N-Nitrosodiethylamine	µg/L	NS	<0.3	--	--	--	<0.33	--	--	--	--	<0.33	--	--	<0.333
N-Nitrosodimethylamine	µg/L	0.0034	<0.14	--	--	--	<0.154	--	--	--	--	<0.154	--	--	<0.156
N-Nitrosodi-n-butylamine	µg/L	0.032	<0.29	--	--	--	<0.319	--	--	--	--	<0.319	--	--	<0.322
N-Nitrosodi-n-propylamine	µg/L	NS	<0.26	--	--	--	<0.286	--	--	--	--	<0.286	--	--	<0.289
N-Nitrosodiphenylamine	µg/L	36	<0.66	--	--	--	<0.725	--	--	--	--	<0.725	--	--	<0.733
N-Nitrosomethylethylamine	µg/L	0.008	<0.2	--	--	--	<0.22	--	--	--	--	<0.22	--	--	<0.222
N-Nitrosopiperidine	µg/L	NS	<0.15	--	--	--	<0.165	--	--	--	--	<0.165	--	--	<0.167
N-Nitrosopyrrolidine	µg/L	0.083	<0.23	--	--	--	<0.253	--	--	--	--	<0.253	--	--	<0.256
O,O,O-Triethyl phosphorothioate	µg/L	NS	<0.24	--	--	--	<0.264	--	--	--	--	<0.264	--	--	<0.267
o-Toluidine	µg/L	11	<0.181	--	--	--	<0.198	--	--	--	--	<0.198	--	--	<0.2
p-(Dimethylamino)azobenzene	µg/L	NS	<0.24	--	--	--	<0.264	--	--	--	--	<0.264	--	--	<0.267
Parathion-ethyl	µg/L	NS	<0.18	--	--	--	<0.198	--	--	--	--	<0.198	--	--	<0.2
Parathion-methyl	µg/L	1	<0.15	--	--	--	<0.165	--	--	--	--	<0.165	--	--	<0.167
Pentachlorobenzene	µg/L	NS	<0.22	--	--	--	<0.242	--	--	--	--	<0.242	--	--	<0.244
Pentachloronitrobenzene	µg/L	NS	<0.33	--	--	--	<0.363	--	--	--	--	<0.363	--	--	<0.367
Pentachlorophenol	µg/L	1	<0.244	--	--	--	<0.264	--	--	--	--	<0.264	--	--	<0.267
Phenacetin	µg/L	NS	<0.17	--	--	--	<0.187	--	--	--	--	<0.187	--	--	<0.189
Phenanthrene	µg/L	210	<0.6	--	--	--	<0.659	--	--	--	--	<0.659	--	--	<0.667
Phenol	µg/L	2000	<2.4	--	--	--	<2.64	--	--	--	--	<2.64	--	--	<2.67
Phorate	µg/L	1.4	<0.17	--	--	--	<0.187	--	--	--	--	<0.187	--	--	<0.189
Pronamide	µg/L	5	<0.26	--	--	--	<0.286	--	--	--	--	<0.286	--	--	<0.289
Pyrene	µg/L	210	***0.232 J***	***0.258 J***	<0.235	<0.237	<0.253	--	--	--	<0.23	<0.253	--	--	<0.256
Safrole	µg/L	NS	<0.2	--	--	--	<0.22	--	--	--	--	<0.22	--	--	<0.222
Thionazin	µg/L	NS	<0.31	--	--	--	<0.341	--	--	--	--	<0.341	--	--	<0.344
Volatile Organic Compounds															
1,1-Dichloropropene	µg/L	NS	<0.15	--	--	--	<0.15	--	--	--	--	<0.15	--	--	<0.15
1,2,4-Trichlorobenzene	µg/L	70	<0.16	--	--	--	<0.16	--	--	--	--	<0.16	--	--	<0.16
1,3-Dichlorobenzene	µg/L	600	<0.17	--	--	--	<0.17	--	--	--	--	<0.17	--	--	<0.17
1,3-Dichloropropane	µg/L	NS	<0.16	--	--	--	<0.16	--	--	--	--	<0.16	--	--	<0.16
2,2-Dichloropropane	µg/L	NS	<0.18	--	--	--	<0.18	--	--	--	--	<0.18	--	--	<0.18
Acrolein	µg/L	NS	<1.5	--	--	--	<1.5	--	--	--	--	<1.5	--	--	<1.5
Allyl chloride	µg/L	NS	<0.27	--	--	--	<0.27	--	--	--	--	<0.27	--	--	<0.27
Chloroprene	µg/L	NS	<0.19	--	--	--	<0.19	--	--	--	--	<0.19	--	--	<0.19
Dichlorodifluoromethane	µg/L	1000	<0.2	--	--	--	<0.2	--	--	--	--	<0.2	--	--	<0.2
Ethyl Methacrylate	µg/L	NS	<0.15	--	--	--	<0.15	--	--	--	--	<0.15	--	--	<0.15
Methacrylonitrile	µg/L	NS	<0.25	--	--	--	<0.25	--	--	--	--	<0.25	--	--	<0.25
Methyl Methacrylate	µg/L	NS	<0.15	--	--	--	<0.15	--	--	--	--	<0.15	--	--	<0.15
Naphthalene	µg/L	100	<0.37	--	--	--	<0.37	--	--	--	--	<0.37	--	--	<0.37
Propionitrile	µg/L	NS	<2	--	--	--	<2	--	--	--	--	<2	--	--	<2

Detections at or above the RL are shown in bold italics on gray background.
Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.
NS = No standard

Black Hawk County Landfill
Appendix I Results
Monitoring Well P-604C

Parameter Name	Units	GPS	Dec-14	Mar-15	Jun-15	Sep-15	Dec-15	Mar-16	Sep-16	Apr-17	Sep-17	Apr-18	Jul-18	Sep-18	Apr-19	Oct-19	Apr-20	Sep-20	Apr-21	Nov-21	May-22	Nov-22	Apr-23	Oct-23	May-24	Aug-24	Oct-24
Appendix I Inorganics																											
Total Suspended Solids	mg/L	NS	***6.75***	***4.5***	***1.63 J***	***10.3***	***11.9***	***1.13 J***	***2***	***2.38***	***2.63***	***1.38 J***	--	***2.63***	***2.75***	***1.38 J***	***16.1***	***6.62***	***7.67***	***12.3***	***2.5***	***22.8***	***13.3***	***8.67***	***80***	--	***6.63***
Turbidity, Field	NTU	NS	***6.645***	***3.482***	***3.307***	***5.643***	--	***1.136***	***0.8096***	***0.4386***	***0.9346***	***0.5668***	--	***3.245***	0	***0.9***	***1.97***	***3.61***	***2.57***	***0.64***	0	***6.08***	***6.95***	***12.23***	***59.32***	***14.26***	***1.31***
Turbidity, Lab	NTU	NS	***6.2***	***3.7***	<0.7	***8.3***	***8.3***	<0.4	***1.6***	<0.4	<0.4	***0.8 J***	--	<0.4	<0.4	***2.19***	***0.89 J***	--	--	--	--	--	--	--	--	--	--
Antimony	µg/L	6	***0.74 J***	***0.763 J***	***0.475 J***	***0.408 J***	***0.806 J***	***0.255 J***	<0.237	<0.185	***0.232 J***	<0.42	--	<0.42	<0.53	<0.53	<0.58	<0.51	<1.1	<1.1	<2.76	<0.69	<1	<1	<1	--	<1
Antimony, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	***1.17 J***	***1.28 J***	***1.11 J***	<0.945	<0.945	***0.684 J***	<0.672	***0.527 J***	***0.54 J***	***0.782 J***	--	<0.57	<0.75	<0.75	<0.88	<0.88	<0.75	<0.75	<3	<0.75	<0.53	<0.53	***1.55 J***	--	<0.53
Arsenic, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	***82.2***	***91.5***	***88.7***	***86.2***	***90***	***81.8***	***84.9***	***89.9***	***85.8***	***87.5***	--	***76.5***	***81.7***	***85***	***55.5***	***56.9***	***29.4***	***20.3***	***17.3***	***26.8***	***21.4***	***24.4***	***23***	--	***14.7***
Barium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	<0.039	<0.039	<0.039	<0.039	***0.087 J***	<0.221	<0.221	<0.125	<0.125	<0.19	--	<0.19	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<1.08	<0.27	<0.33	<0.33	<0.33	--	<0.33
Beryllium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	<0.112	<0.112	<0.112	<0.112	<0.112	<0.0351	<0.0351	<0.0441	<0.0441	<0.06	--	<0.06	<0.077	<0.039	<0.039	<0.049	<0.051	<0.051	<0.22	***0.082 J***	<0.1	<0.1	***0.229***	--	***0.193 J***
Cadmium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	***1.38 J***	***1.25 J***	***1.31 J***	***1.5 J***	***1.61 J***	***1.98 J***	***5.77***	***8.37***	***7.23***	***3.99 J***	--	***4.29 J***	***5.21***	***3.85 J***	***18.2***	***11.7***	***26.2***	***15.3***	<4.4	***8.86***	***9.95***	***13.2***	***4.99 J***	--	***1.65 J***
Chromium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	9.83	***1.24***	***0.963***	***0.595***	***0.481 J***	***0.521***	***0.265 J***	***0.145 J***	***0.068 J***	***0.074 J***	***0.133 J***	--	***0.065 J***	<0.091	<0.091	***0.133 J***	***0.235 J***	***0.126 J***	<0.19	<0.76	***0.327 J***	***0.318 J***	***0.191 J***	***29.4***	--	<0.17
Cobalt, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	1300	***3.07***	***1.29 J***	***1.2 J***	***1.8 J***	***3.94***	***1.42 J***	<1.22	<2.19	<2.19	<1.6	--	<1.6	<2	<2	<3.2	***1.5 J***	<1.4	<1.4	<7.2	<1.8	<1.8	<1.8	***5.82***	--	<1.8
Copper, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	***0.297 J***	***0.166 J***	<0.0967	***0.242 J***	***0.2 J***	<0.211	<0.211	<0.324	<0.324	<0.25	--	<0.25	<0.27	<0.27	<0.27	<0.11	<0.21	<0.21	<0.96	***0.398 J***	<0.24	<0.24	***0.574***	--	<0.26
Lead, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	µg/L	722	***37***	***19***	***8.9***	***9.03***	***7.53***	***5.75***	***2.91 J***	***3.83 J***	***1.98 J***	***3.09 J***	--	<3	***2.27 J***	***4.48 J***	***8.61***	***95.2***	***14.6***	***6.29***	<7.6	***1.9 J***	***2.75 J***	***2.01 J***	***81.5***	--	***9.04***
Nickel, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	<3.34	<3.34	<3.34	<3.34	<3.34	<0.63	<0.63	<0.928	<0.928	<0.9	--	<0.9	<1	<1	<1	***3.17 J***	<0.96	<0.96	<3.84	***1.97 J***	<1.4	<1.4	<1.4	--	<1.4
Selenium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	µg/L	100	<0.042	<0.042	<0.042	***0.144 J***	<0.042	<0.153	<0.153	***0.142 J***	<0.14	<0.3	--	<0.3	<0.37	<0.37	<0.37	<0.37	<0.42	<0.42	<1.96	***1.33***	<0.5	<0.5	<0.5	--	<0.5
Silver, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	<0.0325	<0.0325	<0.0325	<0.0325	<0.0325	<0.0255	<0.0255	<0.0644	<0.0644	<0.17	--	<0.17	<0.27	<0.27	<0.26	<0.26	<0.26	<0.26	<1.04	***0.614 J***	<0.26	***1.11***	<0.57	--	<0.57
Thallium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium	µg/L	35	<0.449	***0.819 J***	***0.639 J***	***0.73 J***	***0.767 J***	***0.478 J***	***0.429 J***	<0.84	<0.84	***0.671 J***	--	***0.588 J***	<0.82	<0.82	<0.82	<0.85	<1.1	<1.1	<4.4	<1.1	<1.1	<1.1	<1.1	--	<1.1
Vanadium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	2000	<6.95	<6.95	<6.95	<6.95	<6.95	<5.21	<5.21	<11.5	<11.5	<10	--	<10	<10	<10	<10	<10	<10	<10	<40	<10	<6.4	<6.4	***10.5 J***	--	<9.7
Zinc, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Appendix I Organics																											
1,1,1,2-Tetrachloroethane	µg/L	70	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38
1,1,1-Trichloroethane	µg/L	200	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19
1,1,2,2-Tetrachloroethane	µg/L	0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47
1,1,2-Trichloroethane	µg/L	5	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45
1,1-Dichloroethane	µg/L	140	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22
1,1-Dichloroethylene	µg/L	7	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56
1,2,3-Trichloropropane	µg/L	0.0058	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59
1,2-Dibromo-3-chloropropane	µg/L	0.2	<0.12	<0.12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2
1,2-Dibromoethane	µg/L	0.05	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34
1,2-Dichlorobenzene	µg/L	600	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37
1,2-Dichloroethane	µg/L	5	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	***0.417 J***	<0.39	<0.39
1,2-Dichloropropane	µg/L	5	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27
1,4-Dichlorobenzene	µg/L	75	<0.2	<0.2	<0.2	***1.14***	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23
2-Butanone	µg/L	4000	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<1.04	<1.04	<1.04	<2.1	<2.1	<2.1	<2.1	<2.1	***2.1 J***	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	***2.68 J***	***29.4***	<2.1
2-Hexanone	µg/L	NS	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
4-Methyl-2-pentanone	µg/L	560	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1
Acetone	µg/L	6300	<1.79	<1.79	***1.85 J***	<1.79	<1.79	<1.79	<1.79	***2.77 J***	***5.23 J***	***2.31 J***	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	***7.67 J***	<3.1	<3.1	<3.1	***716***	***14.6***	<3.1
Acrylonitrile	µg/L	0.32	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2
Benzene	µg/L	5	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	***0.612***	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	***1.4***	<0.22	<0.22
Bromochloromethane	µg/L	90	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54
Bromodichloromethane	µg/L	80	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39
Bromomethane	µg/L	10	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Carbon disulfide	µg/L	700	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45
Carbon Tetrachloride	µg/L	5	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65
Chlorobenzene	µg/L	100	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Chloroethane	µg/L	2800	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79
Chloromethane	µg/L	NS	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61
cis-1,2-Dichloroethylene	µg/L	70	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21
cis-1,3-Dichloropropene	µg/L	NS	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Dibromochloromethane	µg/L	80	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75
Dibromomethane	µg/L	70	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Dichloromethane	µg/L	5	<0.17	***0.251 J***	<0.17	<0.17	<0.17	<0.17	<0.17	***0.393 J***	<0.17	<0.17	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7
Ethylbenzene	µg/L	700	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	***0.22 J***	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31
Iodomethane	µg/L	NS	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7
Styrene	µg/L	100	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37
Tetrachloroethylene	µg/L	5	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48
Toluene	µg/L	1000	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	***0.256 J***	***0.36 J***	***1.95***	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	***0.712 J***	<0.43
Trans-1,2-dichloroethylene	µg/L	100	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27
trans-1,3-Dichloropropene	µg/L	NS	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56
trans-1,4-Dichloro-2-butene	µg/L	1.8	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Tribromomethane	µg/L	80	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78
Trichloroethylene	µg/L	5	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43
Trichlorofluoromethane	µg/L	2000	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38
Trichloromethane	µg/L	80	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3
Vinyl Acetate	µg/L	NS	<0.74	<0.74	<0.74	<0.74	<0.74	<0.74	<0.74	<0.74	<0.74	<0.74	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Vinyl Chloride	µg/L	2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.6	<0.6	<0.6	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18
Xylenes	µg/L	10000	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	***0.171 J***	***0.788 J***	***0.527 J***	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	***0.523 J***	<0.4

Detections at or above the RL are shown in bold italics on gray background.

Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.

NS = No standard

Black Hawk County Landfill
Appendix I Results
Monitoring Well P-703C

Parameter Name	Units	GPS	Nov-21	May-22	Aug-22	Oct-22	Apr-23	Oct-23	May-24	Oct-24
Appendix I Inorganics										
Total Suspended Solids	mg/L	NS	***5.5***	***1.25 J***	<1.7	<0.638	<1.7	<1.7	***2***	***2.38***
Turbidity, Field	NTU	NS	***1.68***	0	***0.54***	***4.34***	***0.39***	***1.57***	***1.24***	***4.11***
Turbidity, Lab	NTU	NS	--	--	--	--	--	--	--	--
Antimony	µg/L	6	<1.1	<0.69	<3.45	<0.69	<1	<1	<1	<1
Antimony, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	***1.54 J***	***1.2 J***	***6.04 J***	***0.976 J***	***1.17 J***	***1.03 J***	***1.24 J***	***1.02 J***
Arsenic, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--
Barium	µg/L	2000	***211***	***165***	***722***	***124***	***127***	***111***	***84.8***	***81.2***
Barium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	<0.27	<0.27	<1.35	<0.27	<0.33	<0.33	<0.33	<0.33
Beryllium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	<0.051	<0.055	<0.275	<0.055	<0.1	<0.1	<0.1	<0.1
Cadmium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--
Chromium	µg/L	100	<1.1	<1.1	<5.5	<1.1	<1.1	<1.1	<1.2	<1.2
Chromium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--
Cobalt	µg/L	9.83	***0.536***	***0.385 J***	***2.5***	***0.417 J***	***0.455 J***	***0.648***	***0.531***	***0.612***
Cobalt, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--
Copper	µg/L	1300	<1.4	<1.8	<9	<1.8	<1.8	<1.8	<1.8	<1.8
Copper, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--
Lead	µg/L	15	<0.21	<0.24	<1.2	<0.24	<0.24	<0.24	<0.26	<0.26
Lead, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--
Nickel	µg/L	722	<1.9	<1.9	<9.5	<1.9	<1.9	<1.9	<2.1	<2.1
Nickel, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--
Selenium	µg/L	50	<0.96	<0.96	<4.8	<0.96	<1.4	<1.4	<1.4	<1.4
Selenium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--
Silver	µg/L	100	<0.42	<0.49	***4.07 J***	<0.49	<0.5	<0.5	<0.5	<0.5
Silver, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--
Thallium	µg/L	2	<0.26	<0.26	<1.3	<0.26	<0.26	<0.26	<0.57	<0.57
Thallium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--
Vanadium	µg/L	35	<1.1	<1.1	<5.5	<1.1	<1.1	<1.1	<1.1	<1.1
Vanadium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--
Zinc	µg/L	2000	<10	<10	<50	<10	<6.4	***6.66 J***	<9.7	<9.7
Zinc, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--
Appendix I Organics										
1,1,1,2-Tetrachloroethane	µg/L	70	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38
1,1,1-Trichloroethane	µg/L	200	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19
1,1,2,2-Tetrachloroethane	µg/L	0.3	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47
1,1,2-Trichloroethane	µg/L	5	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45
1,1-Dichloroethane	µg/L	140	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22
1,1-Dichloroethylene	µg/L	7	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56
1,2,3-Trichloropropane	µg/L	0.0058	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59
1,2-Dibromo-3-chloropropane	µg/L	0.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2
1,2-Dibromoethane	µg/L	0.05	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34
1,2-Dichlorobenzene	µg/L	600	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37
1,2-Dichloroethane	µg/L	5	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39
1,2-Dichloropropane	µg/L	5	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27
1,4-Dichlorobenzene	µg/L	75	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23
2-Butanone	µg/L	4000	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1
2-Hexanone	µg/L	NS	<2	<2	<2	<2	<2	<2	<2	<2
4-Methyl-2-pentanone	µg/L	560	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1
Acetone	µg/L	6300	<3.1	***13.5***	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1
Acrylonitrile	µg/L	0.32	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2
Benzene	µg/L	5	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22
Bromochloromethane	µg/L	90	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54
Bromodichloromethane	µg/L	80	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39
Bromomethane	µg/L	10	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Carbon disulfide	µg/L	700	***3.53***	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45
Carbon Tetrachloride	µg/L	5	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65
Chlorobenzene	µg/L	100	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Chloroethane	µg/L	2800	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79
Chloromethane	µg/L	NS	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61
cis-1,2-Dichloroethylene	µg/L	70	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21
cis-1,3-Dichloropropene	µg/L	NS	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Dibromochloromethane	µg/L	80	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75
Dibromomethane	µg/L	70	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Dichloromethane	µg/L	5	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7
Ethylbenzene	µg/L	700	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31
Iodomethane	µg/L	NS	<7	<7	<7	<7	<7	<7	<7	<7
Styrene	µg/L	100	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37
Tetrachloroethylene	µg/L	5	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48
Toluene	µg/L	1000	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43
Trans-1,2-dichloroethylene	µg/L	100	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27
trans-1,3-Dichloropropene	µg/L	NS	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56
trans-1,4-Dichloro-2-butene	µg/L	1.8	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Tribromomethane	µg/L	80	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78
Trichloroethylene	µg/L	5	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43
Trichlorofluoromethane	µg/L	2000	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38
Trichloromethane	µg/L	80	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3
Vinyl Acetate	µg/L	NS	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Vinyl Chloride	µg/L	2	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18
Xylenes	µg/L	10000	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Detections at or above the RL are shown in bold italics on gray background.

Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.

NS = No standard

APPENDIX B-2
2024 SPRING LABORATORY REPORTS

eurofins | Environment Testing

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

ANALYTICAL REPORT

PREPARED FOR

Attn: Chris Oelkers
AECOM
501 Sycamore Street
Suite #222
Waterloo, Iowa 50703

Generated 5/2/2024 9:33:01 AM

JOB DESCRIPTION

Black Hawk County Landfill (IDNR)
Spring 2024

JOB NUMBER

310-279694-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

my EOL

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



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Job Narrative
310-279694-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 4/24/2024 11:15 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 4.1°C.

GC/MS VOA
Method 8260D: The continuing calibration verification (CCV) associated with batch 310-420094 recovered above the upper control limit for 2-Hexanone (35.2%D) and 4-Methyl-2-pentanone (34.1%D). The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated sample is impacted: (CCV 310-420094/3).

Method 8260D: The continuing calibration verification (CCV) associated with batch 310-420094 recovered above the upper control limit for Vinyl chloride (25.0%D) and Chloroethane (34.3%D). The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated sample is impacted: (CCV 310-420094/4).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Field Service / Mobile Lab
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Sample Summary

Client: AECOM
Job ID: 310-279694-1
Project/Site: Black Hawk County Landfill (IDNR)

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-279694-1	OW-221B	Water	04/23/24 16:00	04/24/24 11:15
310-279694-2	OW-222B	Water	04/23/24 14:45	04/24/24 11:15
310-279694-3	OW-223B	Water	04/23/24 13:45	04/24/24 11:15
310-279694-4	Trip Blank	Water	04/23/24 06:00	04/24/24 11:15

Detection Summary

Client: AECOM
Job ID: 310-279694-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-221B — Lab Sample ID: 310-279694-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	131		10.0	3.10	ug/L	1		8260D	Total/NA
Benzene	0.481	J	0.500	0.220	ug/L	1		8260D	Total/NA
cis-1,2-Dichloroethene	0.349	J	1.00	0.210	ug/L	1		8260D	Total/NA
Arsenic	10.6		2.00	0.530	ug/L	1		6020B	Total/NA
Barium	566		2.00	0.660	ug/L	1		6020B	Total/NA
Cobalt	3.07		0.500	0.170	ug/L	1		6020B	Total/NA
Nickel	2.97	J	5.00	2.10	ug/L	1		6020B	Total/NA
Total Suspended Solids	61.0		15.0	11.1	mg/L	1		I-3765-85	Total/NA
Field Turbidity	13.42				NTU	1		Field Sampling	Total/NA

Client Sample ID: OW-222B — Lab Sample ID: 310-279694-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	66.7		10.0	3.10	ug/L	1		8260D	Total/NA
Arsenic	1.30	J	2.00	0.530	ug/L	1		6020B	Total/NA
Barium	116		2.00	0.660	ug/L	1		6020B	Total/NA
Chromium	3.99	J	5.00	1.20	ug/L	1		6020B	Total/NA
Cobalt	8.11		0.500	0.170	ug/L	1		6020B	Total/NA
Copper	5.85		5.00	1.80	ug/L	1		6020B	Total/NA
Lead	0.273	J	0.500	0.260	ug/L	1		6020B	Total/NA
Nickel	15.9		5.00	2.10	ug/L	1		6020B	Total/NA
Total Suspended Solids	12.7		5.00	3.70	mg/L	1		I-3765-85	Total/NA
Field Turbidity	12.30				NTU	1		Field Sampling	Total/NA

Client Sample ID: OW-223B — Lab Sample ID: 310-279694-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	191		10.0	3.10	ug/L	1		8260D	Total/NA
Toluene	0.928	J	1.00	0.430	ug/L	1		8260D	Total/NA
Barium	64.3		2.00	0.660	ug/L	1		6020B	Total/NA
Chromium	4.48	J	5.00	1.20	ug/L	1		6020B	Total/NA
Cobalt	0.191	J	0.500	0.170	ug/L	1		6020B	Total/NA
Copper	5.94		5.00	1.80	ug/L	1		6020B	Total/NA
Nickel	6.21		5.00	2.10	ug/L	1		6020B	Total/NA
Field Turbidity	6.04				NTU	1		Field Sampling	Total/NA

Client Sample ID: Trip Blank — Lab Sample ID: 310-279694-4

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

Client: AECOM
Job ID: 310-279694-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-221B
Lab Sample ID: 310-279694-1
Date Collected: 04/23/24 16:00
Matrix: Water
Date Received: 04/24/24 11:15

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			04/29/24 13:53	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			04/29/24 13:53	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			04/29/24 13:53	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			04/29/24 13:53	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			04/29/24 13:53	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			04/29/24 13:53	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			04/29/24 13:53	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			04/29/24 13:53	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			04/29/24 13:53	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			04/29/24 13:53	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			04/29/24 13:53	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			04/29/24 13:53	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			04/29/24 13:53	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			04/29/24 13:53	1
2-Hexanone	<2.00		10.0	2.00	ug/L			04/29/24 13:53	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			04/29/24 13:53	1
Acetone	**131**		10.0	3.10	ug/L			04/29/24 13:53	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			04/29/24 13:53	1
Benzene	**0.481**	**J**	0.500	0.220	ug/L			04/29/24 13:53	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			04/29/24 13:53	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			04/29/24 13:53	1
Bromoform	<0.780		5.00	0.780	ug/L			04/29/24 13:53	1
Bromomethane	<1.10		4.00	1.10	ug/L			04/29/24 13:53	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			04/29/24 13:53	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			04/29/24 13:53	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			04/29/24 13:53	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			04/29/24 13:53	1
Chloroethane	<0.790		4.00	0.790	ug/L			04/29/24 13:53	1
Chloroform	<1.30		3.00	1.30	ug/L			04/29/24 13:53	1
Chloromethane	<0.610		3.00	0.610	ug/L			04/29/24 13:53	1
cis-1,2-Dichloroethene	**0.349**	**J**	1.00	0.210	ug/L			04/29/24 13:53	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			04/29/24 13:53	1
Dibromomethane	<0.330		1.00	0.330	ug/L			04/29/24 13:53	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			04/29/24 13:53	1
Iodomethane	<7.00		10.0	7.00	ug/L			04/29/24 13:53	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			04/29/24 13:53	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			04/29/24 13:53	1
o-Xylene	<0.400		1.00	0.400	ug/L			04/29/24 13:53	1
Styrene	<0.370		1.00	0.370	ug/L			04/29/24 13:53	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			04/29/24 13:53	1
Toluene	<0.430		1.00	0.430	ug/L			04/29/24 13:53	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			04/29/24 13:53	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			04/29/24 13:53	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			04/29/24 13:53	1
Trichloroethene	<0.430		1.00	0.430	ug/L			04/29/24 13:53	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			04/29/24 13:53	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			04/29/24 13:53	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			04/29/24 13:53	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			04/29/24 13:53	1

Client: AECOM
Job ID: 310-279694-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-221B
Lab Sample ID: 310-279694-1
Date Collected: 04/23/24 16:00
Matrix: Water
Date Received: 04/24/24 11:15

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*101*		*73 - 130*		*04/29/24 13:53*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*04/29/24 13:53*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*04/29/24 13:53*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		04/25/24 09:00	04/26/24 20:06	1
Arsenic	**10.6**		2.00	0.530	ug/L		04/25/24 09:00	04/29/24 13:53	1
Barium	**566**		2.00	0.660	ug/L		04/25/24 09:00	04/26/24 20:06	1
Beryllium	<0.330		1.00	0.330	ug/L		04/25/24 09:00	04/26/24 20:06	1
Cadmium	<0.100		0.200	0.100	ug/L		04/25/24 09:00	04/26/24 20:06	1
Chromium	<1.20		5.00	1.20	ug/L		04/25/24 09:00	04/26/24 20:06	1
Cobalt	**3.07**		0.500	0.170	ug/L		04/25/24 09:00	04/26/24 20:06	1
Copper	<1.80		5.00	1.80	ug/L		04/25/24 09:00	04/26/24 20:06	1
Lead	<0.260		0.500	0.260	ug/L		04/25/24 09:00	04/26/24 20:06	1
Nickel	**2.97**	**J**	5.00	2.10	ug/L		04/25/24 09:00	04/26/24 20:06	1
Selenium	<1.40		5.00	1.40	ug/L		04/25/24 09:00	04/26/24 20:06	1
Silver	<0.500		1.00	0.500	ug/L		04/25/24 09:00	04/26/24 20:06	1
Thallium	<0.570		1.00	0.570	ug/L		04/25/24 09:00	04/29/24 13:53	1
Vanadium	<1.10		5.00	1.10	ug/L		04/25/24 09:00	04/26/24 20:06	1
Zinc	<9.70		20.0	9.70	ug/L		04/25/24 09:00	04/26/24 20:06	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**61.0**		15.0	11.1	mg/L			04/25/24 17:19	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**13.42**				NTU			04/23/24 16:00	1

Client: AECOM
Job ID: 310-279694-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-222B
Lab Sample ID: 310-279694-2
Date Collected: 04/23/24 14:45
Matrix: Water
Date Received: 04/24/24 11:15

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			04/29/24 14:14	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			04/29/24 14:14	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			04/29/24 14:14	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			04/29/24 14:14	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			04/29/24 14:14	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			04/29/24 14:14	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			04/29/24 14:14	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			04/29/24 14:14	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			04/29/24 14:14	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			04/29/24 14:14	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			04/29/24 14:14	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			04/29/24 14:14	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			04/29/24 14:14	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			04/29/24 14:14	1
2-Hexanone	<2.00		10.0	2.00	ug/L			04/29/24 14:14	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			04/29/24 14:14	1
Acetone	**66.7**		10.0	3.10	ug/L			04/29/24 14:14	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			04/29/24 14:14	1
Benzene	<0.220		0.500	0.220	ug/L			04/29/24 14:14	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			04/29/24 14:14	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			04/29/24 14:14	1
Bromoform	<0.780		5.00	0.780	ug/L			04/29/24 14:14	1
Bromomethane	<1.10		4.00	1.10	ug/L			04/29/24 14:14	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			04/29/24 14:14	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			04/29/24 14:14	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			04/29/24 14:14	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			04/29/24 14:14	1
Chloroethane	<0.790		4.00	0.790	ug/L			04/29/24 14:14	1
Chloroform	<1.30		3.00	1.30	ug/L			04/29/24 14:14	1
Chloromethane	<0.610		3.00	0.610	ug/L			04/29/24 14:14	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			04/29/24 14:14	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			04/29/24 14:14	1
Dibromomethane	<0.330		1.00	0.330	ug/L			04/29/24 14:14	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			04/29/24 14:14	1
Iodomethane	<7.00		10.0	7.00	ug/L			04/29/24 14:14	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			04/29/24 14:14	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			04/29/24 14:14	1
o-Xylene	<0.400		1.00	0.400	ug/L			04/29/24 14:14	1
Styrene	<0.370		1.00	0.370	ug/L			04/29/24 14:14	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			04/29/24 14:14	1
Toluene	<0.430		1.00	0.430	ug/L			04/29/24 14:14	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			04/29/24 14:14	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			04/29/24 14:14	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			04/29/24 14:14	1
Trichloroethene	<0.430		1.00	0.430	ug/L			04/29/24 14:14	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			04/29/24 14:14	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			04/29/24 14:14	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			04/29/24 14:14	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			04/29/24 14:14	1

Client: AECOM
Job ID: 310-279694-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-222B
Lab Sample ID: 310-279694-2

Date Collected: 04/23/24 14:45
Matrix: Water

Date Received: 04/24/24 11:15

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*103*		*73 - 130*		*04/29/24 14:14*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*04/29/24 14:14*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*04/29/24 14:14*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		04/25/24 09:00	04/26/24 20:10	1
Arsenic	**1.30**	**J**	2.00	0.530	ug/L		04/25/24 09:00	04/29/24 13:55	1
Barium	**116**		2.00	0.660	ug/L		04/25/24 09:00	04/26/24 20:10	1
Beryllium	<0.330		1.00	0.330	ug/L		04/25/24 09:00	04/26/24 20:10	1
Cadmium	<0.100		0.200	0.100	ug/L		04/25/24 09:00	04/26/24 20:10	1
Chromium	**3.99**	**J**	5.00	1.20	ug/L		04/25/24 09:00	04/26/24 20:10	1
Cobalt	**8.11**		0.500	0.170	ug/L		04/25/24 09:00	04/26/24 20:10	1
Copper	**5.85**		5.00	1.80	ug/L		04/25/24 09:00	04/26/24 20:10	1
Lead	**0.273**	**J**	0.500	0.260	ug/L		04/25/24 09:00	04/26/24 20:10	1
Nickel	**15.9**		5.00	2.10	ug/L		04/25/24 09:00	04/26/24 20:10	1
Selenium	<1.40		5.00	1.40	ug/L		04/25/24 09:00	04/26/24 20:10	1
Silver	<0.500		1.00	0.500	ug/L		04/25/24 09:00	04/26/24 20:10	1
Thallium	<0.570		1.00	0.570	ug/L		04/25/24 09:00	04/29/24 13:55	1
Vanadium	<1.10		5.00	1.10	ug/L		04/25/24 09:00	04/26/24 20:10	1
Zinc	<9.70		20.0	9.70	ug/L		04/25/24 09:00	04/26/24 20:10	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**12.7**		5.00	3.70	mg/L			04/25/24 17:19	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**12.30**				NTU			04/23/24 14:45	1

Client: AECOM
Job ID: 310-279694-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-223B
Lab Sample ID: 310-279694-3
Date Collected: 04/23/24 13:45
Matrix: Water
Date Received: 04/24/24 11:15

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			04/29/24 14:36	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			04/29/24 14:36	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			04/29/24 14:36	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			04/29/24 14:36	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			04/29/24 14:36	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			04/29/24 14:36	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			04/29/24 14:36	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			04/29/24 14:36	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			04/29/24 14:36	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			04/29/24 14:36	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			04/29/24 14:36	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			04/29/24 14:36	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			04/29/24 14:36	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			04/29/24 14:36	1
2-Hexanone	<2.00		10.0	2.00	ug/L			04/29/24 14:36	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			04/29/24 14:36	1
Acetone	**191**		10.0	3.10	ug/L			04/29/24 14:36	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			04/29/24 14:36	1
Benzene	<0.220		0.500	0.220	ug/L			04/29/24 14:36	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			04/29/24 14:36	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			04/29/24 14:36	1
Bromoform	<0.780		5.00	0.780	ug/L			04/29/24 14:36	1
Bromomethane	<1.10		4.00	1.10	ug/L			04/29/24 14:36	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			04/29/24 14:36	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			04/29/24 14:36	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			04/29/24 14:36	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			04/29/24 14:36	1
Chloroethane	<0.790		4.00	0.790	ug/L			04/29/24 14:36	1
Chloroform	<1.30		3.00	1.30	ug/L			04/29/24 14:36	1
Chloromethane	<0.610		3.00	0.610	ug/L			04/29/24 14:36	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			04/29/24 14:36	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			04/29/24 14:36	1
Dibromomethane	<0.330		1.00	0.330	ug/L			04/29/24 14:36	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			04/29/24 14:36	1
Iodomethane	<7.00		10.0	7.00	ug/L			04/29/24 14:36	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			04/29/24 14:36	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			04/29/24 14:36	1
o-Xylene	<0.400		1.00	0.400	ug/L			04/29/24 14:36	1
Styrene	<0.370		1.00	0.370	ug/L			04/29/24 14:36	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			04/29/24 14:36	1
Toluene	**0.928**	**J**	1.00	0.430	ug/L			04/29/24 14:36	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			04/29/24 14:36	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			04/29/24 14:36	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			04/29/24 14:36	1
Trichloroethene	<0.430		1.00	0.430	ug/L			04/29/24 14:36	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			04/29/24 14:36	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			04/29/24 14:36	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			04/29/24 14:36	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			04/29/24 14:36	1

Client: AECOM
Job ID: 310-279694-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-223B
Lab Sample ID: 310-279694-3

Date Collected: 04/23/24 13:45
Matrix: Water

Date Received: 04/24/24 11:15

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*103*		*73 - 130*		*04/29/24 14:36*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*04/29/24 14:36*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*04/29/24 14:36*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		04/25/24 09:00	04/26/24 20:13	1
Arsenic	<0.530		2.00	0.530	ug/L		04/25/24 09:00	04/29/24 13:57	1
Barium	**64.3**		2.00	0.660	ug/L		04/25/24 09:00	04/26/24 20:13	1
Beryllium	<0.330		1.00	0.330	ug/L		04/25/24 09:00	04/26/24 20:13	1
Cadmium	<0.100		0.200	0.100	ug/L		04/25/24 09:00	04/26/24 20:13	1
Chromium	**4.48**	**J**	5.00	1.20	ug/L		04/25/24 09:00	04/26/24 20:13	1
Cobalt	**0.191**	**J**	0.500	0.170	ug/L		04/25/24 09:00	04/26/24 20:13	1
Copper	**5.94**		5.00	1.80	ug/L		04/25/24 09:00	04/26/24 20:13	1
Lead	<0.260		0.500	0.260	ug/L		04/25/24 09:00	04/26/24 20:13	1
Nickel	**6.21**		5.00	2.10	ug/L		04/25/24 09:00	04/26/24 20:13	1
Selenium	<1.40		5.00	1.40	ug/L		04/25/24 09:00	04/26/24 20:13	1
Silver	<0.500		1.00	0.500	ug/L		04/25/24 09:00	04/26/24 20:13	1
Thallium	<0.570		1.00	0.570	ug/L		04/25/24 09:00	04/29/24 13:57	1
Vanadium	<1.10		5.00	1.10	ug/L		04/25/24 09:00	04/26/24 20:13	1
Zinc	<9.70		20.0	9.70	ug/L		04/25/24 09:00	04/26/24 20:13	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	<3.70		5.00	3.70	mg/L			04/25/24 17:19	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**6.04**				NTU			04/23/24 13:45	1

Client: AECOM
Job ID: 310-279694-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Trip Blank
Lab Sample ID: 310-279694-4
Date Collected: 04/23/24 06:00
Matrix: Water
Date Received: 04/24/24 11:15

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			04/29/24 11:42	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			04/29/24 11:42	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			04/29/24 11:42	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			04/29/24 11:42	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			04/29/24 11:42	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			04/29/24 11:42	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			04/29/24 11:42	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			04/29/24 11:42	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			04/29/24 11:42	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			04/29/24 11:42	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			04/29/24 11:42	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			04/29/24 11:42	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			04/29/24 11:42	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			04/29/24 11:42	1
2-Hexanone	<2.00		10.0	2.00	ug/L			04/29/24 11:42	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			04/29/24 11:42	1
Acetone	<3.10		10.0	3.10	ug/L			04/29/24 11:42	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			04/29/24 11:42	1
Benzene	<0.220		0.500	0.220	ug/L			04/29/24 11:42	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			04/29/24 11:42	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			04/29/24 11:42	1
Bromoform	<0.780		5.00	0.780	ug/L			04/29/24 11:42	1
Bromomethane	<1.10		4.00	1.10	ug/L			04/29/24 11:42	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			04/29/24 11:42	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			04/29/24 11:42	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			04/29/24 11:42	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			04/29/24 11:42	1
Chloroethane	<0.790		4.00	0.790	ug/L			04/29/24 11:42	1
Chloroform	<1.30		3.00	1.30	ug/L			04/29/24 11:42	1
Chloromethane	<0.610		3.00	0.610	ug/L			04/29/24 11:42	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			04/29/24 11:42	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			04/29/24 11:42	1
Dibromomethane	<0.330		1.00	0.330	ug/L			04/29/24 11:42	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			04/29/24 11:42	1
Iodomethane	<7.00		10.0	7.00	ug/L			04/29/24 11:42	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			04/29/24 11:42	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			04/29/24 11:42	1
o-Xylene	<0.400		1.00	0.400	ug/L			04/29/24 11:42	1
Styrene	<0.370		1.00	0.370	ug/L			04/29/24 11:42	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			04/29/24 11:42	1
Toluene	<0.430		1.00	0.430	ug/L			04/29/24 11:42	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			04/29/24 11:42	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			04/29/24 11:42	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			04/29/24 11:42	1
Trichloroethene	<0.430		1.00	0.430	ug/L			04/29/24 11:42	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			04/29/24 11:42	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			04/29/24 11:42	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			04/29/24 11:42	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			04/29/24 11:42	1

Client: AECOM
Job ID: 310-279694-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Trip Blank
Lab Sample ID: 310-279694-4
Date Collected: 04/23/24 06:00
Matrix: Water
Date Received: 04/24/24 11:15

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	98		73 - 130		04/29/24 11:42	1
Toluene-d8 (Surr)	100		80 - 120		04/29/24 11:42	1
4-Bromofluorobenzene (Surr)	107		80 - 120		04/29/24 11:42	1

Definitions/Glossary

Client: AECOM
Job ID: 310-279694-1
Project/Site: Black Hawk County Landfill (IDNR)

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Surrogate Summary

Client: AECOM
Job ID: 310-279694-1
Project/Site: Black Hawk County Landfill (IDNR)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)							
		DBFM	TOL	BFB					
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)					
310-279694-1	OW-221B	101	99	101					
310-279694-2	OW-222B	103	102	101					
310-279694-3	OW-223B	103	101	101					
310-279694-4	Trip Blank	98	100	107					
LCS 310-420094/6	Lab Control Sample	93	106	97					
LCS 310-420094/7	Lab Control Sample	100	102	102					
MB 310-420094/5	Method Blank	102	101	98					

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Client: AECOM
Job ID: 310-279694-1
Project/Site: Black Hawk County Landfill (IDNR)

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 310-420094/5
Matrix: Water
Analysis Batch: 420094

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			04/29/24 10:15	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			04/29/24 10:15	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			04/29/24 10:15	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			04/29/24 10:15	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			04/29/24 10:15	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			04/29/24 10:15	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			04/29/24 10:15	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			04/29/24 10:15	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			04/29/24 10:15	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			04/29/24 10:15	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			04/29/24 10:15	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			04/29/24 10:15	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			04/29/24 10:15	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			04/29/24 10:15	1
2-Hexanone	<2.00		10.0	2.00	ug/L			04/29/24 10:15	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			04/29/24 10:15	1
Acetone	<3.10		10.0	3.10	ug/L			04/29/24 10:15	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			04/29/24 10:15	1
Benzene	<0.220		0.500	0.220	ug/L			04/29/24 10:15	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			04/29/24 10:15	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			04/29/24 10:15	1
Bromoform	<0.780		5.00	0.780	ug/L			04/29/24 10:15	1
Bromomethane	<1.10		4.00	1.10	ug/L			04/29/24 10:15	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			04/29/24 10:15	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			04/29/24 10:15	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			04/29/24 10:15	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			04/29/24 10:15	1
Chloroethane	<0.790		4.00	0.790	ug/L			04/29/24 10:15	1
Chloroform	<1.30		3.00	1.30	ug/L			04/29/24 10:15	1
Chloromethane	<0.610		3.00	0.610	ug/L			04/29/24 10:15	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			04/29/24 10:15	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			04/29/24 10:15	1
Dibromomethane	<0.330		1.00	0.330	ug/L			04/29/24 10:15	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			04/29/24 10:15	1
Iodomethane	<7.00		10.0	7.00	ug/L			04/29/24 10:15	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			04/29/24 10:15	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			04/29/24 10:15	1
o-Xylene	<0.400		1.00	0.400	ug/L			04/29/24 10:15	1
Styrene	<0.370		1.00	0.370	ug/L			04/29/24 10:15	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			04/29/24 10:15	1
Toluene	<0.430		1.00	0.430	ug/L			04/29/24 10:15	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			04/29/24 10:15	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			04/29/24 10:15	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			04/29/24 10:15	1
Trichloroethene	<0.430		1.00	0.430	ug/L			04/29/24 10:15	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			04/29/24 10:15	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			04/29/24 10:15	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			04/29/24 10:15	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-420094/5
Matrix: Water
Analysis Batch: 420094

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	<0.400		3.00	0.400	ug/L			04/29/24 10:15	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*102*		*73 - 130*		*04/29/24 10:15*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*04/29/24 10:15*	*1*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*04/29/24 10:15*	*1*

Lab Sample ID: LCS 310-420094/6
Matrix: Water
Analysis Batch: 420094

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	20.0	17.73		ug/L		89	71 - 120
1,1,1-Trichloroethane	20.0	18.48		ug/L		92	73 - 129
1,1,2,2-Tetrachloroethane	20.0	20.16		ug/L		101	68 - 124
1,1,2-Trichloroethane	20.0	19.51		ug/L		98	73 - 123
1,1-Dichloroethane	20.0	20.33		ug/L		102	70 - 127
1,1-Dichloroethene	20.0	20.30		ug/L		101	63 - 132
1,2,3-Trichloropropane	20.0	19.92		ug/L		100	65 - 127
1,2-Dibromo-3-Chloropropane	20.0	25.05		ug/L		125	50 - 150
1,2-Dibromoethane (EDB)	20.0	17.99		ug/L		90	75 - 125
1,2-Dichlorobenzene	20.0	19.57		ug/L		98	74 - 120
1,2-Dichloroethane	20.0	20.44		ug/L		102	71 - 125
1,2-Dichloropropane	20.0	20.37		ug/L		102	73 - 124
1,4-Dichlorobenzene	20.0	20.97		ug/L		105	72 - 120
2-Butanone (MEK)	40.0	48.39		ug/L		121	50 - 150
2-Hexanone	40.0	47.08		ug/L		118	60 - 140
4-Methyl-2-pentanone (MIBK)	40.0	48.01		ug/L		120	60 - 139
Acetone	40.0	51.80		ug/L		130	50 - 150
Acrylonitrile	200	226.5		ug/L		113	50 - 150
Benzene	20.0	18.71		ug/L		94	72 - 124
Bromochloromethane	20.0	16.53		ug/L		83	73 - 130
Bromodichloromethane	20.0	18.78		ug/L		94	74 - 122
Bromoform	20.0	16.57		ug/L		83	61 - 122
Carbon disulfide	20.0	22.02		ug/L		110	59 - 135
Carbon tetrachloride	20.0	17.26		ug/L		86	67 - 132
Chlorobenzene	20.0	18.60		ug/L		93	76 - 120
Chlorodibromomethane	20.0	16.57		ug/L		83	71 - 121
Chloroform	20.0	19.33		ug/L		97	72 - 125
cis-1,2-Dichloroethene	20.0	18.71		ug/L		94	74 - 123
cis-1,3-Dichloropropene	20.0	19.34		ug/L		97	71 - 125
Dibromomethane	20.0	18.63		ug/L		93	74 - 125
Ethylbenzene	20.0	19.50		ug/L		97	74 - 122
Iodomethane	20.0	15.31		ug/L		77	10 - 150
Methylene Chloride	20.0	20.21		ug/L		101	50 - 150
Styrene	20.0	19.36		ug/L		97	74 - 121
Tetrachloroethene	20.0	16.68		ug/L		83	71 - 130
Toluene	20.0	18.74		ug/L		94	74 - 123

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-420094/6
Matrix: Water
Analysis Batch: 420094

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
trans-1,2-Dichloroethene	20.0	19.16		ug/L		96	70 - 126
trans-1,3-Dichloropropene	20.0	20.27		ug/L		101	69 - 123
trans-1,4-Dichloro-2-butene	20.0	23.95		ug/L		120	50 - 150
Trichloroethene	20.0	18.45		ug/L		92	72 - 126
Vinyl acetate	40.0	37.93		ug/L		95	50 - 150
Xylenes, Total	40.0	36.66		ug/L		92	73 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*93*		*73 - 130*
Toluene-d8 (Surr)	*106*		*80 - 120*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*

Lab Sample ID: LCS 310-420094/7
Matrix: Water
Analysis Batch: 420094

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	19.63		ug/L		98	23 - 150
Chloroethane	20.0	24.91		ug/L		125	54 - 136
Chloromethane	20.0	26.12		ug/L		131	38 - 150
Trichlorofluoromethane	20.0	20.29		ug/L		101	54 - 149
Vinyl chloride	20.0	24.39		ug/L		122	56 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*100*		*73 - 130*
Toluene-d8 (Surr)	*102*		*80 - 120*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-419739/1-A
Matrix: Water
Analysis Batch: 420079

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 419739

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		04/25/24 09:00	04/26/24 18:06	1
Arsenic	<0.530		2.00	0.530	ug/L		04/25/24 09:00	04/26/24 18:06	1
Barium	<0.660		2.00	0.660	ug/L		04/25/24 09:00	04/26/24 18:06	1
Beryllium	<0.330		1.00	0.330	ug/L		04/25/24 09:00	04/26/24 18:06	1
Cadmium	<0.100		0.200	0.100	ug/L		04/25/24 09:00	04/26/24 18:06	1
Chromium	<1.20		5.00	1.20	ug/L		04/25/24 09:00	04/26/24 18:06	1
Cobalt	<0.170		0.500	0.170	ug/L		04/25/24 09:00	04/26/24 18:06	1
Copper	<1.80		5.00	1.80	ug/L		04/25/24 09:00	04/26/24 18:06	1
Lead	<0.260		0.500	0.260	ug/L		04/25/24 09:00	04/26/24 18:06	1
Nickel	<2.10		5.00	2.10	ug/L		04/25/24 09:00	04/26/24 18:06	1
Selenium	<1.40		5.00	1.40	ug/L		04/25/24 09:00	04/26/24 18:06	1
Silver	<0.500		1.00	0.500	ug/L		04/25/24 09:00	04/26/24 18:06	1
Thallium	<0.570		1.00	0.570	ug/L		04/25/24 09:00	04/26/24 18:06	1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 310-419739/1-A
Matrix: Water
Analysis Batch: 420079

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 419739

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vanadium	<1.10		5.00	1.10	ug/L		04/25/24 09:00	04/26/24 18:06	1
Zinc	<9.70		20.0	9.70	ug/L		04/25/24 09:00	04/26/24 18:06	1

Lab Sample ID: LCS 310-419739/2-A
Matrix: Water
Analysis Batch: 420079

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 419739

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	200	202.9		ug/L		101	80 - 120
Arsenic	200	190.1		ug/L		95	80 - 120
Barium	100	96.94		ug/L		97	80 - 120
Beryllium	100	96.60		ug/L		97	80 - 120
Cadmium	100	92.18		ug/L		92	80 - 120
Chromium	100	97.20		ug/L		97	80 - 120
Cobalt	100	98.50		ug/L		99	80 - 120
Copper	200	198.6		ug/L		99	80 - 120
Lead	200	202.6		ug/L		101	80 - 120
Nickel	200	205.8		ug/L		103	80 - 120
Selenium	400	367.3		ug/L		92	80 - 120
Silver	100	103.6		ug/L		104	80 - 120
Vanadium	100	93.29		ug/L		93	80 - 120
Zinc	200	185.8		ug/L		93	80 - 120

Lab Sample ID: LCS 310-419739/2-A
Matrix: Water
Analysis Batch: 420191

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 419739

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Thallium	100	102.7		ug/L		103	80 - 120

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: MB 310-419905/1
Matrix: Water
Analysis Batch: 419905

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<3.70		5.00	3.70	mg/L			04/25/24 17:19	1

Lab Sample ID: LCS 310-419905/2
Matrix: Water
Analysis Batch: 419905

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	108.0		mg/L		108	75 - 116

Client: AECOM
Job ID: 310-279694-1
Project/Site: Black Hawk County Landfill (IDNR)

Method: I-3765-85 - Residue, Non-filterable (TSS) (Continued)

Lab Sample ID: 310-279694-1 DU
Client Sample ID: OW-221B
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 419905

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Suspended Solids	61.0			65.00		mg/L				6	35

Client: AECOM
Job ID: 310-279694-1
Project/Site: Black Hawk County Landfill (IDNR)

GC/MS VOA

Analysis Batch: 420094

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-279694-1	OW-221B	Total/NA	Water	8260D	
310-279694-2	OW-222B	Total/NA	Water	8260D	
310-279694-3	OW-223B	Total/NA	Water	8260D	
310-279694-4	Trip Blank	Total/NA	Water	8260D	
MB 310-420094/5	Method Blank	Total/NA	Water	8260D	
LCS 310-420094/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-420094/7	Lab Control Sample	Total/NA	Water	8260D	

Metals

Prep Batch: 419739

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-279694-1	OW-221B	Total/NA	Water	3005A	
310-279694-2	OW-222B	Total/NA	Water	3005A	
310-279694-3	OW-223B	Total/NA	Water	3005A	
MB 310-419739/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-419739/2-A	Lab Control Sample	Total/NA	Water	3005A	

Analysis Batch: 420079

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-279694-1	OW-221B	Total/NA	Water	6020B	419739
310-279694-2	OW-222B	Total/NA	Water	6020B	419739
310-279694-3	OW-223B	Total/NA	Water	6020B	419739
MB 310-419739/1-A	Method Blank	Total/NA	Water	6020B	419739
LCS 310-419739/2-A	Lab Control Sample	Total/NA	Water	6020B	419739

Analysis Batch: 420191

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-279694-1	OW-221B	Total/NA	Water	6020B	419739
310-279694-2	OW-222B	Total/NA	Water	6020B	419739
310-279694-3	OW-223B	Total/NA	Water	6020B	419739
LCS 310-419739/2-A	Lab Control Sample	Total/NA	Water	6020B	419739

General Chemistry

Analysis Batch: 419905

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-279694-1	OW-221B	Total/NA	Water	I-3765-85	
310-279694-2	OW-222B	Total/NA	Water	I-3765-85	
310-279694-3	OW-223B	Total/NA	Water	I-3765-85	
MB 310-419905/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-419905/2	Lab Control Sample	Total/NA	Water	I-3765-85	
310-279694-1 DU	OW-221B	Total/NA	Water	I-3765-85	

Field Service / Mobile Lab

Analysis Batch: 420226

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-279694-1	OW-221B	Total/NA	Water	Field Sampling	
310-279694-2	OW-222B	Total/NA	Water	Field Sampling	
310-279694-3	OW-223B	Total/NA	Water	Field Sampling	

Lab Chronicle

Client: AECOM
Job ID: 310-279694-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-221B
Lab Sample ID: 310-279694-1
Date Collected: 04/23/24 16:00
Matrix: Water
Date Received: 04/24/24 11:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	420094	WSE8	EET CF	04/29/24 13:53
Total/NA	Prep	3005A			419739	KM3E	EET CF	04/25/24 09:00
Total/NA	Analysis	6020B		1	420079	NFT2	EET CF	04/26/24 20:06
Total/NA	Prep	3005A			419739	KM3E	EET CF	04/25/24 09:00
Total/NA	Analysis	6020B		1	420191	NFT2	EET CF	04/29/24 13:53
Total/NA	Analysis	I-3765-85		1	419905	A4XP	EET CF	04/25/24 17:19
Total/NA	Analysis	Field Sampling		1	420226	BJ0R	EET CF	04/23/24 16:00

Client Sample ID: OW-222B
Lab Sample ID: 310-279694-2
Date Collected: 04/23/24 14:45
Matrix: Water
Date Received: 04/24/24 11:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	420094	WSE8	EET CF	04/29/24 14:14
Total/NA	Prep	3005A			419739	KM3E	EET CF	04/25/24 09:00
Total/NA	Analysis	6020B		1	420079	NFT2	EET CF	04/26/24 20:10
Total/NA	Prep	3005A			419739	KM3E	EET CF	04/25/24 09:00
Total/NA	Analysis	6020B		1	420191	NFT2	EET CF	04/29/24 13:55
Total/NA	Analysis	I-3765-85		1	419905	A4XP	EET CF	04/25/24 17:19
Total/NA	Analysis	Field Sampling		1	420226	BJ0R	EET CF	04/23/24 14:45

Client Sample ID: OW-223B
Lab Sample ID: 310-279694-3
Date Collected: 04/23/24 13:45
Matrix: Water
Date Received: 04/24/24 11:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	420094	WSE8	EET CF	04/29/24 14:36
Total/NA	Prep	3005A			419739	KM3E	EET CF	04/25/24 09:00
Total/NA	Analysis	6020B		1	420079	NFT2	EET CF	04/26/24 20:13
Total/NA	Prep	3005A			419739	KM3E	EET CF	04/25/24 09:00
Total/NA	Analysis	6020B		1	420191	NFT2	EET CF	04/29/24 13:57
Total/NA	Analysis	I-3765-85		1	419905	A4XP	EET CF	04/25/24 17:19
Total/NA	Analysis	Field Sampling		1	420226	BJ0R	EET CF	04/23/24 13:45

Client Sample ID: Trip Blank
Lab Sample ID: 310-279694-4
Date Collected: 04/23/24 06:00
Matrix: Water
Date Received: 04/24/24 11:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	420094	WSE8	EET CF	04/29/24 11:42

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Accreditation/Certification Summary

Client: AECOM
Job ID: 310-279694-1
Project/Site: Black Hawk County Landfill (IDNR)

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8260D		Water	m,p-Xylene
8260D		Water	o-Xylene
Field Sampling		Water	Field Turbidity

Method Summary

Client: AECOM
Job ID: 310-279694-1
Project/Site: Black Hawk County Landfill (IDNR)

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
Field Sampling	Field Sampling	EPA	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
5030B	Purge and Trap	SW846	EET CF

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

eurofins | Environment Testing America

310-279694 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: AECOM

City/State: CITY Waterloo STATE IA Project: BHC

Receipt Information

Date/Time Received: DATE 4/4/24 TIME 1115 Received By: TD

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ Lab Field Services ☑ Client Drop-off ☐ Other:

Condition of Cooler/Containers

Sample(s) received in Cooler?	☑ Yes	☐ No	*If yes:* Cooler ID.
Multiple Coolers?	☐ Yes	☑ No	*If yes:* Cooler # _____ of _____
Cooler Custody Seals Present? No	☐ Yes	☑ No	*If yes:* Cooler custody seals intact? ☐ Yes ☐
Sample Custody Seals Present? No	☐ Yes	☑ No	*If yes:* Sample custody seals intact? ☐ Yes ☐
Trip Blank Present?	☑ Yes	☐ No	*If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☑ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other. _____ ☐ NONE

Thermometer ID: X Correction Factor (°C): 0.0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 4.1 Corrected Temp (°C): 4.1

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE: If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

Eurofins Cedar Falls
3019 Venture Way

Cedar Falls, IA 50613
phone 319 277.2401 fax 319.277 2425

Chain of Custody Record

eurofins Environment Testing America

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other IDNR

Eurofins Environment Testing America

Client Contact	**Project Manager: Chris Oelkers**	COC No
AECOM	Email Christopher Oelkers@aecom com	**Site Contact:** / **Date:** 4-24-24	1 of 1 COCs
501 Sycamore Street, Suite 222	**Tel/Fax:319-296-6878**	**Lab Contact:** / **Carrier:**	TALS Project #
Waterloo, IA 50703	**Analysis Turnaround Time** ☑ CALENDAR DAYS ☐ WORKING DAYS		Sampler
(319) 232-6531 Phone	TAT if different from Below ☑ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day		**For Lab Use Only:** Walk-in Client / Lab Sampling
(xxx) xxx-xxxx FAX			
Project Name Black Hawk Co IDNR			Job / SDG No
Site Black Hawk County Landfill			
P O #			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	Appendix I, TSS	Appendix II, TSS	2,4-D	4,4'-DDD	beta-BHC	delta BHC	Endosulfan I	Endosulfan sulfate	Endrin aldehyde	Silvex	Sulfide	Sample Specific Notes
OW-220B			G	GW		N		X		X							X		
OW-221B	4-23-24	1600	G	GW	5	N		X											Turbidity - 13.42 NTU
OW-222B	4-23-24	1445	G	GW	5	N		X											Turbidity - 12.30 NTU
OW-223B	4-23-24	1345	G	GW	5	N		X											Turbidity - 6.04 NTU
OW-224B			G	GW		N		X											
OW-225B			G	GW		N		X											
OW-226B			G	GW		N		X										X	
OW-227B			G	GW		N		X										X	
MW-319B			G	GW		N		X											
MW-320B			G	GW		N		X											
Trip [redacted] Blank-3	4-23-24	0600	G	GW	2	N		X											
MW-319B-FD			G	GW		N		X											

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No | Cooler Temp (°C) Obs'd._____ Corr'd._____ Therm ID No ._____

Relinquished by: Ben Porter	Company: Aecom	Date/Time 4-24-24	Received by:	Company	Date/Time 4/24/24 1115
Relinquished by:	Company	Date/Time	Received by:	Company	Date/Time
Relinquished by:	Company	Date/Time	Received in Laboratory by:	Company	Date/Time

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-279694-1

Login Number: 279694

List Source: Eurofins Cedar Falls

List Number: 1

Creator: Costello, Mackenzie K

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Chris Oelkers
AECOM
501 Sycamore Street
Suite #222
Waterloo, Iowa 50703

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JOB DESCRIPTION

Black Hawk County Landfill (IDNR)

JOB NUMBER

310-279790-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



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Authorized for release by
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Job Narrative
310-279790-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 4/25/2024 11:10 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.8°C.

GC/MS VOA
Method 8260D: The following sample was collected in a properly preserved vial; however, the pH was outside the required criteria when verified by the laboratory. The samples were analyzed within the 7-day holding time specified for unpreserved samples: OW-224B (310-279790-3) and OW-225B (310-279790-4).

Method 8260D: The continuing calibration verification (CCV) associated with batch 310-420224 recovered above the upper control limit for 2-Hexanone (32.0%D) and 4-Methyl-2-pentanone (30.2%D). The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated sample is impacted: (CCV 310-420224/3).

Method 8260D: The continuing calibration verification (CCV) associated with batch 310-420224 recovered above the upper control limit for Vinyl chloride (27.5%D) and Chloroethane (25.5%D). The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated sample is impacted: (CCV 310-420224/4).

Method 8260D: The following volatiles sample was diluted due to foaming at the time of sample preparation during the original sample analysis: OW-224B (310-279790-3). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Pesticides
Method 8081B: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 310-419890. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
Method 6020B: The reference method requires samples to be preserved to a pH of <2. The following samples were received with insufficient preservation at a pH of >2: OW-224B (310-279790-3) and OW-225B (310-279790-4). The sample(s) was preserved to the appropriate pH in the laboratory.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Field Service / Mobile Lab
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Sample Summary

Client: AECOM
Job ID: 310-279790-1
Project/Site: Black Hawk County Landfill (IDNR)

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-279790-1	OW-205B	Ground Water	04/24/24 13:30	04/25/24 11:10
310-279790-2	Trip Blank	Water	04/24/24 06:00	04/25/24 11:10
310-279790-3	OW-224B	Ground Water	04/24/24 14:30	04/25/24 11:10
310-279790-4	OW-225B	Ground Water	04/24/24 15:50	04/25/24 11:10

Detection Summary

Client: AECOM
Job ID: 310-279790-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-205B — Lab Sample ID: 310-279790-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	71.2		10.0	3.10	ug/L	1		8260D	Total/NA
Arsenic	9.06		2.00	0.530	ug/L	1		6020B	Total/NA
Barium	171	B	2.00	0.660	ug/L	1		6020B	Total/NA
Chromium	1.98	J	5.00	1.20	ug/L	1		6020B	Total/NA
Cobalt	3.69		0.500	0.170	ug/L	1		6020B	Total/NA
Nickel	12.6		5.00	2.10	ug/L	1		6020B	Total/NA
Total Suspended Solids	10.0		5.00	3.70	mg/L	1		I-3765-85	Total/NA
Field Turbidity	59.73				NTU	1		Field Sampling	Total/NA

Client Sample ID: Trip Blank — Lab Sample ID: 310-279790-2

No Detections.

Client Sample ID: OW-224B — Lab Sample ID: 310-279790-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	3.02	J	5.00	2.20	ug/L	10		8260D	Total/NA
Arsenic	5.70		2.00	0.530	ug/L	1		6020B	Total/NA
Barium	2580	B	8.00	2.64	ug/L	4		6020B	Total/NA
Cadmium	0.349		0.200	0.100	ug/L	1		6020B	Total/NA
Chromium	7.68		5.00	1.20	ug/L	1		6020B	Total/NA
Cobalt	32.5		0.500	0.170	ug/L	1		6020B	Total/NA
Copper	7.43		5.00	1.80	ug/L	1		6020B	Total/NA
Lead	1.44		0.500	0.260	ug/L	1		6020B	Total/NA
Nickel	172		5.00	2.10	ug/L	1		6020B	Total/NA
Total Suspended Solids	33.0		15.0	11.1	mg/L	1		I-3765-85	Total/NA
Field Turbidity	67.89				NTU	1		Field Sampling	Total/NA

Client Sample ID: OW-225B — Lab Sample ID: 310-279790-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	0.274	J	1.00	0.220	ug/L	1		8260D	Total/NA
1,4-Dichlorobenzene	0.791	J	1.00	0.230	ug/L	1		8260D	Total/NA
2-Butanone (MEK)	6.31	J	10.0	2.10	ug/L	1		8260D	Total/NA
Acetone	40.9		10.0	3.10	ug/L	1		8260D	Total/NA
Benzene	1.18		0.500	0.220	ug/L	1		8260D	Total/NA
Chlorobenzene	0.772	J	1.00	0.400	ug/L	1		8260D	Total/NA
cis-1,2-Dichloroethene	0.778	J	1.00	0.210	ug/L	1		8260D	Total/NA
Arsenic	5.86		2.00	0.530	ug/L	1		6020B	Total/NA
Barium	1710	B	2.00	0.660	ug/L	1		6020B	Total/NA
Cadmium	0.398		0.200	0.100	ug/L	1		6020B	Total/NA
Chromium	4.47	J	5.00	1.20	ug/L	1		6020B	Total/NA
Cobalt	33.3		0.500	0.170	ug/L	1		6020B	Total/NA
Copper	3.23	J	5.00	1.80	ug/L	1		6020B	Total/NA
Lead	0.957		0.500	0.260	ug/L	1		6020B	Total/NA
Nickel	144		5.00	2.10	ug/L	1		6020B	Total/NA
Vanadium	1.81	J	5.00	1.10	ug/L	1		6020B	Total/NA
Total Suspended Solids	42.5		7.50	5.55	mg/L	1		I-3765-85	Total/NA
Field Turbidity	48.28				NTU	1		Field Sampling	Total/NA

This Detection Summary does not include radiochemical test results.

Client: AECOM
Job ID: 310-279790-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-205B
Lab Sample ID: 310-279790-1
Date Collected: 04/24/24 13:30
Matrix: Ground Water
Date Received: 04/25/24 11:10

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/01/24 00:05	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/01/24 00:05	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/01/24 00:05	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/01/24 00:05	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/01/24 00:05	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/01/24 00:05	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/01/24 00:05	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/01/24 00:05	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/01/24 00:05	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/01/24 00:05	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/01/24 00:05	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/01/24 00:05	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/01/24 00:05	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/01/24 00:05	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/01/24 00:05	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/01/24 00:05	1
Acetone	**71.2**		10.0	3.10	ug/L			05/01/24 00:05	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/01/24 00:05	1
Benzene	<0.220		0.500	0.220	ug/L			05/01/24 00:05	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/01/24 00:05	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/01/24 00:05	1
Bromoform	<0.780		5.00	0.780	ug/L			05/01/24 00:05	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/01/24 00:05	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/01/24 00:05	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/01/24 00:05	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/01/24 00:05	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/01/24 00:05	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/01/24 00:05	1
Chloroform	<1.30		3.00	1.30	ug/L			05/01/24 00:05	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/01/24 00:05	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/01/24 00:05	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/01/24 00:05	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/01/24 00:05	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/01/24 00:05	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/01/24 00:05	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/01/24 00:05	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/01/24 00:05	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/01/24 00:05	1
Styrene	<0.370		1.00	0.370	ug/L			05/01/24 00:05	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/01/24 00:05	1
Toluene	<0.430		1.00	0.430	ug/L			05/01/24 00:05	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/01/24 00:05	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/01/24 00:05	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/01/24 00:05	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/01/24 00:05	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/01/24 00:05	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/01/24 00:05	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/01/24 00:05	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/01/24 00:05	1

Client: AECOM
Job ID: 310-279790-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-205B
Lab Sample ID: 310-279790-1

Date Collected: 04/24/24 13:30
Matrix: Ground Water

Date Received: 04/25/24 11:10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*100*		*73 - 130*		*05/01/24 00:05*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*05/01/24 00:05*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*05/01/24 00:05*	*1*

Method: SW846 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	<0.0276		0.0653	0.0276	ug/L		04/25/24 14:55	04/29/24 15:25	1
Endosulfan I	<0.0337		0.0653	0.0337	ug/L		04/25/24 14:55	04/29/24 15:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*87*		*10 - 136*	*04/25/24 14:55*	*04/29/24 15:25*	*1*
Tetrachloro-m-xylene (Surr)	*61*		*10 - 130*	*04/25/24 14:55*	*04/29/24 15:25*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		04/29/24 09:30	05/01/24 20:05	1
Arsenic	**9.06**		2.00	0.530	ug/L		04/29/24 09:30	05/01/24 20:05	1
Barium	**171**	**B**	2.00	0.660	ug/L		04/29/24 09:30	05/01/24 20:05	1
Beryllium	<0.330		1.00	0.330	ug/L		04/29/24 09:30	05/01/24 20:05	1
Cadmium	<0.100		0.200	0.100	ug/L		04/29/24 09:30	05/01/24 20:05	1
Chromium	**1.98**	**J**	5.00	1.20	ug/L		04/29/24 09:30	05/01/24 20:05	1
Cobalt	**3.69**		0.500	0.170	ug/L		04/29/24 09:30	05/01/24 20:05	1
Copper	<1.80		5.00	1.80	ug/L		04/29/24 09:30	05/01/24 20:05	1
Lead	<0.260		0.500	0.260	ug/L		04/29/24 09:30	05/01/24 20:05	1
Nickel	**12.6**		5.00	2.10	ug/L		04/29/24 09:30	05/01/24 20:05	1
Selenium	<1.40		5.00	1.40	ug/L		04/29/24 09:30	05/01/24 20:05	1
Silver	<0.500		1.00	0.500	ug/L		04/29/24 09:30	05/06/24 19:10	1
Thallium	<0.570		1.00	0.570	ug/L		04/29/24 09:30	05/01/24 20:05	1
Vanadium	<1.10		5.00	1.10	ug/L		04/29/24 09:30	05/07/24 16:49	1
Zinc	<9.70		20.0	9.70	ug/L		04/29/24 09:30	05/01/24 20:05	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide (SW846 9034)	<1.41		3.00	1.41	mg/L		04/30/24 12:52	04/30/24 13:32	1
Total Suspended Solids (USGS I-3765-85)	**10.0**		5.00	3.70	mg/L			04/25/24 18:59	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**59.73**				NTU			04/24/24 13:30	1

Client: AECOM
Job ID: 310-279790-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Trip Blank
Lab Sample ID: 310-279790-2
Date Collected: 04/24/24 06:00
Matrix: Water
Date Received: 04/25/24 11:10

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			04/30/24 19:44	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			04/30/24 19:44	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			04/30/24 19:44	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			04/30/24 19:44	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			04/30/24 19:44	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			04/30/24 19:44	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			04/30/24 19:44	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			04/30/24 19:44	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			04/30/24 19:44	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			04/30/24 19:44	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			04/30/24 19:44	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			04/30/24 19:44	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			04/30/24 19:44	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			04/30/24 19:44	1
2-Hexanone	<2.00		10.0	2.00	ug/L			04/30/24 19:44	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			04/30/24 19:44	1
Acetone	<3.10		10.0	3.10	ug/L			04/30/24 19:44	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			04/30/24 19:44	1
Benzene	<0.220		0.500	0.220	ug/L			04/30/24 19:44	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			04/30/24 19:44	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			04/30/24 19:44	1
Bromoform	<0.780		5.00	0.780	ug/L			04/30/24 19:44	1
Bromomethane	<1.10		4.00	1.10	ug/L			04/30/24 19:44	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			04/30/24 19:44	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			04/30/24 19:44	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			04/30/24 19:44	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			04/30/24 19:44	1
Chloroethane	<0.790		4.00	0.790	ug/L			04/30/24 19:44	1
Chloroform	<1.30		3.00	1.30	ug/L			04/30/24 19:44	1
Chloromethane	<0.610		3.00	0.610	ug/L			04/30/24 19:44	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			04/30/24 19:44	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			04/30/24 19:44	1
Dibromomethane	<0.330		1.00	0.330	ug/L			04/30/24 19:44	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			04/30/24 19:44	1
Iodomethane	<7.00		10.0	7.00	ug/L			04/30/24 19:44	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			04/30/24 19:44	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			04/30/24 19:44	1
o-Xylene	<0.400		1.00	0.400	ug/L			04/30/24 19:44	1
Styrene	<0.370		1.00	0.370	ug/L			04/30/24 19:44	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			04/30/24 19:44	1
Toluene	<0.430		1.00	0.430	ug/L			04/30/24 19:44	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			04/30/24 19:44	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			04/30/24 19:44	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			04/30/24 19:44	1
Trichloroethene	<0.430		1.00	0.430	ug/L			04/30/24 19:44	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			04/30/24 19:44	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			04/30/24 19:44	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			04/30/24 19:44	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			04/30/24 19:44	1

Client: AECOM
Job ID: 310-279790-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Trip Blank
Lab Sample ID: 310-279790-2
Date Collected: 04/24/24 06:00
Matrix: Water
Date Received: 04/25/24 11:10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	97		73 - 130		04/30/24 19:44	1
Toluene-d8 (Surr)	99		80 - 120		04/30/24 19:44	1
4-Bromofluorobenzene (Surr)	104		80 - 120		04/30/24 19:44	1

Client: AECOM
Job ID: 310-279790-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-224B
Lab Sample ID: 310-279790-3
Date Collected: 04/24/24 14:30
Matrix: Ground Water
Date Received: 04/25/24 11:10

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<3.80		10.0	3.80	ug/L			05/01/24 02:16	10
1,1,1-Trichloroethane	<1.90		10.0	1.90	ug/L			05/01/24 02:16	10
1,1,2,2-Tetrachloroethane	<4.70		10.0	4.70	ug/L			05/01/24 02:16	10
1,1,2-Trichloroethane	<4.50		10.0	4.50	ug/L			05/01/24 02:16	10
1,1-Dichloroethane	<2.20		10.0	2.20	ug/L			05/01/24 02:16	10
1,1-Dichloroethene	<5.60		20.0	5.60	ug/L			05/01/24 02:16	10
1,2,3-Trichloropropane	<5.90		10.0	5.90	ug/L			05/01/24 02:16	10
1,2-Dibromo-3-Chloropropane	<12.0		50.0	12.0	ug/L			05/01/24 02:16	10
1,2-Dibromoethane (EDB)	<3.40		10.0	3.40	ug/L			05/01/24 02:16	10
1,2-Dichlorobenzene	<3.70		10.0	3.70	ug/L			05/01/24 02:16	10
1,2-Dichloroethane	<3.90		10.0	3.90	ug/L			05/01/24 02:16	10
1,2-Dichloropropane	<2.70		10.0	2.70	ug/L			05/01/24 02:16	10
1,4-Dichlorobenzene	<2.30		10.0	2.30	ug/L			05/01/24 02:16	10
2-Butanone (MEK)	<21.0		100	21.0	ug/L			05/01/24 02:16	10
2-Hexanone	<20.0		100	20.0	ug/L			05/01/24 02:16	10
4-Methyl-2-pentanone (MIBK)	<21.0		100	21.0	ug/L			05/01/24 02:16	10
Acetone	<31.0		100	31.0	ug/L			05/01/24 02:16	10
Acrylonitrile	<22.0		50.0	22.0	ug/L			05/01/24 02:16	10
Benzene	**3.02**	**J**	5.00	2.20	ug/L			05/01/24 02:16	10
Bromochloromethane	<5.40		50.0	5.40	ug/L			05/01/24 02:16	10
Bromodichloromethane	<3.90		10.0	3.90	ug/L			05/01/24 02:16	10
Bromoform	<7.80		50.0	7.80	ug/L			05/01/24 02:16	10
Bromomethane	<11.0		40.0	11.0	ug/L			05/01/24 02:16	10
Carbon disulfide	<4.50		10.0	4.50	ug/L			05/01/24 02:16	10
Carbon tetrachloride	<6.50		20.0	6.50	ug/L			05/01/24 02:16	10
Chlorobenzene	<4.00		10.0	4.00	ug/L			05/01/24 02:16	10
Chlorodibromomethane	<7.50		50.0	7.50	ug/L			05/01/24 02:16	10
Chloroethane	<7.90		40.0	7.90	ug/L			05/01/24 02:16	10
Chloroform	<13.0		30.0	13.0	ug/L			05/01/24 02:16	10
Chloromethane	<6.10		30.0	6.10	ug/L			05/01/24 02:16	10
cis-1,2-Dichloroethene	<2.10		10.0	2.10	ug/L			05/01/24 02:16	10
cis-1,3-Dichloropropene	<2.50		50.0	2.50	ug/L			05/01/24 02:16	10
Dibromomethane	<3.30		10.0	3.30	ug/L			05/01/24 02:16	10
Ethylbenzene	<3.10		10.0	3.10	ug/L			05/01/24 02:16	10
Iodomethane	<70.0		100	70.0	ug/L			05/01/24 02:16	10
m,p-Xylene	<3.80		20.0	3.80	ug/L			05/01/24 02:16	10
Methylene Chloride	<17.0		50.0	17.0	ug/L			05/01/24 02:16	10
o-Xylene	<4.00		10.0	4.00	ug/L			05/01/24 02:16	10
Styrene	<3.70		10.0	3.70	ug/L			05/01/24 02:16	10
Tetrachloroethene	<4.80		10.0	4.80	ug/L			05/01/24 02:16	10
Toluene	<4.30		10.0	4.30	ug/L			05/01/24 02:16	10
trans-1,2-Dichloroethene	<2.70		10.0	2.70	ug/L			05/01/24 02:16	10
trans-1,3-Dichloropropene	<5.60		50.0	5.60	ug/L			05/01/24 02:16	10
trans-1,4-Dichloro-2-butene	<11.0		100	11.0	ug/L			05/01/24 02:16	10
Trichloroethene	<4.30		10.0	4.30	ug/L			05/01/24 02:16	10
Trichlorofluoromethane	<3.80		40.0	3.80	ug/L			05/01/24 02:16	10
Vinyl acetate	<25.0		100	25.0	ug/L			05/01/24 02:16	10
Vinyl chloride	<1.80		10.0	1.80	ug/L			05/01/24 02:16	10
Xylenes, Total	<4.00		30.0	4.00	ug/L			05/01/24 02:16	10

Client: AECOM
Job ID: 310-279790-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-224B
Lab Sample ID: 310-279790-3

Date Collected: 04/24/24 14:30
Matrix: Ground Water

Date Received: 04/25/24 11:10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*101*		*73 - 130*		*05/01/24 02:16*	*10*
Toluene-d8 (Surr)	*100*		*80 - 120*		*05/01/24 02:16*	*10*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*		*05/01/24 02:16*	*10*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		04/29/24 09:30	05/01/24 20:07	1
Arsenic	**5.70**		2.00	0.530	ug/L		04/29/24 09:30	05/01/24 20:07	1
Barium	**2580**	**B**	8.00	2.64	ug/L		04/29/24 09:30	05/06/24 19:12	4
Beryllium	<0.330		1.00	0.330	ug/L		04/29/24 09:30	05/01/24 20:07	1
Cadmium	**0.349**		0.200	0.100	ug/L		04/29/24 09:30	05/01/24 20:07	1
Chromium	**7.68**		5.00	1.20	ug/L		04/29/24 09:30	05/01/24 20:07	1
Cobalt	**32.5**		0.500	0.170	ug/L		04/29/24 09:30	05/01/24 20:07	1
Copper	**7.43**		5.00	1.80	ug/L		04/29/24 09:30	05/01/24 20:07	1
Lead	**1.44**		0.500	0.260	ug/L		04/29/24 09:30	05/01/24 20:07	1
Nickel	**172**		5.00	2.10	ug/L		04/29/24 09:30	05/01/24 20:07	1
Selenium	<1.40		5.00	1.40	ug/L		04/29/24 09:30	05/01/24 20:07	1
Silver	<2.00		4.00	2.00	ug/L		04/29/24 09:30	05/06/24 19:12	4
Thallium	<0.570		1.00	0.570	ug/L		04/29/24 09:30	05/01/24 20:07	1
Vanadium	<4.40		20.0	4.40	ug/L		04/29/24 09:30	05/07/24 17:07	4
Zinc	<9.70		20.0	9.70	ug/L		04/29/24 09:30	05/01/24 20:07	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**33.0**		15.0	11.1	mg/L			04/25/24 18:59	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**67.89**				NTU			04/24/24 14:30	1

Client: AECOM
Job ID: 310-279790-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-225B
Lab Sample ID: 310-279790-4
Date Collected: 04/24/24 15:50
Matrix: Ground Water
Date Received: 04/25/24 11:10

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/01/24 01:54	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/01/24 01:54	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/01/24 01:54	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/01/24 01:54	1
1,1-Dichloroethane	**0.274**	**J**	1.00	0.220	ug/L			05/01/24 01:54	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/01/24 01:54	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/01/24 01:54	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/01/24 01:54	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/01/24 01:54	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/01/24 01:54	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/01/24 01:54	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/01/24 01:54	1
1,4-Dichlorobenzene	**0.791**	**J**	1.00	0.230	ug/L			05/01/24 01:54	1
2-Butanone (MEK)	**6.31**	**J**	10.0	2.10	ug/L			05/01/24 01:54	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/01/24 01:54	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/01/24 01:54	1
Acetone	**40.9**		10.0	3.10	ug/L			05/01/24 01:54	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/01/24 01:54	1
Benzene	**1.18**		0.500	0.220	ug/L			05/01/24 01:54	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/01/24 01:54	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/01/24 01:54	1
Bromoform	<0.780		5.00	0.780	ug/L			05/01/24 01:54	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/01/24 01:54	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/01/24 01:54	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/01/24 01:54	1
Chlorobenzene	**0.772**	**J**	1.00	0.400	ug/L			05/01/24 01:54	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/01/24 01:54	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/01/24 01:54	1
Chloroform	<1.30		3.00	1.30	ug/L			05/01/24 01:54	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/01/24 01:54	1
cis-1,2-Dichloroethene	**0.778**	**J**	1.00	0.210	ug/L			05/01/24 01:54	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/01/24 01:54	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/01/24 01:54	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/01/24 01:54	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/01/24 01:54	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/01/24 01:54	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/01/24 01:54	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/01/24 01:54	1
Styrene	<0.370		1.00	0.370	ug/L			05/01/24 01:54	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/01/24 01:54	1
Toluene	<0.430		1.00	0.430	ug/L			05/01/24 01:54	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/01/24 01:54	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/01/24 01:54	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/01/24 01:54	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/01/24 01:54	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/01/24 01:54	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/01/24 01:54	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/01/24 01:54	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/01/24 01:54	1

Client: AECOM
Job ID: 310-279790-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-225B
Lab Sample ID: 310-279790-4

Date Collected: 04/24/24 15:50
Matrix: Ground Water

Date Received: 04/25/24 11:10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*100*		*73 - 130*		*05/01/24 01:54*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*05/01/24 01:54*	*1*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*		*05/01/24 01:54*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		04/29/24 09:30	05/01/24 20:09	1
Arsenic	**5.86**		2.00	0.530	ug/L		04/29/24 09:30	05/01/24 20:09	1
Barium	**1710**	**B**	2.00	0.660	ug/L		04/29/24 09:30	05/01/24 20:09	1
Beryllium	<0.330		1.00	0.330	ug/L		04/29/24 09:30	05/01/24 20:09	1
Cadmium	**0.398**		0.200	0.100	ug/L		04/29/24 09:30	05/01/24 20:09	1
Chromium	**4.47**	**J**	5.00	1.20	ug/L		04/29/24 09:30	05/01/24 20:09	1
Cobalt	**33.3**		0.500	0.170	ug/L		04/29/24 09:30	05/01/24 20:09	1
Copper	**3.23**	**J**	5.00	1.80	ug/L		04/29/24 09:30	05/01/24 20:09	1
Lead	**0.957**		0.500	0.260	ug/L		04/29/24 09:30	05/01/24 20:09	1
Nickel	**144**		5.00	2.10	ug/L		04/29/24 09:30	05/01/24 20:09	1
Selenium	<1.40		5.00	1.40	ug/L		04/29/24 09:30	05/01/24 20:09	1
Silver	<0.500		1.00	0.500	ug/L		04/29/24 09:30	05/06/24 19:14	1
Thallium	<0.570		1.00	0.570	ug/L		04/29/24 09:30	05/01/24 20:09	1
Vanadium	**1.81**	**J**	5.00	1.10	ug/L		04/29/24 09:30	05/07/24 17:10	1
Zinc	<9.70		20.0	9.70	ug/L		04/29/24 09:30	05/01/24 20:09	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**42.5**		7.50	5.55	mg/L			04/25/24 18:59	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**48.28**				NTU			04/24/24 15:50	1

Definitions/Glossary

Client: AECOM
Job ID: 310-279790-1
Project/Site: Black Hawk County Landfill (IDNR)

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Surrogate Summary

Client: AECOM
Job ID: 310-279790-1
Project/Site: Black Hawk County Landfill (IDNR)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Ground Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-279790-1	OW-205B	100	99	101
310-279790-3	OW-224B	101	100	102
310-279790-4	OW-225B	100	101	100

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-279790-2	Trip Blank	97	99	104
LCS 310-420224/6	Lab Control Sample	99	105	97
LCS 310-420224/7	Lab Control Sample	99	101	101
MB 310-420224/5	Method Blank	102	102	105

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Ground Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		DCB1	TCX1
Lab Sample ID	Client Sample ID	(10-136)	(10-130)
310-279790-1	OW-205B	87	61

Surrogate Legend

DCB = DCB Decachlorobiphenyl (Surr)
TCX = Tetrachloro-m-xylene (Surr)

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		DCB1	TCX1
Lab Sample ID	Client Sample ID	(10-136)	(10-130)
LCS 310-419890/2-A	Lab Control Sample	88	60
LCSD 310-419890/3-A	Lab Control Sample Dup	105	59
MB 310-419890/1-A	Method Blank	92	48

Surrogate Legend

DCB = DCB Decachlorobiphenyl (Surr)
TCX = Tetrachloro-m-xylene (Surr)

Client: AECOM
Project/Site: Black Hawk County Landfill (IDNR)

Job ID: 310-279790-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 310-420224/5
Matrix: Water
Analysis Batch: 420224

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			04/30/24 18:17	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			04/30/24 18:17	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			04/30/24 18:17	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			04/30/24 18:17	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			04/30/24 18:17	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			04/30/24 18:17	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			04/30/24 18:17	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			04/30/24 18:17	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			04/30/24 18:17	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			04/30/24 18:17	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			04/30/24 18:17	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			04/30/24 18:17	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			04/30/24 18:17	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			04/30/24 18:17	1
2-Hexanone	<2.00		10.0	2.00	ug/L			04/30/24 18:17	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			04/30/24 18:17	1
Acetone	<3.10		10.0	3.10	ug/L			04/30/24 18:17	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			04/30/24 18:17	1
Benzene	<0.220		0.500	0.220	ug/L			04/30/24 18:17	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			04/30/24 18:17	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			04/30/24 18:17	1
Bromoform	<0.780		5.00	0.780	ug/L			04/30/24 18:17	1
Bromomethane	<1.10		4.00	1.10	ug/L			04/30/24 18:17	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			04/30/24 18:17	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			04/30/24 18:17	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			04/30/24 18:17	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			04/30/24 18:17	1
Chloroethane	<0.790		4.00	0.790	ug/L			04/30/24 18:17	1
Chloroform	<1.30		3.00	1.30	ug/L			04/30/24 18:17	1
Chloromethane	<0.610		3.00	0.610	ug/L			04/30/24 18:17	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			04/30/24 18:17	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			04/30/24 18:17	1
Dibromomethane	<0.330		1.00	0.330	ug/L			04/30/24 18:17	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			04/30/24 18:17	1
Iodomethane	<7.00		10.0	7.00	ug/L			04/30/24 18:17	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			04/30/24 18:17	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			04/30/24 18:17	1
o-Xylene	<0.400		1.00	0.400	ug/L			04/30/24 18:17	1
Styrene	<0.370		1.00	0.370	ug/L			04/30/24 18:17	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			04/30/24 18:17	1
Toluene	<0.430		1.00	0.430	ug/L			04/30/24 18:17	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			04/30/24 18:17	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			04/30/24 18:17	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			04/30/24 18:17	1
Trichloroethene	<0.430		1.00	0.430	ug/L			04/30/24 18:17	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			04/30/24 18:17	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			04/30/24 18:17	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			04/30/24 18:17	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-420224/5
Matrix: Water
Analysis Batch: 420224

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	<0.400		3.00	0.400	ug/L			04/30/24 18:17	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*102*		*73 - 130*		*04/30/24 18:17*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*04/30/24 18:17*	*1*
4-Bromofluorobenzene (Surr)	*105*		*80 - 120*		*04/30/24 18:17*	*1*

Lab Sample ID: LCS 310-420224/6
Matrix: Water
Analysis Batch: 420224

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	20.0	18.05		ug/L		90	71 - 120
1,1,1-Trichloroethane	20.0	19.97		ug/L		100	73 - 129
1,1,2,2-Tetrachloroethane	20.0	20.73		ug/L		104	68 - 124
1,1,2-Trichloroethane	20.0	19.84		ug/L		99	73 - 123
1,1-Dichloroethane	20.0	22.97		ug/L		115	70 - 127
1,1-Dichloroethene	20.0	23.35		ug/L		117	63 - 132
1,2,3-Trichloropropane	20.0	20.02		ug/L		100	65 - 127
1,2-Dibromo-3-Chloropropane	20.0	22.99		ug/L		115	50 - 150
1,2-Dibromoethane (EDB)	20.0	18.64		ug/L		93	75 - 125
1,2-Dichlorobenzene	20.0	20.06		ug/L		100	74 - 120
1,2-Dichloroethane	20.0	22.23		ug/L		111	71 - 125
1,2-Dichloropropane	20.0	20.79		ug/L		104	73 - 124
1,4-Dichlorobenzene	20.0	21.16		ug/L		106	72 - 120
2-Butanone (MEK)	40.0	50.23		ug/L		126	50 - 150
2-Hexanone	40.0	44.54		ug/L		111	60 - 140
4-Methyl-2-pentanone (MIBK)	40.0	46.87		ug/L		117	60 - 139
Acetone	40.0	57.41		ug/L		144	50 - 150
Acrylonitrile	200	247.1		ug/L		124	50 - 150
Benzene	20.0	20.57		ug/L		103	72 - 124
Bromochloromethane	20.0	18.38		ug/L		92	73 - 130
Bromodichloromethane	20.0	19.25		ug/L		96	74 - 122
Bromoform	20.0	16.42		ug/L		82	61 - 122
Carbon disulfide	20.0	25.65		ug/L		128	59 - 135
Carbon tetrachloride	20.0	19.06		ug/L		95	67 - 132
Chlorobenzene	20.0	18.84		ug/L		94	76 - 120
Chlorodibromomethane	20.0	16.97		ug/L		85	71 - 121
Chloroform	20.0	21.58		ug/L		108	72 - 125
cis-1,2-Dichloroethene	20.0	20.82		ug/L		104	74 - 123
cis-1,3-Dichloropropene	20.0	19.63		ug/L		98	71 - 125
Dibromomethane	20.0	19.19		ug/L		96	74 - 125
Ethylbenzene	20.0	20.26		ug/L		101	74 - 122
Iodomethane	20.0	19.72		ug/L		99	10 - 150
Methylene Chloride	20.0	23.15		ug/L		116	50 - 150
Styrene	20.0	19.41		ug/L		97	74 - 121
Tetrachloroethene	20.0	17.27		ug/L		86	71 - 130
Toluene	20.0	19.37		ug/L		97	74 - 123

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-420224/6
Matrix: Water
Analysis Batch: 420224

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
trans-1,2-Dichloroethene	20.0	20.45		ug/L		102	70 - 126
trans-1,3-Dichloropropene	20.0	20.14		ug/L		101	69 - 123
trans-1,4-Dichloro-2-butene	20.0	22.27		ug/L		111	50 - 150
Trichloroethene	20.0	19.50		ug/L		98	72 - 126
Vinyl acetate	40.0	38.62		ug/L		97	50 - 150
Xylenes, Total	40.0	37.81		ug/L		95	73 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*99*		*73 - 130*
Toluene-d8 (Surr)	*105*		*80 - 120*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*

Lab Sample ID: LCS 310-420224/7
Matrix: Water
Analysis Batch: 420224

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	20.50		ug/L		103	23 - 150
Chloroethane	20.0	24.36		ug/L		122	54 - 136
Chloromethane	20.0	26.73		ug/L		134	38 - 150
Trichlorofluoromethane	20.0	20.58		ug/L		103	54 - 149
Vinyl chloride	20.0	24.24		ug/L		121	56 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*99*		*73 - 130*
Toluene-d8 (Surr)	*101*		*80 - 120*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*

Method: 8081B - Organochlorine Pesticides (GC)

Lab Sample ID: MB 310-419890/1-A
Matrix: Water
Analysis Batch: 420106

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 419890

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	<0.0270		0.0640	0.0270	ug/L		04/25/24 14:55	04/29/24 13:31	1
Endosulfan I	<0.0330		0.0640	0.0330	ug/L		04/25/24 14:55	04/29/24 13:31	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*92*		*10 - 136*	*04/25/24 14:55*	*04/29/24 13:31*	*1*
Tetrachloro-m-xylene (Surr)	*48*		*10 - 130*	*04/25/24 14:55*	*04/29/24 13:31*	*1*

Lab Sample ID: LCS 310-419890/2-A
Matrix: Water
Analysis Batch: 420106

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 419890

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
4,4'-DDD	1.00	0.8924		ug/L		89	36 - 149

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: LCS 310-419890/2-A
Matrix: Water
Analysis Batch: 420106

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 419890

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Endosulfan I			1.00	0.2461		ug/L		25	10 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl (Surr)	*88*		*10 - 136*
Tetrachloro-m-xylene (Surr)	*60*		*10 - 130*

Lab Sample ID: LCSD 310-419890/3-A
Matrix: Water
Analysis Batch: 420106

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 419890

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
4,4'-DDD			1.00	0.9469		ug/L		95	36 - 149	6	35
Endosulfan I			1.00	0.2592		ug/L		26	10 - 120	5	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
DCB Decachlorobiphenyl (Surr)	*105*		*10 - 136*
Tetrachloro-m-xylene (Surr)	*59*		*10 - 130*

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-419957/1-A
Matrix: Water
Analysis Batch: 420438

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 419957

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		04/29/24 09:30	05/01/24 18:46	1
Arsenic	<0.530		2.00	0.530	ug/L		04/29/24 09:30	05/01/24 18:46	1
Barium	0.8270	J	2.00	0.660	ug/L		04/29/24 09:30	05/01/24 18:46	1
Beryllium	<0.330		1.00	0.330	ug/L		04/29/24 09:30	05/01/24 18:46	1
Cadmium	<0.100		0.200	0.100	ug/L		04/29/24 09:30	05/01/24 18:46	1
Chromium	<1.20		5.00	1.20	ug/L		04/29/24 09:30	05/01/24 18:46	1
Cobalt	<0.170		0.500	0.170	ug/L		04/29/24 09:30	05/01/24 18:46	1
Copper	<1.80		5.00	1.80	ug/L		04/29/24 09:30	05/01/24 18:46	1
Lead	<0.260		0.500	0.260	ug/L		04/29/24 09:30	05/01/24 18:46	1
Nickel	<2.10		5.00	2.10	ug/L		04/29/24 09:30	05/01/24 18:46	1
Selenium	<1.40		5.00	1.40	ug/L		04/29/24 09:30	05/01/24 18:46	1
Thallium	<0.570		1.00	0.570	ug/L		04/29/24 09:30	05/01/24 18:46	1
Vanadium	<1.10		5.00	1.10	ug/L		04/29/24 09:30	05/01/24 18:46	1
Zinc	<9.70		20.0	9.70	ug/L		04/29/24 09:30	05/01/24 18:46	1

Lab Sample ID: MB 310-419957/1-A
Matrix: Water
Analysis Batch: 420833

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 419957

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	<0.500		1.00	0.500	ug/L		04/29/24 09:30	05/06/24 18:31	1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 310-419957/2-A
Matrix: Water
Analysis Batch: 420438

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 419957

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	200	213.5		ug/L		107	80 - 120
Arsenic	200	207.9		ug/L		104	80 - 120
Barium	100	104.6		ug/L		105	80 - 120
Beryllium	100	103.5		ug/L		103	80 - 120
Cadmium	100	102.6		ug/L		103	80 - 120
Chromium	100	108.8		ug/L		109	80 - 120
Cobalt	100	118.9		ug/L		119	80 - 120
Copper	200	224.0		ug/L		112	80 - 120
Lead	200	215.3		ug/L		108	80 - 120
Nickel	200	217.0		ug/L		108	80 - 120
Selenium	400	390.9		ug/L		98	80 - 120
Thallium	100	115.2		ug/L		115	80 - 120
Vanadium	100	90.74		ug/L		91	80 - 120
Zinc	200	197.3		ug/L		99	80 - 120

Lab Sample ID: LCS 310-419957/2-A
Matrix: Water
Analysis Batch: 420833

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 419957

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Silver	100	109.5		ug/L		110	80 - 120

Method: 9034 - Sulfide, Acid soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 240-611346/1-A
Matrix: Water
Analysis Batch: 611356

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 611346

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.41		3.00	1.41	mg/L		04/30/24 12:52	04/30/24 13:32	1

Lab Sample ID: LCS 240-611346/2-A
Matrix: Water
Analysis Batch: 611356

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 611346

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfide	8.53	8.533		mg/L		100	70 - 120

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: MB 310-419910/1
Matrix: Water
Analysis Batch: 419910

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<3.70		5.00	3.70	mg/L			04/25/24 18:59	1

Client: AECOM
Job ID: 310-279790-1
Project/Site: Black Hawk County Landfill (IDNR)

Method: I-3765-85 - Residue, Non-filterable (TSS) (Continued)

Lab Sample ID: LCS 310-419910/2
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 419910

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Suspended Solids			100	101.0		mg/L		101	75 - 116		

QC Association Summary

Client: AECOM
Job ID: 310-279790-1
Project/Site: Black Hawk County Landfill (IDNR)

GC/MS VOA

Analysis Batch: 420224

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-279790-1	OW-205B	Total/NA	Ground Water	8260D	
310-279790-2	Trip Blank	Total/NA	Water	8260D	
310-279790-3	OW-224B	Total/NA	Ground Water	8260D	
310-279790-4	OW-225B	Total/NA	Ground Water	8260D	
MB 310-420224/5	Method Blank	Total/NA	Water	8260D	
LCS 310-420224/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-420224/7	Lab Control Sample	Total/NA	Water	8260D	

GC Semi VOA

Prep Batch: 419890

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-279790-1	OW-205B	Total/NA	Ground Water	3510C	
MB 310-419890/1-A	Method Blank	Total/NA	Water	3510C	
LCS 310-419890/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 310-419890/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 420106

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-279790-1	OW-205B	Total/NA	Ground Water	8081B	419890
MB 310-419890/1-A	Method Blank	Total/NA	Water	8081B	419890
LCS 310-419890/2-A	Lab Control Sample	Total/NA	Water	8081B	419890
LCSD 310-419890/3-A	Lab Control Sample Dup	Total/NA	Water	8081B	419890

Metals

Prep Batch: 419957

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-279790-1	OW-205B	Total/NA	Ground Water	3005A	
310-279790-3	OW-224B	Total/NA	Ground Water	3005A	
310-279790-4	OW-225B	Total/NA	Ground Water	3005A	
MB 310-419957/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-419957/2-A	Lab Control Sample	Total/NA	Water	3005A	

Analysis Batch: 420438

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-279790-1	OW-205B	Total/NA	Ground Water	6020B	419957
310-279790-3	OW-224B	Total/NA	Ground Water	6020B	419957
310-279790-4	OW-225B	Total/NA	Ground Water	6020B	419957
MB 310-419957/1-A	Method Blank	Total/NA	Water	6020B	419957
LCS 310-419957/2-A	Lab Control Sample	Total/NA	Water	6020B	419957

Analysis Batch: 420833

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-279790-1	OW-205B	Total/NA	Ground Water	6020B	419957
310-279790-3	OW-224B	Total/NA	Ground Water	6020B	419957
310-279790-4	OW-225B	Total/NA	Ground Water	6020B	419957
MB 310-419957/1-A	Method Blank	Total/NA	Water	6020B	419957
LCS 310-419957/2-A	Lab Control Sample	Total/NA	Water	6020B	419957

QC Association Summary

Client: AECOM
Job ID: 310-279790-1
Project/Site: Black Hawk County Landfill (IDNR)

Metals

Analysis Batch: 420956

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-279790-1	OW-205B	Total/NA	Ground Water	6020B	419957
310-279790-3	OW-224B	Total/NA	Ground Water	6020B	419957
310-279790-4	OW-225B	Total/NA	Ground Water	6020B	419957

General Chemistry

Analysis Batch: 419910

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-279790-1	OW-205B	Total/NA	Ground Water	I-3765-85	
310-279790-3	OW-224B	Total/NA	Ground Water	I-3765-85	
310-279790-4	OW-225B	Total/NA	Ground Water	I-3765-85	
MB 310-419910/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-419910/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Prep Batch: 611346

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-279790-1	OW-205B	Total/NA	Ground Water	9030B	
MB 240-611346/1-A	Method Blank	Total/NA	Water	9030B	
LCS 240-611346/2-A	Lab Control Sample	Total/NA	Water	9030B	

Analysis Batch: 611356

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-279790-1	OW-205B	Total/NA	Ground Water	9034	611346
MB 240-611346/1-A	Method Blank	Total/NA	Water	9034	611346
LCS 240-611346/2-A	Lab Control Sample	Total/NA	Water	9034	611346

Field Service / Mobile Lab

Analysis Batch: 421181

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-279790-1	OW-205B	Total/NA	Ground Water	Field Sampling	
310-279790-3	OW-224B	Total/NA	Ground Water	Field Sampling	
310-279790-4	OW-225B	Total/NA	Ground Water	Field Sampling	

Lab Chronicle

Client: AECOM
Job ID: 310-279790-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-205B
Lab Sample ID: 310-279790-1
Date Collected: 04/24/24 13:30
Matrix: Ground Water
Date Received: 04/25/24 11:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	420224	WSE8	EET CF	05/01/24 00:05
Total/NA	Prep	3510C			419890	JT8P	EET CF	04/25/24 14:55
Total/NA	Analysis	8081B		1	420106	BW2O	EET CF	04/29/24 15:25
Total/NA	Prep	3005A			419957	KM3E	EET CF	04/29/24 09:30
Total/NA	Analysis	6020B		1	420956	NFT2	EET CF	05/07/24 16:49
Total/NA	Prep	3005A			419957	KM3E	EET CF	04/29/24 09:30
Total/NA	Analysis	6020B		1	420438	NFT2	EET CF	05/01/24 20:05
Total/NA	Prep	3005A			419957	KM3E	EET CF	04/29/24 09:30
Total/NA	Analysis	6020B		1	420833	NFT2	EET CF	05/06/24 19:10
Total/NA	Prep	9030B			611346	BLW	EET CLE	04/30/24 12:52
Total/NA	Analysis	9034		1	611356	BLW	EET CLE	04/30/24 13:32
Total/NA	Analysis	I-3765-85		1	419910	A4XP	EET CF	04/25/24 18:59
Total/NA	Analysis	Field Sampling		1	421181	PDE6	EET CF	04/24/24 13:30

Client Sample ID: Trip Blank
Lab Sample ID: 310-279790-2
Date Collected: 04/24/24 06:00
Matrix: Water
Date Received: 04/25/24 11:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	420224	WSE8	EET CF	04/30/24 19:44

Client Sample ID: OW-224B
Lab Sample ID: 310-279790-3
Date Collected: 04/24/24 14:30
Matrix: Ground Water
Date Received: 04/25/24 11:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		10	420224	WSE8	EET CF	05/01/24 02:16
Total/NA	Prep	3005A			419957	KM3E	EET CF	04/29/24 09:30
Total/NA	Analysis	6020B		4	420956	NFT2	EET CF	05/07/24 17:07
Total/NA	Prep	3005A			419957	KM3E	EET CF	04/29/24 09:30
Total/NA	Analysis	6020B		1	420438	NFT2	EET CF	05/01/24 20:07
Total/NA	Prep	3005A			419957	KM3E	EET CF	04/29/24 09:30
Total/NA	Analysis	6020B		4	420833	NFT2	EET CF	05/06/24 19:12
Total/NA	Analysis	I-3765-85		1	419910	A4XP	EET CF	04/25/24 18:59
Total/NA	Analysis	Field Sampling		1	421181	PDE6	EET CF	04/24/24 14:30

Client Sample ID: OW-225B
Lab Sample ID: 310-279790-4
Date Collected: 04/24/24 15:50
Matrix: Ground Water
Date Received: 04/25/24 11:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	420224	WSE8	EET CF	05/01/24 01:54
Total/NA	Prep	3005A			419957	KM3E	EET CF	04/29/24 09:30
Total/NA	Analysis	6020B		1	420956	NFT2	EET CF	05/07/24 17:10

Lab Chronicle

Client: AECOM
Job ID: 310-279790-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-225B
Lab Sample ID: 310-279790-4

Date Collected: 04/24/24 15:50
Matrix: Ground Water

Date Received: 04/25/24 11:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			419957	KM3E	EET CF	04/29/24 09:30
Total/NA	Analysis	6020B		1	420438	NFT2	EET CF	05/01/24 20:09
Total/NA	Prep	3005A			419957	KM3E	EET CF	04/29/24 09:30
Total/NA	Analysis	6020B		1	420833	NFT2	EET CF	05/06/24 19:14
Total/NA	Analysis	I-3765-85		1	419910	A4XP	EET CF	04/25/24 18:59
Total/NA	Analysis	Field Sampling		1	421181	PDE6	EET CF	04/24/24 15:50

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Accreditation/Certification Summary

Client: AECOM
Job ID: 310-279790-1
Project/Site: Black Hawk County Landfill (IDNR)

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8260D		Ground Water	m,p-Xylene
8260D		Ground Water	o-Xylene
8260D		Water	m,p-Xylene
8260D		Water	o-Xylene
Field Sampling		Ground Water	Field Turbidity

Laboratory: Eurofins Cleveland

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-28-25
Georgia	State	4062	02-27-25
Illinois	NELAP	200004	07-31-24
Iowa	State	421	06-01-25
Kentucky (WW)	State	KY98016	12-30-24
Minnesota	NELAP	039-999-348	12-31-24
New Jersey	NELAP	OH001	06-30-24
New York	NELAP	10975	04-02-25
Ohio VAP	State	ORELAP 4062	02-27-25
Oregon	NELAP	4062	02-27-25
Pennsylvania	NELAP	68-00340	08-31-24
Texas	NELAP	T104704517-22-19	08-31-24
USDA	US Federal Programs	P330-18-00281	01-05-27
Virginia	NELAP	460175	09-14-24
West Virginia DEP	State	210	12-31-24

Method Summary

Client: AECOM
Job ID: 310-279790-1
Project/Site: Black Hawk County Landfill (IDNR)

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CF
8081B	Organochlorine Pesticides (GC)	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
9034	Sulfide, Acid soluble and Insoluble (Titrimetric)	SW846	EET CLE
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
Field Sampling	Field Sampling	EPA	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET CF
5030B	Purge and Trap	SW846	EET CF
9030B	Sulfide, Distillation (Acid Soluble and Insoluble)	SW846	EET CLE

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

eurofins | Environment Testing America

310-279790 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: AECOM

City/State: CITY Waterloo STATE IA Project: BHC IDNR

Receipt Information

Date/Time Received: DATE 4/25/24 TIME 1110 Received By: TD

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ Lab Field Services ☑ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler?	☑ Yes	☐ No	*If yes:* Cooler ID:
Multiple Coolers?	☐ Yes	☑ No	*If yes:* Cooler # _____ of _____
Cooler Custody Seals Present?	☐ Yes	☑ No	*If yes:* Cooler custody seals intact? ☐ Yes ☐ No
Sample Custody Seals Present?	☐ Yes	☑ No	*If yes:* Sample custody seals intact? ☐ Yes ☐ No
Trip Blank Present?	☑ Yes	☐ No	*If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☑ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: X Correction Factor (°C): 0.0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 0.8 Corrected Temp (°C): 0.8

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE: If yes, contact PM before proceeding If no, proceed with login

Additional Comments

Eurofins Cedar Falls
3019 Venture Way

Cedar Falls, IA 50613
phone 319 277.2401 fax 319.277 2425

Chain of Custody Record

eurofins | Environment Testing America

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other IDNR

Eurofins Environment Testing America

Client Contact	**Project Manager: Chris Oelkers**		COC No
AECOM	Email Christopher Oelkers@aecom.com	**Site Contact:**	**Date:** 4-25-24 — 1 of 2 COCs
501 Sycamore Street, Suite 222	**Tel/Fax:319-296-6878**	**Lab Contact:**	**Carrier:** — TALS Project #
Waterloo, IA 50703	**Analysis Turnaround Time**		Sampler
(319) 232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS		**For Lab Use Only:**
(xxx) xxx-xxxx FAX	TAT if different from Below ____		Walk-in Client.
Project Name Black Hawk Co IDNR	☑ 2 weeks		Lab Sampling
Site Black Hawk County Landfill	☐ 1 week		
P O #	☐ 2 days		Job / SDG No
	☐ 1 day		

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Appendix I, TSS	Appendix II, TSS	2,4-D	4,4'-DDD	beta-BHC	delta BHC	Endosulfan I	Endosulfan sulfate	Endrin aldehyde	Silvex	Sulfide	Sample Specific Notes
OW-101B			G	GW		N		X											
OW-105B			G	GW		N		X											
OW-113B			G	GW		N		X										X	
OW-114B			G	GW		N		X											
OW-205B	4-24-24	1330	G	GW	8	N		X			X			X				X	Turbidity - 59.73 NTU
OW-209B			G	GW		N		X											
OW-212B			G	GW		N		X											
OW-213BR			G	GW		N		X											
OW-216BR			G	GW		N		X											
OW-219B			G	GW		N		X											
OW-219B-FD			G	GW		N		X											
Trip Blank	4-24-24	0600	G	W	2	N		X											

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for ____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No		Cooler Temp (°C) Obs'd. ____ Corr'd ____		Therm ID No. ____
Relinquished by: Ben Porter	Company: Accom	Date/Time: 4-25-24	Received by:	Company:	Date/Time: 4/25/24 1110
Relinquished by:	Company:	Date/Time	Received by:	Company:	Date/Time
Relinquished by:	Company:	Date/Time	Received in Laboratory by:	Company:	Date/Time

5/9/2024

Eurofins Cedar Falls
3019 Venture Way

Cedar Falls, IA 50613
phone 319 277.2401 fax 319.277 2425

Chain of Custody Record

eurofins Environment Testing America

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other IDNR

Eurofins Environment Testing America

Client Contact	Project Manager: Chris Oelkers	Site Contact:	Date: 4-25-24	COC No
AECOM	Email Christopher Oelkers@aecom com	Lab Contact:	Carrier:	2 of 2 COCs
501 Sycamore Street, Suite 222	Tel/Fax:319-296-6878			TALS Project #
Waterloo, IA 50703	Analysis Turnaround Time			Sampler
(319) 232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(xxx) xxx-xxxx FAX	TAT if different from Below ____			Walk-in Client
Project Name Black Hawk Co IDNR	☑ 2 weeks			Lab Sampling
Site Black Hawk County Landfill	☐ 1 week			Job / SDG No
P O #	☐ 2 days ☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Appendix I, TSS	Appendix II, TSS	2,4-D	4,4'-DDD	beta-BHC	delta BHC	Endosulfan I	Endosulfan sulfate	Endrin aldehyde	Silvex	Sulfide	Sample Specific Notes
OW-220B			G	GW		N		X		X							X		
OW-221B			G	GW		N		X											
OW-222B			G	GW		N		X											
OW-223B			G	GW		N		X											
OW-224B	4-24-24	1430	G	GW	5	N		X											Turbidity - 67.89 NTU
OW-225B	4-24-24	1550	G	GW	5	N		X											Turbidity - 48.28 NTU
OW-226B			G	GW		N		X										X	
OW-227B			G	GW		N		X										X	
MW-319B			G	GW		N		X											
MW-320B			G	GW		N		X											
Equipment Blank-1			G	GW		N		X											
MW-319B-FD			G	GW		N		X											

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for ____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No	Cooler Temp (°C) Obs'd ____ Corr'd. ____	Therm ID No. ____

Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Ben Porter	Accom	4-25-24			4/25/24 1110
Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Relinquished by	Company	Date/Time	Received in Laboratory by	Company	Date/Time

5/9/2024

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone: 319-277-2401 Fax: 319-277-2425

0.6 | 2.1

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Bindert, Zach T	Carrier Tracking No(s):	COC No: 310-71692.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Zach.Bindert@et.eurofinsus.com	State of Origin: Iowa	Page: Page 1 of 1
Company: Eurofins Environment Testing North Centr		Accreditations Required (See note): State - Iowa; State Program - Iowa		Job #: 310-279790-1
Address: 180 S. Van Buren Avenue, ,	Due Date Requested: 5/8/2024	Analysis Requested		Preservation Codes: -
City: Barberton	TAT Requested (days):			
State, Zip: OH, 44203				
Phone: 330-497-9396(Tel) 330-497-0772(Fax)	PO #:			
Email:	WO #:			
Project Name: Black Hawk County Landfill (IDNR)	Project #: 31017149			
Site: 310 - Black Hawk County (IDNR)	SSOW#:			Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9034_Calc/9030B Sulfide	Total Number of containers	Special Instructions/Note:
			Preservation Code:						G089
OW-205B (310-279790-1)	4/24/24	13:30 Central		Water			X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing North Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing North Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing North Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing North Central, LLC.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	T. Bindert	4-25-24 1435			4-26-24 1010	EETNC
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Eurofins – Cleveland Sample Receipt Form/Narrative Login # _____
Barberton Facility

Client Eurofins- CF Site Name _____ Cooler unpacked by ONR

Cooler Received on 4-26-24 Opened on 4-26-24

FedEx: 1st Grd (Exp) UPS FAS Waypoint Client Drop Off Eurofins Courier Other _____

Receipt After-hours Drop-off Date/Time _____ Storage Location _____

Eurofins Cooler # EC Foam Box Client Cooler Box Other _____

Packing material used (Bubble Wrap) Foam Plastic Bag None Other _____

COOLANT: (Wet Ice) Blue Ice Dry Ice Water None

1 Cooler temperature upon receipt ☐ See Multiple Cooler Form

IR GUN # 19 (CF +1.5 °C) Observed Cooler Temp 0.6 °C Corrected Cooler Temp. 2.1 °C

2	Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1	(Yes) No
	Were the seals on the outside of the cooler(s) signed & dated?	(Yes) No NA
	Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)?	Yes (No)
	-Were tamper/custody seals intact and uncompromised?	(Yes) No NA
3	Shippers' packing slip attached to the cooler(s)?	(Yes) No
4	Did custody papers accompany the sample(s)?	(Yes) No
5	Were the custody papers relinquished & signed in the appropriate place?	(Yes) No
6	Was/were the person(s) who collected the samples clearly identified on the COC?	Yes (No)
7	Did all bottles arrive in good condition (Unbroken)?	(Yes) No
8	Could all bottle labels (ID/Date/Time) be reconciled with the COC?	(Yes) No
9	For each sample, does the COC specify preservatives (Y(N), # of containers (Y/N), and sample type of grab/comp(Y(N)?	
10	Were correct bottle(s) used for the test(s) indicated?	(Yes) No
11	Sufficient quantity received to perform indicated analyses?	(Yes) No
12.	Are these work share samples and all listed on the COC?	(Yes) No
	If yes, Questions 13 17 have been checked at the originating laboratory	
13	Were all preserved sample(s) at the correct pH upon receipt?	Yes No NA pH Strip Lot# HC439975
14.	Were VOAs on the COC?	Yes No
15	Were air bubbles >6 mm in any VOA vials? ● ⬅ Larger than this	Yes No NA
16	Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____	Yes No
17	Was a LL Hg or Me Hg trip blank present? _____	Yes No

Tests that are not checked for pH by Receiving:
VOAs
Oil and Grease
TOC

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other

Concerning _____

18 CHAIN OF CUSTODY & SAMPLE DISCREPANCIES ☐ additional next page

Samples processed by:

19 SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.
Sample(s) _____ were received in a broken container
Sample(s) _____ were received with bubble >6 mm in diameter (Notify PM)

20 SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory
Time preserved _____ Preservative(s) added/Lot number(s) _____

VOA Sample Preservation Date/Time VOAs Frozen. _____



eurofins | Environment Testing **Temperature Controlled**

IF THIS SHIPMENT IS DELAYE
STORE REFRIGERATED (2° TO ° F)

A 2842 04.26
6 10:30
164
RT FZ

-0090(1016)

ORIGIN ID.ALOA (319) 277-2401
SAMPLE RECEIVING
EUROFINS TESTAMERICA
3019 VENTURE WAY

CEDAR FALLS, IA 50613
UNITED STATES US

SHIP
ACTW
CAD

BILL

TO SHIPPING/RECEIVING
EUROFINS ENVIRONMENT TESTING NORTH
180 S. VAN BUREN AVENUE

BARBERTON OH 44203
(330) 497-9396
REF: S310-92991

585C6/0FEC/AED7

FedEx Express

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Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-279790-1

Login Number: 279790

List Source: Eurofins Cedar Falls

List Number: 1

Creator: Homolar, Dana J

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

ANALYTICAL REPORT

PREPARED FOR

Attn: Chris Oelkers
AECOM
501 Sycamore Street
Suite #222
Waterloo, Iowa 50703

Generated 5/8/2024 4:29:13 PM

JOB DESCRIPTION

Black Hawk County Landfill (IDNR)
Spring 2024

JOB NUMBER

310-280147-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

my EOL

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



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Authorized for release by
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Job ID: 310-280147-1 — Eurofins Cedar Falls

Job Narrative
310-280147-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 5/1/2024 9:40 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 4.9°C.

GC/MS VOA
Method 8260D: The continuing calibration verification (CCV) associated with batch 310-420650 recovered above the upper control limit for 4-Methyl-2-pentanone (23.7%D). The samples associated with this CCV were non-detects for the affected analyte; therefore, the data have been reported. The associated sample is impacted: (CCV 310-420650/3).

Method 8260D: The continuing calibration verification (CCV) associated with batch 310-420650 recovered above the upper control limit for Vinyl chloride (24.0%D) and Chloroethane (21.3%D). The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated sample is impacted: (CCV 310-420650/4).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Field Service / Mobile Lab
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Sample Summary

Client: AECOM
Job ID: 310-280147-1
Project/Site: Black Hawk County Landfill (IDNR)

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-280147-1	MW-709B	Water	04/30/24 11:30	05/01/24 09:40
310-280147-2	MW-711B	Water	04/30/24 12:20	05/01/24 09:40
310-280147-3	MW-712B	Water	04/30/24 13:45	05/01/24 09:40
310-280147-4	Trip Blank	Water	04/30/24 06:00	05/01/24 09:40

Detection Summary

Client: AECOM
Job ID: 310-280147-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: MW-709B — Lab Sample ID: 310-280147-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	87.8		2.00	0.660	ug/L	1		6020B	Total/NA
Nickel	2.42	J	5.00	2.10	ug/L	1		6020B	Total/NA
Total Suspended Solids	2.75		1.88	1.39	mg/L	1		I-3765-85	Total/NA
Field Turbidity	7.09				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-711B — Lab Sample ID: 310-280147-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.878	J	2.00	0.530	ug/L	1		6020B	Total/NA
Barium	43.5		2.00	0.660	ug/L	1		6020B	Total/NA
Cadmium	0.116	J	0.200	0.100	ug/L	1		6020B	Total/NA
Cobalt	4.43		0.500	0.170	ug/L	1		6020B	Total/NA
Nickel	19.5		5.00	2.10	ug/L	1		6020B	Total/NA
Total Suspended Solids	7.88		1.88	1.39	mg/L	1		I-3765-85	Total/NA
Field Turbidity	26.14				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-712B — Lab Sample ID: 310-280147-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.537	J	2.00	0.530	ug/L	1		6020B	Total/NA
Barium	63.0		2.00	0.660	ug/L	1		6020B	Total/NA
Cadmium	0.131	J	0.200	0.100	ug/L	1		6020B	Total/NA
Cobalt	6.02		0.500	0.170	ug/L	1		6020B	Total/NA
Nickel	7.24		5.00	2.10	ug/L	1		6020B	Total/NA
Field Turbidity	2.63				NTU	1		Field Sampling	Total/NA

Client Sample ID: Trip Blank — Lab Sample ID: 310-280147-4

No Detections.

This Detection Summary does not include radiochemical test results.

Client: AECOM
Job ID: 310-280147-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: MW-709B
Lab Sample ID: 310-280147-1
Date Collected: 04/30/24 11:30
Matrix: Water
Date Received: 05/01/24 09:40

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/04/24 17:39	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/04/24 17:39	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/04/24 17:39	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/04/24 17:39	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/04/24 17:39	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/04/24 17:39	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/04/24 17:39	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/04/24 17:39	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/04/24 17:39	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/04/24 17:39	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/04/24 17:39	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/04/24 17:39	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/04/24 17:39	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/04/24 17:39	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/04/24 17:39	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/04/24 17:39	1
Acetone	<3.10		10.0	3.10	ug/L			05/04/24 17:39	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/04/24 17:39	1
Benzene	<0.220		0.500	0.220	ug/L			05/04/24 17:39	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/04/24 17:39	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/04/24 17:39	1
Bromoform	<0.780		5.00	0.780	ug/L			05/04/24 17:39	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/04/24 17:39	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/04/24 17:39	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/04/24 17:39	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/04/24 17:39	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/04/24 17:39	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/04/24 17:39	1
Chloroform	<1.30		3.00	1.30	ug/L			05/04/24 17:39	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/04/24 17:39	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/04/24 17:39	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/04/24 17:39	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/04/24 17:39	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/04/24 17:39	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/04/24 17:39	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/04/24 17:39	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/04/24 17:39	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/04/24 17:39	1
Styrene	<0.370		1.00	0.370	ug/L			05/04/24 17:39	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/04/24 17:39	1
Toluene	<0.430		1.00	0.430	ug/L			05/04/24 17:39	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/04/24 17:39	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/04/24 17:39	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/04/24 17:39	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/04/24 17:39	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/04/24 17:39	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/04/24 17:39	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/04/24 17:39	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/04/24 17:39	1

Client: AECOM
Job ID: 310-280147-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: MW-709B
Lab Sample ID: 310-280147-1
Date Collected: 04/30/24 11:30
Matrix: Water
Date Received: 05/01/24 09:40

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*97*		*73 - 130*		*05/04/24 17:39*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*05/04/24 17:39*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*05/04/24 17:39*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		05/02/24 09:00	05/07/24 16:51	1
Arsenic	<0.530		2.00	0.530	ug/L		05/02/24 09:00	05/06/24 19:43	1
Barium	**87.8**		2.00	0.660	ug/L		05/02/24 09:00	05/06/24 19:43	1
Beryllium	<0.330		1.00	0.330	ug/L		05/02/24 09:00	05/07/24 16:51	1
Cadmium	<0.100		0.200	0.100	ug/L		05/02/24 09:00	05/07/24 16:51	1
Chromium	<1.20		5.00	1.20	ug/L		05/02/24 09:00	05/06/24 19:43	1
Cobalt	<0.170		0.500	0.170	ug/L		05/02/24 09:00	05/06/24 19:43	1
Copper	<1.80		5.00	1.80	ug/L		05/02/24 09:00	05/06/24 19:43	1
Lead	<0.260		0.500	0.260	ug/L		05/02/24 09:00	05/06/24 19:43	1
Nickel	**2.42**	**J**	5.00	2.10	ug/L		05/02/24 09:00	05/07/24 16:51	1
Selenium	<1.40		5.00	1.40	ug/L		05/02/24 09:00	05/06/24 19:43	1
Silver	<0.500		1.00	0.500	ug/L		05/02/24 09:00	05/07/24 16:51	1
Thallium	<0.570		1.00	0.570	ug/L		05/02/24 09:00	05/06/24 19:43	1
Vanadium	<1.10		5.00	1.10	ug/L		05/02/24 09:00	05/06/24 19:43	1
Zinc	<9.70		20.0	9.70	ug/L		05/02/24 09:00	05/06/24 19:43	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**2.75**		1.88	1.39	mg/L			05/02/24 15:42	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**7.09**				NTU			04/30/24 11:30	1

Client: AECOM
Job ID: 310-280147-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: MW-711B
Lab Sample ID: 310-280147-2
Date Collected: 04/30/24 12:20
Matrix: Water
Date Received: 05/01/24 09:40

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/04/24 18:01	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/04/24 18:01	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/04/24 18:01	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/04/24 18:01	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/04/24 18:01	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/04/24 18:01	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/04/24 18:01	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/04/24 18:01	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/04/24 18:01	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/04/24 18:01	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/04/24 18:01	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/04/24 18:01	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/04/24 18:01	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/04/24 18:01	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/04/24 18:01	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/04/24 18:01	1
Acetone	<3.10		10.0	3.10	ug/L			05/04/24 18:01	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/04/24 18:01	1
Benzene	<0.220		0.500	0.220	ug/L			05/04/24 18:01	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/04/24 18:01	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/04/24 18:01	1
Bromoform	<0.780		5.00	0.780	ug/L			05/04/24 18:01	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/04/24 18:01	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/04/24 18:01	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/04/24 18:01	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/04/24 18:01	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/04/24 18:01	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/04/24 18:01	1
Chloroform	<1.30		3.00	1.30	ug/L			05/04/24 18:01	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/04/24 18:01	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/04/24 18:01	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/04/24 18:01	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/04/24 18:01	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/04/24 18:01	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/04/24 18:01	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/04/24 18:01	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/04/24 18:01	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/04/24 18:01	1
Styrene	<0.370		1.00	0.370	ug/L			05/04/24 18:01	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/04/24 18:01	1
Toluene	<0.430		1.00	0.430	ug/L			05/04/24 18:01	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/04/24 18:01	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/04/24 18:01	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/04/24 18:01	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/04/24 18:01	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/04/24 18:01	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/04/24 18:01	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/04/24 18:01	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/04/24 18:01	1

Client: AECOM
Job ID: 310-280147-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: MW-711B
Lab Sample ID: 310-280147-2

Date Collected: 04/30/24 12:20
Matrix: Water

Date Received: 05/01/24 09:40

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*98*		*73 - 130*		*05/04/24 18:01*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*05/04/24 18:01*	*1*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*		*05/04/24 18:01*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		05/02/24 09:00	05/07/24 16:53	1
Arsenic	**0.878**	**J**	2.00	0.530	ug/L		05/02/24 09:00	05/07/24 16:53	1
Barium	**43.5**		2.00	0.660	ug/L		05/02/24 09:00	05/06/24 19:46	1
Beryllium	<0.330		1.00	0.330	ug/L		05/02/24 09:00	05/07/24 16:53	1
Cadmium	**0.116**	**J**	0.200	0.100	ug/L		05/02/24 09:00	05/07/24 16:53	1
Chromium	<1.20		5.00	1.20	ug/L		05/02/24 09:00	05/07/24 16:53	1
Cobalt	**4.43**		0.500	0.170	ug/L		05/02/24 09:00	05/06/24 19:46	1
Copper	<1.80		5.00	1.80	ug/L		05/02/24 09:00	05/06/24 19:46	1
Lead	<0.260		0.500	0.260	ug/L		05/02/24 09:00	05/06/24 19:46	1
Nickel	**19.5**		5.00	2.10	ug/L		05/02/24 09:00	05/07/24 16:53	1
Selenium	<1.40		5.00	1.40	ug/L		05/02/24 09:00	05/07/24 16:53	1
Silver	<0.500		1.00	0.500	ug/L		05/02/24 09:00	05/07/24 16:53	1
Thallium	<0.570		1.00	0.570	ug/L		05/02/24 09:00	05/06/24 19:46	1
Vanadium	<1.10		5.00	1.10	ug/L		05/02/24 09:00	05/06/24 19:46	1
Zinc	<9.70		20.0	9.70	ug/L		05/02/24 09:00	05/06/24 19:46	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**7.88**		1.88	1.39	mg/L			05/02/24 17:30	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**26.14**				NTU			04/30/24 12:20	1

Client: AECOM
Job ID: 310-280147-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: MW-712B
Lab Sample ID: 310-280147-3
Date Collected: 04/30/24 13:45
Matrix: Water
Date Received: 05/01/24 09:40

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/04/24 18:23	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/04/24 18:23	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/04/24 18:23	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/04/24 18:23	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/04/24 18:23	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/04/24 18:23	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/04/24 18:23	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/04/24 18:23	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/04/24 18:23	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/04/24 18:23	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/04/24 18:23	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/04/24 18:23	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/04/24 18:23	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/04/24 18:23	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/04/24 18:23	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/04/24 18:23	1
Acetone	<3.10		10.0	3.10	ug/L			05/04/24 18:23	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/04/24 18:23	1
Benzene	<0.220		0.500	0.220	ug/L			05/04/24 18:23	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/04/24 18:23	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/04/24 18:23	1
Bromoform	<0.780		5.00	0.780	ug/L			05/04/24 18:23	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/04/24 18:23	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/04/24 18:23	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/04/24 18:23	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/04/24 18:23	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/04/24 18:23	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/04/24 18:23	1
Chloroform	<1.30		3.00	1.30	ug/L			05/04/24 18:23	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/04/24 18:23	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/04/24 18:23	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/04/24 18:23	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/04/24 18:23	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/04/24 18:23	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/04/24 18:23	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/04/24 18:23	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/04/24 18:23	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/04/24 18:23	1
Styrene	<0.370		1.00	0.370	ug/L			05/04/24 18:23	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/04/24 18:23	1
Toluene	<0.430		1.00	0.430	ug/L			05/04/24 18:23	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/04/24 18:23	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/04/24 18:23	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/04/24 18:23	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/04/24 18:23	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/04/24 18:23	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/04/24 18:23	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/04/24 18:23	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/04/24 18:23	1

Client: AECOM
Job ID: 310-280147-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: MW-712B
Lab Sample ID: 310-280147-3
Date Collected: 04/30/24 13:45
Matrix: Water
Date Received: 05/01/24 09:40

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*98*		*73 - 130*		*05/04/24 18:23*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*05/04/24 18:23*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*05/04/24 18:23*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		05/02/24 09:00	05/07/24 16:58	1
Arsenic	**0.537**	**J**	2.00	0.530	ug/L		05/02/24 09:00	05/07/24 16:58	1
Barium	**63.0**		2.00	0.660	ug/L		05/02/24 09:00	05/07/24 16:58	1
Beryllium	<0.330		1.00	0.330	ug/L		05/02/24 09:00	05/07/24 16:58	1
Cadmium	**0.131**	**J**	0.200	0.100	ug/L		05/02/24 09:00	05/07/24 16:58	1
Chromium	<1.20		5.00	1.20	ug/L		05/02/24 09:00	05/07/24 16:58	1
Cobalt	**6.02**		0.500	0.170	ug/L		05/02/24 09:00	05/07/24 16:58	1
Copper	<1.80		5.00	1.80	ug/L		05/02/24 09:00	05/07/24 16:58	1
Lead	<0.260		0.500	0.260	ug/L		05/02/24 09:00	05/07/24 16:58	1
Nickel	**7.24**		5.00	2.10	ug/L		05/02/24 09:00	05/07/24 16:58	1
Selenium	<1.40		5.00	1.40	ug/L		05/02/24 09:00	05/07/24 16:58	1
Silver	<0.500		1.00	0.500	ug/L		05/02/24 09:00	05/07/24 16:58	1
Thallium	<0.570		1.00	0.570	ug/L		05/02/24 09:00	05/07/24 16:58	1
Vanadium	<1.10		5.00	1.10	ug/L		05/02/24 09:00	05/07/24 16:58	1
Zinc	<9.70		20.0	9.70	ug/L		05/02/24 09:00	05/07/24 16:58	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	<1.39		1.88	1.39	mg/L			05/02/24 15:42	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**2.63**				NTU			04/30/24 13:45	1

Client: AECOM
Job ID: 310-280147-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Trip Blank
Lab Sample ID: 310-280147-4
Date Collected: 04/30/24 06:00
Matrix: Water
Date Received: 05/01/24 09:40

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/04/24 16:12	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/04/24 16:12	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/04/24 16:12	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/04/24 16:12	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/04/24 16:12	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/04/24 16:12	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/04/24 16:12	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/04/24 16:12	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/04/24 16:12	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/04/24 16:12	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/04/24 16:12	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/04/24 16:12	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/04/24 16:12	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/04/24 16:12	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/04/24 16:12	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/04/24 16:12	1
Acetone	<3.10		10.0	3.10	ug/L			05/04/24 16:12	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/04/24 16:12	1
Benzene	<0.220		0.500	0.220	ug/L			05/04/24 16:12	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/04/24 16:12	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/04/24 16:12	1
Bromoform	<0.780		5.00	0.780	ug/L			05/04/24 16:12	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/04/24 16:12	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/04/24 16:12	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/04/24 16:12	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/04/24 16:12	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/04/24 16:12	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/04/24 16:12	1
Chloroform	<1.30		3.00	1.30	ug/L			05/04/24 16:12	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/04/24 16:12	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/04/24 16:12	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/04/24 16:12	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/04/24 16:12	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/04/24 16:12	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/04/24 16:12	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/04/24 16:12	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/04/24 16:12	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/04/24 16:12	1
Styrene	<0.370		1.00	0.370	ug/L			05/04/24 16:12	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/04/24 16:12	1
Toluene	<0.430		1.00	0.430	ug/L			05/04/24 16:12	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/04/24 16:12	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/04/24 16:12	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/04/24 16:12	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/04/24 16:12	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/04/24 16:12	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/04/24 16:12	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/04/24 16:12	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/04/24 16:12	1

Client: AECOM
Job ID: 310-280147-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Trip Blank
Lab Sample ID: 310-280147-4
Date Collected: 04/30/24 06:00
Matrix: Water
Date Received: 05/01/24 09:40

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	96		73 - 130		05/04/24 16:12	1
Toluene-d8 (Surr)	102		80 - 120		05/04/24 16:12	1
4-Bromofluorobenzene (Surr)	101		80 - 120		05/04/24 16:12	1

Definitions/Glossary

Client: AECOM
Job ID: 310-280147-1
Project/Site: Black Hawk County Landfill (IDNR)

Qualifiers

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Surrogate Summary

Client: AECOM
Job ID: 310-280147-1
Project/Site: Black Hawk County Landfill (IDNR)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)								
		DBFM	TOL	BFB						
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)						
310-280147-1	MW-709B	97	101	101						
310-280147-1 MS	MW-709B	92	107	100						
310-280147-1 MSD	MW-709B	94	106	100						
310-280147-2	MW-711B	98	102	104						
310-280147-3	MW-712B	98	102	101						
310-280147-4	Trip Blank	96	102	101						
LCS 310-420650/6	Lab Control Sample	94	106	101						
LCS 310-420650/7	Lab Control Sample	99	102	103						
MB 310-420650/5	Method Blank	95	102	103						

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)

TOL = Toluene-d8 (Surr)

BFB = 4-Bromofluorobenzene (Surr)

Client: AECOM
Project/Site: Black Hawk County Landfill (IDNR)

Job ID: 310-280147-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 310-420650/5
Matrix: Water
Analysis Batch: 420650

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/04/24 15:06	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/04/24 15:06	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/04/24 15:06	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/04/24 15:06	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/04/24 15:06	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/04/24 15:06	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/04/24 15:06	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/04/24 15:06	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/04/24 15:06	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/04/24 15:06	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/04/24 15:06	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/04/24 15:06	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/04/24 15:06	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/04/24 15:06	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/04/24 15:06	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/04/24 15:06	1
Acetone	<3.10		10.0	3.10	ug/L			05/04/24 15:06	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/04/24 15:06	1
Benzene	<0.220		0.500	0.220	ug/L			05/04/24 15:06	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/04/24 15:06	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/04/24 15:06	1
Bromoform	<0.780		5.00	0.780	ug/L			05/04/24 15:06	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/04/24 15:06	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/04/24 15:06	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/04/24 15:06	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/04/24 15:06	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/04/24 15:06	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/04/24 15:06	1
Chloroform	<1.30		3.00	1.30	ug/L			05/04/24 15:06	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/04/24 15:06	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/04/24 15:06	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/04/24 15:06	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/04/24 15:06	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/04/24 15:06	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/04/24 15:06	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/04/24 15:06	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/04/24 15:06	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/04/24 15:06	1
Styrene	<0.370		1.00	0.370	ug/L			05/04/24 15:06	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/04/24 15:06	1
Toluene	<0.430		1.00	0.430	ug/L			05/04/24 15:06	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/04/24 15:06	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/04/24 15:06	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/04/24 15:06	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/04/24 15:06	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/04/24 15:06	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/04/24 15:06	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/04/24 15:06	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-420650/5
Matrix: Water
Analysis Batch: 420650

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/04/24 15:06	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*95*		*73 - 130*		*05/04/24 15:06*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*05/04/24 15:06*	*1*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*		*05/04/24 15:06*	*1*

Lab Sample ID: LCS 310-420650/6
Matrix: Water
Analysis Batch: 420650

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	20.0	16.94		ug/L		85	71 - 120
1,1,1-Trichloroethane	20.0	18.14		ug/L		91	73 - 129
1,1,2,2-Tetrachloroethane	20.0	19.02		ug/L		95	68 - 124
1,1,2-Trichloroethane	20.0	18.65		ug/L		93	73 - 123
1,1-Dichloroethane	20.0	20.44		ug/L		102	70 - 127
1,1-Dichloroethene	20.0	19.00		ug/L		95	63 - 132
1,2,3-Trichloropropane	20.0	18.35		ug/L		92	65 - 127
1,2-Dibromo-3-Chloropropane	20.0	22.55		ug/L		113	50 - 150
1,2-Dibromoethane (EDB)	20.0	17.57		ug/L		88	75 - 125
1,2-Dichlorobenzene	20.0	18.64		ug/L		93	74 - 120
1,2-Dichloroethane	20.0	20.36		ug/L		102	71 - 125
1,2-Dichloropropane	20.0	20.13		ug/L		101	73 - 124
1,4-Dichlorobenzene	20.0	19.33		ug/L		97	72 - 120
2-Butanone (MEK)	40.0	43.60		ug/L		109	50 - 150
2-Hexanone	40.0	46.84		ug/L		117	60 - 140
4-Methyl-2-pentanone (MIBK)	40.0	46.36		ug/L		116	60 - 139
Acetone	40.0	48.03		ug/L		120	50 - 150
Acrylonitrile	200	218.0		ug/L		109	50 - 150
Benzene	20.0	18.37		ug/L		92	72 - 124
Bromochloromethane	20.0	16.66		ug/L		83	73 - 130
Bromodichloromethane	20.0	18.33		ug/L		92	74 - 122
Bromoform	20.0	15.49		ug/L		77	61 - 122
Carbon disulfide	20.0	20.22		ug/L		101	59 - 135
Carbon tetrachloride	20.0	16.54		ug/L		83	67 - 132
Chlorobenzene	20.0	17.74		ug/L		89	76 - 120
Chlorodibromomethane	20.0	16.35		ug/L		82	71 - 121
Chloroform	20.0	19.19		ug/L		96	72 - 125
cis-1,2-Dichloroethene	20.0	18.45		ug/L		92	74 - 123
cis-1,3-Dichloropropene	20.0	18.07		ug/L		90	71 - 125
Dibromomethane	20.0	18.51		ug/L		93	74 - 125
Ethylbenzene	20.0	18.94		ug/L		95	74 - 122
Iodomethane	20.0	15.90		ug/L		79	10 - 150
Methylene Chloride	20.0	20.01		ug/L		100	50 - 150
Styrene	20.0	18.52		ug/L		93	74 - 121
Tetrachloroethene	20.0	15.66		ug/L		78	71 - 130
Toluene	20.0	18.01		ug/L		90	74 - 123

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-420650/6
Matrix: Water
Analysis Batch: 420650

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
trans-1,2-Dichloroethene	20.0	17.84		ug/L		89	70 - 126
trans-1,3-Dichloropropene	20.0	18.55		ug/L		93	69 - 123
trans-1,4-Dichloro-2-butene	20.0	19.28		ug/L		96	50 - 150
Trichloroethene	20.0	18.69		ug/L		93	72 - 126
Vinyl acetate	40.0	33.08		ug/L		83	50 - 150
Xylenes, Total	40.0	35.47		ug/L		89	73 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*94*		*73 - 130*
Toluene-d8 (Surr)	*106*		*80 - 120*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*

Lab Sample ID: LCS 310-420650/7
Matrix: Water
Analysis Batch: 420650

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	18.93		ug/L		95	23 - 150
Chloroethane	20.0	23.70		ug/L		118	54 - 136
Chloromethane	20.0	24.87		ug/L		124	38 - 150
Trichlorofluoromethane	20.0	20.50		ug/L		103	54 - 149
Vinyl chloride	20.0	24.68		ug/L		123	56 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*99*		*73 - 130*
Toluene-d8 (Surr)	*102*		*80 - 120*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*

Lab Sample ID: 310-280147-1 MS
Matrix: Water
Analysis Batch: 420650

Client Sample ID: MW-709B
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	<0.380		25.0	19.63		ug/L		79	55 - 130
1,1,1-Trichloroethane	<0.190		25.0	20.25		ug/L		81	52 - 130
1,1,2,2-Tetrachloroethane	<0.470		25.0	23.59		ug/L		94	54 - 130
1,1,2-Trichloroethane	<0.450		25.0	21.96		ug/L		88	58 - 130
1,1-Dichloroethane	<0.220		25.0	23.80		ug/L		95	49 - 130
1,1-Dichloroethene	<0.560		25.0	21.81		ug/L		87	37 - 132
1,2,3-Trichloropropane	<0.590		25.0	22.16		ug/L		89	49 - 130
1,2-Dibromo-3-Chloropropane	<1.20		25.0	27.76		ug/L		111	38 - 150
1,2-Dibromoethane (EDB)	<0.340		25.0	20.77		ug/L		83	60 - 130
1,2-Dichlorobenzene	<0.370		25.0	22.33		ug/L		89	59 - 130
1,2-Dichloroethane	<0.390		25.0	24.17		ug/L		97	51 - 130
1,2-Dichloropropane	<0.270		25.0	23.40		ug/L		94	57 - 130
1,4-Dichlorobenzene	<0.230		25.0	22.59		ug/L		90	57 - 130
2-Butanone (MEK)	<2.10		50.0	54.94		ug/L		110	38 - 150
2-Hexanone	<2.00		50.0	52.24		ug/L		104	46 - 140

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 310-280147-1 MS
Matrix: Water
Analysis Batch: 420650

Client Sample ID: MW-709B
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
4-Methyl-2-pentanone (MIBK)	<2.10		50.0	56.98		ug/L		114	47 - 139
Acetone	<3.10		50.0	61.51		ug/L		123	31 - 150
Acrylonitrile	<2.20		250	264.1		ug/L		106	40 - 150
Benzene	<0.220		25.0	21.61		ug/L		86	46 - 130
Bromochloromethane	<0.540		25.0	18.65		ug/L		75	57 - 130
Bromodichloromethane	<0.390		25.0	20.77		ug/L		83	57 - 130
Bromoform	<0.780		25.0	16.77		ug/L		67	44 - 130
Carbon disulfide	<0.450		25.0	23.15		ug/L		93	38 - 135
Carbon tetrachloride	<0.650		25.0	18.27		ug/L		73	45 - 132
Chlorobenzene	<0.400		25.0	20.83		ug/L		83	59 - 130
Chlorodibromomethane	<0.750		25.0	17.75		ug/L		71	54 - 130
Chloroform	<1.30		25.0	21.99		ug/L		88	51 - 130
cis-1,2-Dichloroethene	<0.210		25.0	21.37		ug/L		85	45 - 130
cis-1,3-Dichloropropene	<0.250		25.0	20.77		ug/L		83	53 - 130
Dibromomethane	<0.330		25.0	21.15		ug/L		85	59 - 130
Ethylbenzene	<0.310		25.0	22.16		ug/L		89	45 - 130
Iodomethane	<7.00		25.0	18.77		ug/L		75	10 - 150
Methylene Chloride	<1.70		25.0	24.33		ug/L		97	37 - 150
Styrene	<0.370		25.0	21.47		ug/L		86	47 - 130
Tetrachloroethene	<0.480		25.0	17.40		ug/L		70	47 - 130
Toluene	<0.430		25.0	21.51		ug/L		86	51 - 130
trans-1,2-Dichloroethene	<0.270		25.0	20.53		ug/L		82	48 - 130
trans-1,3-Dichloropropene	<0.560		25.0	21.20		ug/L		85	50 - 130
trans-1,4-Dichloro-2-butene	<1.10		25.0	21.50		ug/L		86	26 - 150
Trichloroethene	<0.430		25.0	20.51		ug/L		82	51 - 130
Vinyl acetate	<2.50		50.0	34.94		ug/L		70	29 - 150
Xylenes, Total	<0.400		50.0	42.98		ug/L		86	43 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*92*		*73 - 130*
Toluene-d8 (Surr)	*107*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*

Lab Sample ID: 310-280147-1 MSD
Matrix: Water
Analysis Batch: 420650

Client Sample ID: MW-709B
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	<0.380		25.0	18.51		ug/L		74	55 - 130	6	20
1,1,1-Trichloroethane	<0.190		25.0	18.73		ug/L		75	52 - 130	8	20
1,1,2,2-Tetrachloroethane	<0.470		25.0	21.95		ug/L		88	54 - 130	7	20
1,1,2-Trichloroethane	<0.450		25.0	20.86		ug/L		83	58 - 130	5	20
1,1-Dichloroethane	<0.220		25.0	21.59		ug/L		86	49 - 130	10	20
1,1-Dichloroethene	<0.560		25.0	20.04		ug/L		80	37 - 132	8	26
1,2,3-Trichloropropane	<0.590		25.0	21.21		ug/L		85	49 - 130	4	26
1,2-Dibromo-3-Chloropropane	<1.20		25.0	25.99		ug/L		104	38 - 150	7	20
1,2-Dibromoethane (EDB)	<0.340		25.0	19.54		ug/L		78	60 - 130	6	20
1,2-Dichlorobenzene	<0.370		25.0	21.11		ug/L		84	59 - 130	6	20

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 310-280147-1 MSD
Matrix: Water
Analysis Batch: 420650

Client Sample ID: MW-709B
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2-Dichloroethane	<0.390		25.0	22.38		ug/L		90	51 - 130	8	20
1,2-Dichloropropane	<0.270		25.0	22.15		ug/L		89	57 - 130	5	20
1,4-Dichlorobenzene	<0.230		25.0	21.58		ug/L		86	57 - 130	5	20
2-Butanone (MEK)	<2.10		50.0	54.65		ug/L		109	38 - 150	1	20
2-Hexanone	<2.00		50.0	52.49		ug/L		105	46 - 140	0	20
4-Methyl-2-pentanone (MIBK)	<2.10		50.0	53.75		ug/L		107	47 - 139	6	20
Acetone	<3.10		50.0	61.59		ug/L		123	31 - 150	0	29
Acrylonitrile	<2.20		250	247.7		ug/L		99	40 - 150	6	20
Benzene	<0.220		25.0	19.59		ug/L		78	46 - 130	10	20
Bromochloromethane	<0.540		25.0	17.38		ug/L		70	57 - 130	7	20
Bromodichloromethane	<0.390		25.0	19.55		ug/L		78	57 - 130	6	20
Bromoform	<0.780		25.0	16.29		ug/L		65	44 - 130	3	20
Carbon disulfide	<0.450		25.0	20.65		ug/L		83	38 - 135	11	30
Carbon tetrachloride	<0.650		25.0	16.82		ug/L		67	45 - 132	8	20
Chlorobenzene	<0.400		25.0	19.02		ug/L		76	59 - 130	9	20
Chlorodibromomethane	<0.750		25.0	17.16		ug/L		69	54 - 130	3	20
Chloroform	<1.30		25.0	20.30		ug/L		81	51 - 130	8	20
cis-1,2-Dichloroethene	<0.210		25.0	19.57		ug/L		78	45 - 130	9	20
cis-1,3-Dichloropropene	<0.250		25.0	19.36		ug/L		77	53 - 130	7	20
Dibromomethane	<0.330		25.0	20.45		ug/L		82	59 - 130	3	20
Ethylbenzene	<0.310		25.0	20.41		ug/L		82	45 - 130	8	20
Iodomethane	<7.00		25.0	20.21		ug/L		81	10 - 150	7	35
Methylene Chloride	<1.70		25.0	22.82		ug/L		91	37 - 150	6	24
Styrene	<0.370		25.0	19.73		ug/L		79	47 - 130	8	20
Tetrachloroethene	<0.480		25.0	16.42		ug/L		66	47 - 130	6	20
Toluene	<0.430		25.0	19.38		ug/L		78	51 - 130	10	20
trans-1,2-Dichloroethene	<0.270		25.0	18.82		ug/L		75	48 - 130	9	22
trans-1,3-Dichloropropene	<0.560		25.0	20.45		ug/L		82	50 - 130	4	20
trans-1,4-Dichloro-2-butene	<1.10		25.0	21.00		ug/L		84	26 - 150	2	23
Trichloroethene	<0.430		25.0	19.27		ug/L		77	51 - 130	6	20
Vinyl acetate	<2.50		50.0	33.90		ug/L		68	29 - 150	3	23
Xylenes, Total	<0.400		50.0	38.91		ug/L		78	43 - 130	10	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*94*		*73 - 130*
Toluene-d8 (Surr)	*106*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-420408/1-A
Matrix: Water
Analysis Batch: 420834

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 420408

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.530		2.00	0.530	ug/L		05/02/24 09:00	05/06/24 18:23	1
Barium	<0.660		2.00	0.660	ug/L		05/02/24 09:00	05/06/24 18:23	1
Beryllium	<0.330		1.00	0.330	ug/L		05/02/24 09:00	05/06/24 18:23	1
Chromium	<1.20		5.00	1.20	ug/L		05/02/24 09:00	05/06/24 18:23	1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 310-420408/1-A
Matrix: Water
Analysis Batch: 420834

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 420408

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	<0.170		0.500	0.170	ug/L		05/02/24 09:00	05/06/24 18:23	1
Copper	<1.80		5.00	1.80	ug/L		05/02/24 09:00	05/06/24 18:23	1
Lead	<0.260		0.500	0.260	ug/L		05/02/24 09:00	05/06/24 18:23	1
Nickel	<2.10		5.00	2.10	ug/L		05/02/24 09:00	05/06/24 18:23	1
Selenium	<1.40		5.00	1.40	ug/L		05/02/24 09:00	05/06/24 18:23	1
Thallium	<0.570		1.00	0.570	ug/L		05/02/24 09:00	05/06/24 18:23	1
Vanadium	<1.10		5.00	1.10	ug/L		05/02/24 09:00	05/06/24 18:23	1
Zinc	<9.70		20.0	9.70	ug/L		05/02/24 09:00	05/06/24 18:23	1

Lab Sample ID: MB 310-420408/1-A
Matrix: Water
Analysis Batch: 420954

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 420408

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		05/02/24 09:00	05/07/24 16:21	1
Cadmium	<0.100		0.200	0.100	ug/L		05/02/24 09:00	05/07/24 16:21	1
Silver	<0.500		1.00	0.500	ug/L		05/02/24 09:00	05/07/24 16:21	1

Lab Sample ID: LCS 310-420408/2-A
Matrix: Water
Analysis Batch: 420834

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 420408

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	200	213.6		ug/L		107	80 - 120
Barium	100	108.7		ug/L		109	80 - 120
Chromium	100	98.78		ug/L		99	80 - 120
Cobalt	100	95.91		ug/L		96	80 - 120
Copper	200	197.0		ug/L		99	80 - 120
Lead	200	216.7		ug/L		108	80 - 120
Selenium	400	406.0		ug/L		101	80 - 120
Vanadium	100	94.22		ug/L		94	80 - 120
Zinc	200	198.1		ug/L		99	80 - 120

Lab Sample ID: LCS 310-420408/2-A
Matrix: Water
Analysis Batch: 420954

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 420408

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	200	218.4		ug/L		109	80 - 120
Beryllium	100	100.8		ug/L		101	80 - 120
Cadmium	100	100.0		ug/L		100	80 - 120
Nickel	200	207.7		ug/L		104	80 - 120
Silver	100	111.9		ug/L		112	80 - 120
Thallium	100	108.3		ug/L		108	80 - 120

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: 310-280147-2 DU
Matrix: Water
Analysis Batch: 420834

Client Sample ID: MW-711B
Prep Type: Total/NA
Prep Batch: 420408

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Barium	43.5		44.99		ug/L		3	20
Cobalt	4.43		4.652		ug/L		5	20
Copper	<1.80		<1.80		ug/L		NC	20
Lead	<0.260		<0.260		ug/L		NC	20
Thallium	<0.570		<0.570		ug/L		NC	20
Zinc	<9.70		<9.70		ug/L		NC	20

Lab Sample ID: 310-280147-2 DU
Matrix: Water
Analysis Batch: 420954

Client Sample ID: MW-711B
Prep Type: Total/NA
Prep Batch: 420408

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Antimony	<1.00		<1.00		ug/L		NC	20
Arsenic	0.878	J	0.9320	J	ug/L		6	20
Beryllium	<0.330		<0.330		ug/L		NC	20
Cadmium	0.116	J	0.1250	J	ug/L		7	20
Chromium	<1.20		<1.20		ug/L		NC	20
Nickel	19.5		20.43		ug/L		4	20
Selenium	<1.40		<1.40		ug/L		NC	20
Silver	<0.500		<0.500		ug/L		NC	20

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: MB 310-420546/1
Matrix: Water
Analysis Batch: 420546

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<3.70		5.00	3.70	mg/L			05/02/24 15:42	1

Lab Sample ID: LCS 310-420546/2
Matrix: Water
Analysis Batch: 420546

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	102.0		mg/L		102	75 - 116

Lab Sample ID: MB 310-420551/1
Matrix: Water
Analysis Batch: 420551

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<3.70		5.00	3.70	mg/L			05/02/24 17:30	1

Lab Sample ID: LCS 310-420551/2
Matrix: Water
Analysis Batch: 420551

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	106.0		mg/L		106	75 - 116

GC/MS VOA

Analysis Batch: 420650

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280147-1	MW-709B	Total/NA	Water	8260D	
310-280147-2	MW-711B	Total/NA	Water	8260D	
310-280147-3	MW-712B	Total/NA	Water	8260D	
310-280147-4	Trip Blank	Total/NA	Water	8260D	
MB 310-420650/5	Method Blank	Total/NA	Water	8260D	
LCS 310-420650/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-420650/7	Lab Control Sample	Total/NA	Water	8260D	
310-280147-1 MS	MW-709B	Total/NA	Water	8260D	
310-280147-1 MSD	MW-709B	Total/NA	Water	8260D	

Metals

Prep Batch: 420408

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280147-1	MW-709B	Total/NA	Water	3005A	
310-280147-2	MW-711B	Total/NA	Water	3005A	
310-280147-3	MW-712B	Total/NA	Water	3005A	
MB 310-420408/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-420408/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-280147-2 DU	MW-711B	Total/NA	Water	3005A	

Analysis Batch: 420834

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280147-1	MW-709B	Total/NA	Water	6020B	420408
310-280147-2	MW-711B	Total/NA	Water	6020B	420408
MB 310-420408/1-A	Method Blank	Total/NA	Water	6020B	420408
LCS 310-420408/2-A	Lab Control Sample	Total/NA	Water	6020B	420408
310-280147-2 DU	MW-711B	Total/NA	Water	6020B	420408

Analysis Batch: 420954

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280147-1	MW-709B	Total/NA	Water	6020B	420408
310-280147-2	MW-711B	Total/NA	Water	6020B	420408
310-280147-3	MW-712B	Total/NA	Water	6020B	420408
MB 310-420408/1-A	Method Blank	Total/NA	Water	6020B	420408
LCS 310-420408/2-A	Lab Control Sample	Total/NA	Water	6020B	420408
310-280147-2 DU	MW-711B	Total/NA	Water	6020B	420408

General Chemistry

Analysis Batch: 420546

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280147-1	MW-709B	Total/NA	Water	I-3765-85	
310-280147-3	MW-712B	Total/NA	Water	I-3765-85	
MB 310-420546/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-420546/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Analysis Batch: 420551

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280147-2	MW-711B	Total/NA	Water	I-3765-85	
MB 310-420551/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-420551/2	Lab Control Sample	Total/NA	Water	I-3765-85	

QC Association Summary

Client: AECOM
Job ID: 310-280147-1
Project/Site: Black Hawk County Landfill (IDNR)

Field Service / Mobile Lab

Analysis Batch: 420769

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280147-1	MW-709B	Total/NA	Water	Field Sampling	
310-280147-2	MW-711B	Total/NA	Water	Field Sampling	
310-280147-3	MW-712B	Total/NA	Water	Field Sampling	

Lab Chronicle

Client: AECOM
Job ID: 310-280147-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: MW-709B
Lab Sample ID: 310-280147-1
Date Collected: 04/30/24 11:30
Matrix: Water
Date Received: 05/01/24 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	420650	WSE8	EET CF	05/04/24 17:39
Total/NA	Prep	3005A			420408	KM3E	EET CF	05/02/24 09:00
Total/NA	Analysis	6020B		1	420834	NFT2	EET CF	05/06/24 19:43
Total/NA	Prep	3005A			420408	KM3E	EET CF	05/02/24 09:00
Total/NA	Analysis	6020B		1	420954	NFT2	EET CF	05/07/24 16:51
Total/NA	Analysis	I-3765-85		1	420546	A4XP	EET CF	05/02/24 15:42
Total/NA	Analysis	Field Sampling		1	420769	BJ0R	EET CF	04/30/24 11:30

Client Sample ID: MW-711B
Lab Sample ID: 310-280147-2
Date Collected: 04/30/24 12:20
Matrix: Water
Date Received: 05/01/24 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	420650	WSE8	EET CF	05/04/24 18:01
Total/NA	Prep	3005A			420408	KM3E	EET CF	05/02/24 09:00
Total/NA	Analysis	6020B		1	420834	NFT2	EET CF	05/06/24 19:46
Total/NA	Prep	3005A			420408	KM3E	EET CF	05/02/24 09:00
Total/NA	Analysis	6020B		1	420954	NFT2	EET CF	05/07/24 16:53
Total/NA	Analysis	I-3765-85		1	420551	A4XP	EET CF	05/02/24 17:30
Total/NA	Analysis	Field Sampling		1	420769	BJ0R	EET CF	04/30/24 12:20

Client Sample ID: MW-712B
Lab Sample ID: 310-280147-3
Date Collected: 04/30/24 13:45
Matrix: Water
Date Received: 05/01/24 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	420650	WSE8	EET CF	05/04/24 18:23
Total/NA	Prep	3005A			420408	KM3E	EET CF	05/02/24 09:00
Total/NA	Analysis	6020B		1	420954	NFT2	EET CF	05/07/24 16:58
Total/NA	Analysis	I-3765-85		1	420546	A4XP	EET CF	05/02/24 15:42
Total/NA	Analysis	Field Sampling		1	420769	BJ0R	EET CF	04/30/24 13:45

Client Sample ID: Trip Blank
Lab Sample ID: 310-280147-4
Date Collected: 04/30/24 06:00
Matrix: Water
Date Received: 05/01/24 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	420650	WSE8	EET CF	05/04/24 16:12

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Accreditation/Certification Summary

Client: AECOM
Job ID: 310-280147-1
Project/Site: Black Hawk County Landfill (IDNR)

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8260D		Water	m,p-Xylene
8260D		Water	o-Xylene
Field Sampling		Water	Field Turbidity

Method Summary

Client: AECOM
Job ID: 310-280147-1
Project/Site: Black Hawk County Landfill (IDNR)

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
Field Sampling	Field Sampling	EPA	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
5030B	Purge and Trap	SW846	EET CF

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

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310-280147 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: AECOM

City/State: CITY Waterloo STATE IA. Project: Black Hawk Co. Landfill

Receipt Information

Date/Time Received: DATE 5/1/24 TIME 9:40 Received By: JL

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☐ Lab Courier ☐ Lab Field Services ☑ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler?	☑ Yes	☐ No	*If yes:* Cooler ID:
Multiple Coolers?	☐ Yes	☑ No	*If yes:* Cooler # _____ of _____
Cooler Custody Seals Present?	☐ Yes	☑ No	*If yes:* Cooler custody seals intact? ☐ Yes ☐ No
Sample Custody Seals Present?	☐ Yes	☑ No	*If yes:* Sample custody seals intact? ☐ Yes ☐ No
Trip Blank Present?	☐ Yes	☑ No	*If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☑ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: 0 U Correction Factor (°C): 0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 4.9 Corrected Temp (°C): 4.9

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE *If yes, contact PM before proceeding If no, proceed with login*

Additional Comments

Eurofins Cedar Falls
3019 Venture Way

Cedar Falls, IA 50613
phone 319 277.2401 fax 319 277.2425

Chain of Custody Record

eurofins Environment Testing America

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other IDNR

Eurofins Environment Testing America

Client Contact	**Project Manager: Chris Oelkers**		COC No
AECOM	Email Christopher Oelkers@aecom com	**Site Contact:**	**Date:** 5-1-24 — 1 of 1 COCs
501 Sycamore Street, Suite 222	**Tel/Fax:319-296-6878**	**Lab Contact:**	**Carrier:** — TALS Project #
Waterloo, IA 50703	**Analysis Turnaround Time** ☑ CALENDAR DAYS ☐ WORKING DAYS		Sampler
(319) 232-6531 Phone	TAT if different from Below ☑ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day		**For Lab Use Only:** Walk-in Client. Lab Sampling
(xxx) xxx-xxxx FAX			
Project Name Black Hawk Co IDNR			Job / SDG No
Site Black Hawk County Landfill			
P O #			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Appendix I, TSS	Appendix II, TSS	2,4-D	4,4'-DDD	beta-BHC	delta BHC	Endosulfan I	Endosulfan sulfate	Endrin aldehyde	Silvex	Sulfide	Sample Specific Notes
MW-603B			G	GW		N		X											
MW-604B			G	GW		N		X											
MW-709B	4-30-24	1130	G	GW	5	N		X											Turbidity - 7.09 NTU
MW-710B			G	GW		N		X											
MW-711B	4-30-24	1220	G	GW	5	N		X											Turbidity - 26.14 NTU
MW-712B	4-30-24	1345	G	GW	5	N		X											Turbidity - 2.63 NTU
GUE-1			G	GW		N		X											
GUE-2			G	GW		N		X											
GUW1-1			G	GW		N		X											
GUW2-1			G	GW		N		X											
[redacted] Trip Blank	4-30-24	0600	G	GW	2	N		X											
GUW2-1-FD			G	GW		N		X											

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No		Cooler Temp (°C) Obs'd._____ Corr'd._____		Therm ID No _____
Relinquished by: Ben Porter	Company: Aecom	Date/Time: 5-1-24	Received by:	Company:	Date/Time: 5/1/24 / 9:40
Relinquished by:	Company:	Date/Time	Received by:	Company:	Date/Time
Relinquished by:	Company:	Date/Time	Received in Laboratory by:	Company:	Date/Time

5/8/2024

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-280147-1

Login Number: 280147

List Source: Eurofins Cedar Falls

List Number: 1

Creator: Costello, Mackenzie K

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Chris Oelkers
AECOM
501 Sycamore Street
Suite #222
Waterloo, Iowa 50703

Generated 5/9/2024 10:43:24 AM

JOB DESCRIPTION

Black Hawk Co. IDNR

JOB NUMBER

310-280300-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



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5/9/2024 10:43:24 AM

Authorized for release by
Zach Bindert, Client Service Manager
Zach.Bindert@et.eurofinsus.com
(319)277-2401

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Job Narrative
310-280300-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 5/2/2024 1:10 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.8°C.

GC/MS VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Sample Summary

Client: AECOM
Job ID: 310-280300-1
Project/Site: Black Hawk Co. IDNR

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-280300-1	MW- 604B	Groundwater	05/01/24 15:30	05/02/24 13:10
310-280300-2	MW-710B	Groundwater	05/01/24 12:45	05/02/24 13:10
310-280300-3	MW-602B	Groundwater	05/01/24 11:30	05/02/24 13:10
310-280300-4	MW-602B-FD	Groundwater	05/01/24 11:30	05/02/24 13:10
310-280300-5	MW-501B	Groundwater	05/01/24 13:30	05/02/24 13:10
310-280300-6	Trip Blank	Water	05/01/24 00:00	05/02/24 13:10

Detection Summary

Client: AECOM
Project/Site: Black Hawk Co. IDNR

Job ID: 310-280300-1

Client Sample ID: MW- 604B — Lab Sample ID: 310-280300-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	72.2		2.00	0.660	ug/L	1		6020B	Total/NA
Chromium	8.25		5.00	1.20	ug/L	1		6020B	Total/NA
Nickel	4.72	J	5.00	2.10	ug/L	1		6020B	Total/NA
Total Suspended Solids	2.63		1.88	1.39	mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW-710B — Lab Sample ID: 310-280300-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	64.4		2.00	0.660	ug/L	1		6020B	Total/NA

Client Sample ID: MW-602B — Lab Sample ID: 310-280300-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	104		2.00	0.660	ug/L	1		6020B	Total/NA
Cobalt	2.85		0.500	0.170	ug/L	1		6020B	Total/NA
Nickel	9.51		5.00	2.10	ug/L	1		6020B	Total/NA
Total Suspended Solids	1.75	J	1.88	1.39	mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW-602B-FD — Lab Sample ID: 310-280300-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	103		2.00	0.660	ug/L	1		6020B	Total/NA
Cobalt	2.74		0.500	0.170	ug/L	1		6020B	Total/NA
Nickel	9.16		5.00	2.10	ug/L	1		6020B	Total/NA
Total Suspended Solids	3.13		1.88	1.39	mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW-501B — Lab Sample ID: 310-280300-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	116		2.00	0.660	ug/L	1		6020B	Total/NA
Chromium	7.57		5.00	1.20	ug/L	1		6020B	Total/NA
Cobalt	0.205	J	0.500	0.170	ug/L	1		6020B	Total/NA
Copper	2.17	J	5.00	1.80	ug/L	1		6020B	Total/NA
Nickel	5.20		5.00	2.10	ug/L	1		6020B	Total/NA
Total Suspended Solids	2.00		1.88	1.39	mg/L	1		I-3765-85	Total/NA

Client Sample ID: Trip Blank — Lab Sample ID: 310-280300-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,2-Dichloroethane	0.681	J	1.00	0.390	ug/L	1		8260D	Total/NA

This Detection Summary does not include radiochemical test results.

Client: AECOM
Project/Site: Black Hawk Co. IDNR

Job ID: 310-280300-1

Client Sample ID: MW- 604B
Date Collected: 05/01/24 15:30
Date Received: 05/02/24 13:10

Lab Sample ID: 310-280300-1
Matrix: Groundwater

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/07/24 14:12	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/07/24 14:12	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/07/24 14:12	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/07/24 14:12	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/07/24 14:12	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/07/24 14:12	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/07/24 14:12	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/07/24 14:12	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/07/24 14:12	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/07/24 14:12	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/07/24 14:12	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/07/24 14:12	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/07/24 14:12	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/07/24 14:12	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/07/24 14:12	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/07/24 14:12	1
Acetone	<3.10		10.0	3.10	ug/L			05/07/24 14:12	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/07/24 14:12	1
Benzene	<0.220		0.500	0.220	ug/L			05/07/24 14:12	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/07/24 14:12	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/07/24 14:12	1
Bromoform	<0.780		5.00	0.780	ug/L			05/07/24 14:12	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/07/24 14:12	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/07/24 14:12	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/07/24 14:12	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/07/24 14:12	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/07/24 14:12	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/07/24 14:12	1
Chloroform	<1.30		3.00	1.30	ug/L			05/07/24 14:12	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/07/24 14:12	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/07/24 14:12	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/07/24 14:12	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/07/24 14:12	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/07/24 14:12	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/07/24 14:12	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/07/24 14:12	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/07/24 14:12	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/07/24 14:12	1
Styrene	<0.370		1.00	0.370	ug/L			05/07/24 14:12	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/07/24 14:12	1
Toluene	<0.430		1.00	0.430	ug/L			05/07/24 14:12	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/07/24 14:12	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/07/24 14:12	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/07/24 14:12	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/07/24 14:12	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/07/24 14:12	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/07/24 14:12	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/07/24 14:12	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/07/24 14:12	1

Client: AECOM
Project/Site: Black Hawk Co. IDNR

Job ID: 310-280300-1

Client Sample ID: MW- 604B
Date Collected: 05/01/24 15:30
Date Received: 05/02/24 13:10

Lab Sample ID: 310-280300-1
Matrix: Groundwater

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*113*		*73 - 130*		*05/07/24 14:12*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*05/07/24 14:12*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*		*05/07/24 14:12*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		05/06/24 10:00	05/07/24 19:03	1
Arsenic	<0.530		2.00	0.530	ug/L		05/06/24 10:00	05/07/24 19:03	1
Barium	**72.2**		2.00	0.660	ug/L		05/06/24 10:00	05/07/24 19:03	1
Beryllium	<0.330		1.00	0.330	ug/L		05/06/24 10:00	05/07/24 19:03	1
Cadmium	<0.100		0.200	0.100	ug/L		05/06/24 10:00	05/07/24 19:03	1
Chromium	**8.25**		5.00	1.20	ug/L		05/06/24 10:00	05/07/24 19:03	1
Cobalt	<0.170		0.500	0.170	ug/L		05/06/24 10:00	05/07/24 19:03	1
Copper	<1.80		5.00	1.80	ug/L		05/06/24 10:00	05/07/24 19:03	1
Lead	<0.260		0.500	0.260	ug/L		05/06/24 10:00	05/07/24 19:03	1
Nickel	**4.72**	**J**	5.00	2.10	ug/L		05/06/24 10:00	05/07/24 19:03	1
Selenium	<1.40		5.00	1.40	ug/L		05/06/24 10:00	05/07/24 19:03	1
Silver	<0.500		1.00	0.500	ug/L		05/06/24 10:00	05/07/24 19:03	1
Thallium	<0.570		1.00	0.570	ug/L		05/06/24 10:00	05/07/24 19:03	1
Vanadium	<1.10		5.00	1.10	ug/L		05/06/24 10:00	05/07/24 19:03	1
Zinc	<9.70		20.0	9.70	ug/L		05/06/24 10:00	05/07/24 19:03	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**2.63**		1.88	1.39	mg/L			05/04/24 09:40	1

Client: AECOM
Project/Site: Black Hawk Co. IDNR

Job ID: 310-280300-1

Client Sample ID: MW-710B
Date Collected: 05/01/24 12:45
Date Received: 05/02/24 13:10

Lab Sample ID: 310-280300-2
Matrix: Groundwater

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/07/24 14:35	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/07/24 14:35	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/07/24 14:35	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/07/24 14:35	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/07/24 14:35	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/07/24 14:35	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/07/24 14:35	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/07/24 14:35	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/07/24 14:35	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/07/24 14:35	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/07/24 14:35	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/07/24 14:35	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/07/24 14:35	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/07/24 14:35	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/07/24 14:35	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/07/24 14:35	1
Acetone	<3.10		10.0	3.10	ug/L			05/07/24 14:35	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/07/24 14:35	1
Benzene	<0.220		0.500	0.220	ug/L			05/07/24 14:35	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/07/24 14:35	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/07/24 14:35	1
Bromoform	<0.780		5.00	0.780	ug/L			05/07/24 14:35	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/07/24 14:35	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/07/24 14:35	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/07/24 14:35	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/07/24 14:35	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/07/24 14:35	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/07/24 14:35	1
Chloroform	<1.30		3.00	1.30	ug/L			05/07/24 14:35	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/07/24 14:35	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/07/24 14:35	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/07/24 14:35	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/07/24 14:35	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/07/24 14:35	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/07/24 14:35	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/07/24 14:35	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/07/24 14:35	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/07/24 14:35	1
Styrene	<0.370		1.00	0.370	ug/L			05/07/24 14:35	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/07/24 14:35	1
Toluene	<0.430		1.00	0.430	ug/L			05/07/24 14:35	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/07/24 14:35	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/07/24 14:35	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/07/24 14:35	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/07/24 14:35	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/07/24 14:35	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/07/24 14:35	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/07/24 14:35	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/07/24 14:35	1

Client: AECOM
Project/Site: Black Hawk Co. IDNR

Job ID: 310-280300-1

Client Sample ID: MW-710B

Date Collected: 05/01/24 12:45
Date Received: 05/02/24 13:10

Lab Sample ID: 310-280300-2

Matrix: Groundwater

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*115*		*73 - 130*		*05/07/24 14:35*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*05/07/24 14:35*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*		*05/07/24 14:35*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		05/06/24 10:00	05/07/24 19:14	1
Arsenic	<0.530		2.00	0.530	ug/L		05/06/24 10:00	05/07/24 19:14	1
Barium	**64.4**		2.00	0.660	ug/L		05/06/24 10:00	05/07/24 19:14	1
Beryllium	<0.330		1.00	0.330	ug/L		05/06/24 10:00	05/07/24 19:14	1
Cadmium	<0.100		0.200	0.100	ug/L		05/06/24 10:00	05/07/24 19:14	1
Chromium	<1.20		5.00	1.20	ug/L		05/06/24 10:00	05/07/24 19:14	1
Cobalt	<0.170		0.500	0.170	ug/L		05/06/24 10:00	05/07/24 19:14	1
Copper	<1.80		5.00	1.80	ug/L		05/06/24 10:00	05/07/24 19:14	1
Lead	<0.260		0.500	0.260	ug/L		05/06/24 10:00	05/07/24 19:14	1
Nickel	<2.10		5.00	2.10	ug/L		05/06/24 10:00	05/07/24 19:14	1
Selenium	<1.40		5.00	1.40	ug/L		05/06/24 10:00	05/07/24 19:14	1
Silver	<0.500		1.00	0.500	ug/L		05/06/24 10:00	05/07/24 19:14	1
Thallium	<0.570		1.00	0.570	ug/L		05/06/24 10:00	05/07/24 19:14	1
Vanadium	<1.10		5.00	1.10	ug/L		05/06/24 10:00	05/07/24 19:14	1
Zinc	<9.70		20.0	9.70	ug/L		05/06/24 10:00	05/08/24 15:13	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	<1.39		1.88	1.39	mg/L			05/04/24 09:40	1

Client: AECOM
Project/Site: Black Hawk Co. IDNR

Job ID: 310-280300-1

Client Sample ID: MW-602B
Date Collected: 05/01/24 11:30
Date Received: 05/02/24 13:10

Lab Sample ID: 310-280300-3
Matrix: Groundwater

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/07/24 14:57	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/07/24 14:57	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/07/24 14:57	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/07/24 14:57	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/07/24 14:57	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/07/24 14:57	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/07/24 14:57	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/07/24 14:57	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/07/24 14:57	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/07/24 14:57	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/07/24 14:57	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/07/24 14:57	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/07/24 14:57	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/07/24 14:57	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/07/24 14:57	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/07/24 14:57	1
Acetone	<3.10		10.0	3.10	ug/L			05/07/24 14:57	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/07/24 14:57	1
Benzene	<0.220		0.500	0.220	ug/L			05/07/24 14:57	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/07/24 14:57	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/07/24 14:57	1
Bromoform	<0.780		5.00	0.780	ug/L			05/07/24 14:57	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/07/24 14:57	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/07/24 14:57	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/07/24 14:57	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/07/24 14:57	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/07/24 14:57	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/07/24 14:57	1
Chloroform	<1.30		3.00	1.30	ug/L			05/07/24 14:57	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/07/24 14:57	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/07/24 14:57	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/07/24 14:57	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/07/24 14:57	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/07/24 14:57	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/07/24 14:57	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/07/24 14:57	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/07/24 14:57	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/07/24 14:57	1
Styrene	<0.370		1.00	0.370	ug/L			05/07/24 14:57	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/07/24 14:57	1
Toluene	<0.430		1.00	0.430	ug/L			05/07/24 14:57	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/07/24 14:57	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/07/24 14:57	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/07/24 14:57	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/07/24 14:57	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/07/24 14:57	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/07/24 14:57	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/07/24 14:57	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/07/24 14:57	1

Client: AECOM
Project/Site: Black Hawk Co. IDNR

Job ID: 310-280300-1

Client Sample ID: MW-602B

Date Collected: 05/01/24 11:30
Date Received: 05/02/24 13:10

Lab Sample ID: 310-280300-3

Matrix: Groundwater

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*115*		*73 - 130*		*05/07/24 14:57*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*05/07/24 14:57*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*		*05/07/24 14:57*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		05/06/24 10:00	05/07/24 19:17	1
Arsenic	<0.530		2.00	0.530	ug/L		05/06/24 10:00	05/07/24 19:17	1
Barium	**104**		2.00	0.660	ug/L		05/06/24 10:00	05/07/24 19:17	1
Beryllium	<0.330		1.00	0.330	ug/L		05/06/24 10:00	05/07/24 19:17	1
Cadmium	<0.100		0.200	0.100	ug/L		05/06/24 10:00	05/07/24 19:17	1
Chromium	<1.20		5.00	1.20	ug/L		05/06/24 10:00	05/07/24 19:17	1
Cobalt	**2.85**		0.500	0.170	ug/L		05/06/24 10:00	05/07/24 19:17	1
Copper	<1.80		5.00	1.80	ug/L		05/06/24 10:00	05/07/24 19:17	1
Lead	<0.260		0.500	0.260	ug/L		05/06/24 10:00	05/07/24 19:17	1
Nickel	**9.51**		5.00	2.10	ug/L		05/06/24 10:00	05/07/24 19:17	1
Selenium	<1.40		5.00	1.40	ug/L		05/06/24 10:00	05/07/24 19:17	1
Silver	<0.500		1.00	0.500	ug/L		05/06/24 10:00	05/07/24 19:17	1
Thallium	<0.570		1.00	0.570	ug/L		05/06/24 10:00	05/07/24 19:17	1
Vanadium	<1.10		5.00	1.10	ug/L		05/06/24 10:00	05/07/24 19:17	1
Zinc	<9.70		20.0	9.70	ug/L		05/06/24 10:00	05/08/24 15:17	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**1.75**	**J**	1.88	1.39	mg/L			05/04/24 09:40	1

Client: AECOM
Project/Site: Black Hawk Co. IDNR

Job ID: 310-280300-1

Client Sample ID: MW-602B-FD
Date Collected: 05/01/24 11:30
Date Received: 05/02/24 13:10

Lab Sample ID: 310-280300-4
Matrix: Groundwater

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/07/24 15:20	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/07/24 15:20	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/07/24 15:20	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/07/24 15:20	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/07/24 15:20	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/07/24 15:20	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/07/24 15:20	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/07/24 15:20	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/07/24 15:20	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/07/24 15:20	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/07/24 15:20	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/07/24 15:20	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/07/24 15:20	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/07/24 15:20	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/07/24 15:20	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/07/24 15:20	1
Acetone	<3.10		10.0	3.10	ug/L			05/07/24 15:20	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/07/24 15:20	1
Benzene	<0.220		0.500	0.220	ug/L			05/07/24 15:20	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/07/24 15:20	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/07/24 15:20	1
Bromoform	<0.780		5.00	0.780	ug/L			05/07/24 15:20	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/07/24 15:20	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/07/24 15:20	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/07/24 15:20	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/07/24 15:20	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/07/24 15:20	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/07/24 15:20	1
Chloroform	<1.30		3.00	1.30	ug/L			05/07/24 15:20	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/07/24 15:20	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/07/24 15:20	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/07/24 15:20	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/07/24 15:20	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/07/24 15:20	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/07/24 15:20	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/07/24 15:20	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/07/24 15:20	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/07/24 15:20	1
Styrene	<0.370		1.00	0.370	ug/L			05/07/24 15:20	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/07/24 15:20	1
Toluene	<0.430		1.00	0.430	ug/L			05/07/24 15:20	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/07/24 15:20	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/07/24 15:20	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/07/24 15:20	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/07/24 15:20	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/07/24 15:20	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/07/24 15:20	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/07/24 15:20	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/07/24 15:20	1

Client: AECOM
Project/Site: Black Hawk Co. IDNR

Job ID: 310-280300-1

Client Sample ID: MW-602B-FD

Date Collected: 05/01/24 11:30
Date Received: 05/02/24 13:10

Lab Sample ID: 310-280300-4

Matrix: Groundwater

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*115*		*73 - 130*		*05/07/24 15:20*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*05/07/24 15:20*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*05/07/24 15:20*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		05/06/24 10:00	05/07/24 19:19	1
Arsenic	<0.530		2.00	0.530	ug/L		05/06/24 10:00	05/07/24 19:19	1
Barium	**103**		2.00	0.660	ug/L		05/06/24 10:00	05/07/24 19:19	1
Beryllium	<0.330		1.00	0.330	ug/L		05/06/24 10:00	05/07/24 19:19	1
Cadmium	<0.100		0.200	0.100	ug/L		05/06/24 10:00	05/07/24 19:19	1
Chromium	<1.20		5.00	1.20	ug/L		05/06/24 10:00	05/07/24 19:19	1
Cobalt	**2.74**		0.500	0.170	ug/L		05/06/24 10:00	05/07/24 19:19	1
Copper	<1.80		5.00	1.80	ug/L		05/06/24 10:00	05/07/24 19:19	1
Lead	<0.260		0.500	0.260	ug/L		05/06/24 10:00	05/07/24 19:19	1
Nickel	**9.16**		5.00	2.10	ug/L		05/06/24 10:00	05/07/24 19:19	1
Selenium	<1.40		5.00	1.40	ug/L		05/06/24 10:00	05/07/24 19:19	1
Silver	<0.500		1.00	0.500	ug/L		05/06/24 10:00	05/07/24 19:19	1
Thallium	<0.570		1.00	0.570	ug/L		05/06/24 10:00	05/07/24 19:19	1
Vanadium	<1.10		5.00	1.10	ug/L		05/06/24 10:00	05/07/24 19:19	1
Zinc	<9.70		20.0	9.70	ug/L		05/06/24 10:00	05/08/24 15:20	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**3.13**		1.88	1.39	mg/L			05/04/24 09:40	1

Client: AECOM
Project/Site: Black Hawk Co. IDNR

Job ID: 310-280300-1

Client Sample ID: MW-501B
Date Collected: 05/01/24 13:30
Date Received: 05/02/24 13:10

Lab Sample ID: 310-280300-5
Matrix: Groundwater

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/07/24 15:42	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/07/24 15:42	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/07/24 15:42	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/07/24 15:42	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/07/24 15:42	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/07/24 15:42	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/07/24 15:42	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/07/24 15:42	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/07/24 15:42	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/07/24 15:42	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/07/24 15:42	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/07/24 15:42	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/07/24 15:42	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/07/24 15:42	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/07/24 15:42	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/07/24 15:42	1
Acetone	<3.10		10.0	3.10	ug/L			05/07/24 15:42	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/07/24 15:42	1
Benzene	<0.220		0.500	0.220	ug/L			05/07/24 15:42	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/07/24 15:42	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/07/24 15:42	1
Bromoform	<0.780		5.00	0.780	ug/L			05/07/24 15:42	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/07/24 15:42	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/07/24 15:42	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/07/24 15:42	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/07/24 15:42	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/07/24 15:42	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/07/24 15:42	1
Chloroform	<1.30		3.00	1.30	ug/L			05/07/24 15:42	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/07/24 15:42	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/07/24 15:42	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/07/24 15:42	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/07/24 15:42	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/07/24 15:42	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/07/24 15:42	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/07/24 15:42	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/07/24 15:42	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/07/24 15:42	1
Styrene	<0.370		1.00	0.370	ug/L			05/07/24 15:42	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/07/24 15:42	1
Toluene	<0.430		1.00	0.430	ug/L			05/07/24 15:42	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/07/24 15:42	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/07/24 15:42	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/07/24 15:42	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/07/24 15:42	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/07/24 15:42	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/07/24 15:42	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/07/24 15:42	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/07/24 15:42	1

Client: AECOM
Project/Site: Black Hawk Co. IDNR

Job ID: 310-280300-1

Client Sample ID: MW-501B

Date Collected: 05/01/24 13:30
Date Received: 05/02/24 13:10

Lab Sample ID: 310-280300-5

Matrix: Groundwater

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*113*		*73 - 130*		*05/07/24 15:42*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*05/07/24 15:42*	*1*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*		*05/07/24 15:42*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		05/06/24 10:00	05/07/24 19:21	1
Arsenic	<0.530		2.00	0.530	ug/L		05/06/24 10:00	05/07/24 19:21	1
Barium	**116**		2.00	0.660	ug/L		05/06/24 10:00	05/07/24 19:21	1
Beryllium	<0.330		1.00	0.330	ug/L		05/06/24 10:00	05/07/24 19:21	1
Cadmium	<0.100		0.200	0.100	ug/L		05/06/24 10:00	05/07/24 19:21	1
Chromium	**7.57**		5.00	1.20	ug/L		05/06/24 10:00	05/07/24 19:21	1
Cobalt	**0.205**	**J**	0.500	0.170	ug/L		05/06/24 10:00	05/07/24 19:21	1
Copper	**2.17**	**J**	5.00	1.80	ug/L		05/06/24 10:00	05/07/24 19:21	1
Lead	<0.260		0.500	0.260	ug/L		05/06/24 10:00	05/07/24 19:21	1
Nickel	**5.20**		5.00	2.10	ug/L		05/06/24 10:00	05/07/24 19:21	1
Selenium	<1.40		5.00	1.40	ug/L		05/06/24 10:00	05/07/24 19:21	1
Silver	<0.500		1.00	0.500	ug/L		05/06/24 10:00	05/07/24 19:21	1
Thallium	<0.570		1.00	0.570	ug/L		05/06/24 10:00	05/07/24 19:21	1
Vanadium	<1.10		5.00	1.10	ug/L		05/06/24 10:00	05/07/24 19:21	1
Zinc	<9.70		20.0	9.70	ug/L		05/06/24 10:00	05/08/24 15:24	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**2.00**		1.88	1.39	mg/L			05/04/24 12:30	1

Client: AECOM
Project/Site: Black Hawk Co. IDNR

Job ID: 310-280300-1

Client Sample ID: Trip Blank
Date Collected: 05/01/24 00:00
Date Received: 05/02/24 13:10

Lab Sample ID: 310-280300-6
Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/07/24 13:49	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/07/24 13:49	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/07/24 13:49	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/07/24 13:49	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/07/24 13:49	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/07/24 13:49	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/07/24 13:49	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/07/24 13:49	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/07/24 13:49	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/07/24 13:49	1
1,2-Dichloroethane	**0.681**	**J**	1.00	0.390	ug/L			05/07/24 13:49	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/07/24 13:49	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/07/24 13:49	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/07/24 13:49	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/07/24 13:49	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/07/24 13:49	1
Acetone	<3.10		10.0	3.10	ug/L			05/07/24 13:49	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/07/24 13:49	1
Benzene	<0.220		0.500	0.220	ug/L			05/07/24 13:49	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/07/24 13:49	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/07/24 13:49	1
Bromoform	<0.780		5.00	0.780	ug/L			05/07/24 13:49	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/07/24 13:49	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/07/24 13:49	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/07/24 13:49	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/07/24 13:49	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/07/24 13:49	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/07/24 13:49	1
Chloroform	<1.30		3.00	1.30	ug/L			05/07/24 13:49	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/07/24 13:49	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/07/24 13:49	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/07/24 13:49	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/07/24 13:49	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/07/24 13:49	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/07/24 13:49	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/07/24 13:49	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/07/24 13:49	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/07/24 13:49	1
Styrene	<0.370		1.00	0.370	ug/L			05/07/24 13:49	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/07/24 13:49	1
Toluene	<0.430		1.00	0.430	ug/L			05/07/24 13:49	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/07/24 13:49	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/07/24 13:49	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/07/24 13:49	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/07/24 13:49	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/07/24 13:49	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/07/24 13:49	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/07/24 13:49	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/07/24 13:49	1

Client: AECOM
Project/Site: Black Hawk Co. IDNR

Job ID: 310-280300-1

Client Sample ID: Trip Blank
Date Collected: 05/01/24 00:00
Date Received: 05/02/24 13:10

Lab Sample ID: 310-280300-6
Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	113		73 - 130		05/07/24 13:49	1
Toluene-d8 (Surr)	99		80 - 120		05/07/24 13:49	1
4-Bromofluorobenzene (Surr)	103		80 - 120		05/07/24 13:49	1

Definitions/Glossary

Client: AECOM
Job ID: 310-280300-1
Project/Site: Black Hawk Co. IDNR

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Surrogate Summary

Client: AECOM
Project/Site: Black Hawk Co. IDNR

Job ID: 310-280300-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Groundwater — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-280300-1	MW- 604B	113	98	102
310-280300-1 MS	MW- 604B	107	100	101
310-280300-1 MSD	MW- 604B	102	100	101
310-280300-2	MW-710B	115	100	102
310-280300-3	MW-602B	115	98	102
310-280300-4	MW-602B-FD	115	98	101
310-280300-5	MW-501B	113	98	103

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-280300-6	Trip Blank	113	99	103
LCS 310-420876/6	Lab Control Sample	101	100	99
LCS 310-420876/7	Lab Control Sample	115	99	102
MB 310-420876/5	Method Blank	110	99	102

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 310-420876/5
Matrix: Water
Analysis Batch: 420876

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/07/24 12:40	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/07/24 12:40	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/07/24 12:40	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/07/24 12:40	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/07/24 12:40	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/07/24 12:40	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/07/24 12:40	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/07/24 12:40	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/07/24 12:40	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/07/24 12:40	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/07/24 12:40	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/07/24 12:40	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/07/24 12:40	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/07/24 12:40	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/07/24 12:40	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/07/24 12:40	1
Acetone	<3.10		10.0	3.10	ug/L			05/07/24 12:40	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/07/24 12:40	1
Benzene	<0.220		0.500	0.220	ug/L			05/07/24 12:40	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/07/24 12:40	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/07/24 12:40	1
Bromoform	<0.780		5.00	0.780	ug/L			05/07/24 12:40	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/07/24 12:40	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/07/24 12:40	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/07/24 12:40	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/07/24 12:40	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/07/24 12:40	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/07/24 12:40	1
Chloroform	<1.30		3.00	1.30	ug/L			05/07/24 12:40	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/07/24 12:40	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/07/24 12:40	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/07/24 12:40	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/07/24 12:40	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/07/24 12:40	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/07/24 12:40	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/07/24 12:40	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/07/24 12:40	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/07/24 12:40	1
Styrene	<0.370		1.00	0.370	ug/L			05/07/24 12:40	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/07/24 12:40	1
Toluene	<0.430		1.00	0.430	ug/L			05/07/24 12:40	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/07/24 12:40	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/07/24 12:40	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/07/24 12:40	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/07/24 12:40	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/07/24 12:40	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/07/24 12:40	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/07/24 12:40	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-420876/5
Matrix: Water
Analysis Batch: 420876

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/07/24 12:40	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*110*		*73 - 130*		*05/07/24 12:40*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*05/07/24 12:40*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*		*05/07/24 12:40*	*1*

Lab Sample ID: LCS 310-420876/6
Matrix: Water
Analysis Batch: 420876

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	20.0	19.76		ug/L		99	71 - 120
1,1,1-Trichloroethane	20.0	19.86		ug/L		99	73 - 129
1,1,2,2-Tetrachloroethane	20.0	17.69		ug/L		88	68 - 124
1,1,2-Trichloroethane	20.0	18.97		ug/L		95	73 - 123
1,1-Dichloroethane	20.0	18.49		ug/L		92	70 - 127
1,1-Dichloroethene	20.0	18.51		ug/L		93	63 - 132
1,2,3-Trichloropropane	20.0	18.29		ug/L		91	65 - 127
1,2-Dibromo-3-Chloropropane	20.0	18.19		ug/L		91	50 - 150
1,2-Dibromoethane (EDB)	20.0	19.22		ug/L		96	75 - 125
1,2-Dichlorobenzene	20.0	17.93		ug/L		90	74 - 120
1,2-Dichloroethane	20.0	18.60		ug/L		93	71 - 125
1,2-Dichloropropane	20.0	19.28		ug/L		96	73 - 124
1,4-Dichlorobenzene	20.0	18.34		ug/L		92	72 - 120
2-Butanone (MEK)	40.0	37.85		ug/L		95	50 - 150
2-Hexanone	40.0	35.53		ug/L		89	60 - 140
4-Methyl-2-pentanone (MIBK)	40.0	35.94		ug/L		90	60 - 139
Acetone	40.0	35.24		ug/L		88	50 - 150
Acrylonitrile	200	185.5		ug/L		93	50 - 150
Benzene	20.0	18.61		ug/L		93	72 - 124
Bromochloromethane	20.0	18.63		ug/L		93	73 - 130
Bromodichloromethane	20.0	18.20		ug/L		91	74 - 122
Bromoform	20.0	18.39		ug/L		92	61 - 122
Carbon disulfide	20.0	17.71		ug/L		89	59 - 135
Carbon tetrachloride	20.0	20.45		ug/L		102	67 - 132
Chlorobenzene	20.0	18.39		ug/L		92	76 - 120
Chlorodibromomethane	20.0	18.90		ug/L		95	71 - 121
Chloroform	20.0	18.94		ug/L		95	72 - 125
cis-1,2-Dichloroethene	20.0	18.34		ug/L		92	74 - 123
cis-1,3-Dichloropropene	20.0	19.56		ug/L		98	71 - 125
Dibromomethane	20.0	18.51		ug/L		93	74 - 125
Ethylbenzene	20.0	18.78		ug/L		94	74 - 122
Iodomethane	20.0	18.82		ug/L		94	10 - 150
Methylene Chloride	20.0	18.32		ug/L		92	50 - 150
Styrene	20.0	18.67		ug/L		93	74 - 121
Tetrachloroethene	20.0	19.53		ug/L		98	71 - 130
Toluene	20.0	18.12		ug/L		91	74 - 123

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-420876/6
Matrix: Water
Analysis Batch: 420876

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
trans-1,2-Dichloroethene	20.0	18.76		ug/L		94	70 - 126
trans-1,3-Dichloropropene	20.0	19.01		ug/L		95	69 - 123
trans-1,4-Dichloro-2-butene	20.0	18.06		ug/L		90	50 - 150
Trichloroethene	20.0	19.11		ug/L		96	72 - 126
Vinyl acetate	40.0	40.09		ug/L		100	50 - 150
Xylenes, Total	40.0	37.74		ug/L		94	73 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*101*		*73 - 130*
Toluene-d8 (Surr)	*100*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*

Lab Sample ID: LCS 310-420876/7
Matrix: Water
Analysis Batch: 420876

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	18.22		ug/L		91	23 - 150
Chloroethane	20.0	20.59		ug/L		103	54 - 136
Chloromethane	20.0	19.40		ug/L		97	38 - 150
Trichlorofluoromethane	20.0	22.32		ug/L		112	54 - 149
Vinyl chloride	20.0	20.86		ug/L		104	56 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*115*		*73 - 130*
Toluene-d8 (Surr)	*99*		*80 - 120*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*

Lab Sample ID: 310-280300-1 MS
Matrix: Groundwater
Analysis Batch: 420876

Client Sample ID: MW- 604B
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	<0.380		20.0	15.46		ug/L		77	55 - 130
1,1,1-Trichloroethane	<0.190		20.0	15.86		ug/L		79	52 - 130
1,1,2,2-Tetrachloroethane	<0.470		20.0	15.61		ug/L		78	54 - 130
1,1,2-Trichloroethane	<0.450		20.0	15.48		ug/L		77	58 - 130
1,1-Dichloroethane	<0.220		20.0	15.47		ug/L		77	49 - 130
1,1-Dichloroethene	<0.560		20.0	14.82		ug/L		74	37 - 132
1,2,3-Trichloropropane	<0.590		20.0	15.58		ug/L		78	49 - 130
1,2-Dibromo-3-Chloropropane	<1.20		20.0	15.90		ug/L		80	38 - 150
1,2-Dibromoethane (EDB)	<0.340		20.0	15.27		ug/L		76	60 - 130
1,2-Dichlorobenzene	<0.370		20.0	15.31		ug/L		77	59 - 130
1,2-Dichloroethane	<0.390		20.0	15.44		ug/L		77	51 - 130
1,2-Dichloropropane	<0.270		20.0	15.57		ug/L		78	57 - 130
1,4-Dichlorobenzene	<0.230		20.0	15.14		ug/L		76	57 - 130
2-Butanone (MEK)	<2.10		40.0	29.14		ug/L		73	38 - 150
2-Hexanone	<2.00		40.0	30.41		ug/L		76	46 - 140

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 310-280300-1 MS
Matrix: Groundwater
Analysis Batch: 420876

Client Sample ID: MW- 604B
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
4-Methyl-2-pentanone (MIBK)	<2.10		40.0	29.31		ug/L		73	47 - 139
Acetone	<3.10		40.0	28.58		ug/L		71	31 - 150
Acrylonitrile	<2.20		200	152.3		ug/L		76	40 - 150
Benzene	<0.220		20.0	15.82		ug/L		79	46 - 130
Bromochloromethane	<0.540		20.0	15.92		ug/L		80	57 - 130
Bromodichloromethane	<0.390		20.0	15.04		ug/L		75	57 - 130
Bromoform	<0.780		20.0	14.52		ug/L		73	44 - 130
Carbon disulfide	<0.450		20.0	15.27		ug/L		76	38 - 135
Carbon tetrachloride	<0.650		20.0	17.84		ug/L		89	45 - 132
Chlorobenzene	<0.400		20.0	14.96		ug/L		75	59 - 130
Chlorodibromomethane	<0.750		20.0	15.18		ug/L		76	54 - 130
Chloroform	<1.30		20.0	15.27		ug/L		76	51 - 130
cis-1,2-Dichloroethene	<0.210		20.0	15.89		ug/L		79	45 - 130
cis-1,3-Dichloropropene	<0.250		20.0	14.85		ug/L		74	53 - 130
Dibromomethane	<0.330		20.0	15.35		ug/L		77	59 - 130
Ethylbenzene	<0.310		20.0	15.22		ug/L		76	45 - 130
Iodomethane	<7.00		20.0	17.24		ug/L		86	10 - 150
Methylene Chloride	<1.70		20.0	15.32		ug/L		77	37 - 150
Styrene	<0.370		20.0	15.46		ug/L		77	47 - 130
Tetrachloroethene	<0.480		20.0	15.17		ug/L		76	47 - 130
Toluene	<0.430		20.0	14.50		ug/L		73	51 - 130
trans-1,2-Dichloroethene	<0.270		20.0	15.61		ug/L		78	48 - 130
trans-1,3-Dichloropropene	<0.560		20.0	14.59		ug/L		73	50 - 130
trans-1,4-Dichloro-2-butene	<1.10		20.0	13.86		ug/L		69	26 - 150
Trichloroethene	<0.430		20.0	15.23		ug/L		76	51 - 130
Vinyl acetate	<2.50		40.0	30.43		ug/L		76	29 - 150
Xylenes, Total	<0.400		40.0	30.94		ug/L		77	43 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*107*		*73 - 130*
Toluene-d8 (Surr)	*100*		*80 - 120*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*

Lab Sample ID: 310-280300-1 MSD
Matrix: Groundwater
Analysis Batch: 420876

Client Sample ID: MW- 604B
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	<0.380		20.0	16.03		ug/L		80	55 - 130	4	20
1,1,1-Trichloroethane	<0.190		20.0	15.74		ug/L		79	52 - 130	1	20
1,1,2,2-Tetrachloroethane	<0.470		20.0	16.29		ug/L		81	54 - 130	4	20
1,1,2-Trichloroethane	<0.450		20.0	15.97		ug/L		80	58 - 130	3	20
1,1-Dichloroethane	<0.220		20.0	15.17		ug/L		76	49 - 130	2	20
1,1-Dichloroethene	<0.560		20.0	14.16		ug/L		71	37 - 132	5	26
1,2,3-Trichloropropane	<0.590		20.0	15.84		ug/L		79	49 - 130	2	26
1,2-Dibromo-3-Chloropropane	<1.20		20.0	16.76		ug/L		84	38 - 150	5	20
1,2-Dibromoethane (EDB)	<0.340		20.0	15.85		ug/L		79	60 - 130	4	20
1,2-Dichlorobenzene	<0.370		20.0	16.07		ug/L		80	59 - 130	5	20

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 310-280300-1 MSD
Matrix: Groundwater
Analysis Batch: 420876

Client Sample ID: MW- 604B
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2-Dichloroethane	<0.390		20.0	15.73		ug/L		79	51 - 130	2	20
1,2-Dichloropropane	<0.270		20.0	15.92		ug/L		80	57 - 130	2	20
1,4-Dichlorobenzene	<0.230		20.0	15.55		ug/L		78	57 - 130	3	20
2-Butanone (MEK)	<2.10		40.0	29.37		ug/L		73	38 - 150	1	20
2-Hexanone	<2.00		40.0	31.18		ug/L		78	46 - 140	3	20
4-Methyl-2-pentanone (MIBK)	<2.10		40.0	30.57		ug/L		76	47 - 139	4	20
Acetone	<3.10		40.0	28.77		ug/L		72	31 - 150	1	29
Acrylonitrile	<2.20		200	152.4		ug/L		76	40 - 150	0	20
Benzene	<0.220		20.0	15.62		ug/L		78	46 - 130	1	20
Bromochloromethane	<0.540		20.0	15.67		ug/L		78	57 - 130	2	20
Bromodichloromethane	<0.390		20.0	15.17		ug/L		76	57 - 130	1	20
Bromoform	<0.780		20.0	15.20		ug/L		76	44 - 130	5	20
Carbon disulfide	<0.450		20.0	13.92		ug/L		70	38 - 135	9	30
Carbon tetrachloride	<0.650		20.0	17.48		ug/L		87	45 - 132	2	20
Chlorobenzene	<0.400		20.0	15.24		ug/L		76	59 - 130	2	20
Chlorodibromomethane	<0.750		20.0	15.77		ug/L		79	54 - 130	4	20
Chloroform	<1.30		20.0	15.20		ug/L		76	51 - 130	0	20
cis-1,2-Dichloroethene	<0.210		20.0	15.52		ug/L		78	45 - 130	2	20
cis-1,3-Dichloropropene	<0.250		20.0	15.31		ug/L		77	53 - 130	3	20
Dibromomethane	<0.330		20.0	15.44		ug/L		77	59 - 130	1	20
Ethylbenzene	<0.310		20.0	15.42		ug/L		77	45 - 130	1	20
Iodomethane	<7.00		20.0	17.11		ug/L		86	10 - 150	1	35
Methylene Chloride	<1.70		20.0	15.22		ug/L		76	37 - 150	1	24
Styrene	<0.370		20.0	15.45		ug/L		77	47 - 130	0	20
Tetrachloroethene	<0.480		20.0	15.39		ug/L		77	47 - 130	1	20
Toluene	<0.430		20.0	14.45		ug/L		72	51 - 130	0	20
trans-1,2-Dichloroethene	<0.270		20.0	15.15		ug/L		76	48 - 130	3	22
trans-1,3-Dichloropropene	<0.560		20.0	14.99		ug/L		75	50 - 130	3	20
trans-1,4-Dichloro-2-butene	<1.10		20.0	14.21		ug/L		71	26 - 150	2	23
Trichloroethene	<0.430		20.0	15.28		ug/L		76	51 - 130	0	20
Vinyl acetate	<2.50		40.0	31.23		ug/L		78	29 - 150	3	23
Xylenes, Total	<0.400		40.0	30.98		ug/L		77	43 - 130	0	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*102*		*73 - 130*
Toluene-d8 (Surr)	*100*		*80 - 120*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-420670/1-A
Matrix: Water
Analysis Batch: 420954

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 420670

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		05/06/24 10:00	05/07/24 18:49	1
Arsenic	<0.530		2.00	0.530	ug/L		05/06/24 10:00	05/07/24 18:49	1
Barium	<0.660		2.00	0.660	ug/L		05/06/24 10:00	05/07/24 18:49	1
Beryllium	<0.330		1.00	0.330	ug/L		05/06/24 10:00	05/07/24 18:49	1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 310-420670/1-A
Matrix: Water
Analysis Batch: 420954

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 420670

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	<0.100		0.200	0.100	ug/L		05/06/24 10:00	05/07/24 18:49	1
Chromium	<1.20		5.00	1.20	ug/L		05/06/24 10:00	05/07/24 18:49	1
Cobalt	<0.170		0.500	0.170	ug/L		05/06/24 10:00	05/07/24 18:49	1
Copper	<1.80		5.00	1.80	ug/L		05/06/24 10:00	05/07/24 18:49	1
Lead	<0.260		0.500	0.260	ug/L		05/06/24 10:00	05/07/24 18:49	1
Nickel	<2.10		5.00	2.10	ug/L		05/06/24 10:00	05/07/24 18:49	1
Selenium	<1.40		5.00	1.40	ug/L		05/06/24 10:00	05/07/24 18:49	1
Silver	<0.500		1.00	0.500	ug/L		05/06/24 10:00	05/07/24 18:49	1
Thallium	<0.570		1.00	0.570	ug/L		05/06/24 10:00	05/07/24 18:49	1
Vanadium	<1.10		5.00	1.10	ug/L		05/06/24 10:00	05/07/24 18:49	1
Zinc	<9.70		20.0	9.70	ug/L		05/06/24 10:00	05/07/24 18:49	1

Lab Sample ID: LCS 310-420670/2-A
Matrix: Water
Analysis Batch: 420954

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 420670

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	200	215.6		ug/L		108	80 - 120
Arsenic	200	208.4		ug/L		104	80 - 120
Barium	100	109.2		ug/L		109	80 - 120
Beryllium	100	97.94		ug/L		98	80 - 120
Cadmium	100	98.12		ug/L		98	80 - 120
Chromium	100	93.76		ug/L		94	80 - 120
Cobalt	100	110.6		ug/L		111	80 - 120
Copper	200	214.4		ug/L		107	80 - 120
Lead	200	216.7		ug/L		108	80 - 120
Nickel	200	211.3		ug/L		106	80 - 120
Selenium	400	395.5		ug/L		99	80 - 120
Silver	100	111.7		ug/L		112	80 - 120
Thallium	100	111.0		ug/L		111	80 - 120
Vanadium	100	93.42		ug/L		93	80 - 120
Zinc	200	191.4		ug/L		96	80 - 120

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: MB 310-420689/1
Matrix: Water
Analysis Batch: 420689

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<3.70		5.00	3.70	mg/L			05/04/24 09:40	1

Lab Sample ID: LCS 310-420689/2
Matrix: Water
Analysis Batch: 420689

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	94.00		mg/L		94	75 - 116

Method: I-3765-85 - Residue, Non-filterable (TSS) (Continued)

Lab Sample ID: MB 310-420693/1
Matrix: Water
Analysis Batch: 420693

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<3.70		5.00	3.70	mg/L			05/04/24 12:30	1

Lab Sample ID: LCS 310-420693/2
Matrix: Water
Analysis Batch: 420693

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	93.00		mg/L		93	75 - 116

GC/MS VOA

Analysis Batch: 420876

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280300-1	MW- 604B	Total/NA	Groundwater	8260D	
310-280300-2	MW-710B	Total/NA	Groundwater	8260D	
310-280300-3	MW-602B	Total/NA	Groundwater	8260D	
310-280300-4	MW-602B-FD	Total/NA	Groundwater	8260D	
310-280300-5	MW-501B	Total/NA	Groundwater	8260D	
310-280300-6	Trip Blank	Total/NA	Water	8260D	
MB 310-420876/5	Method Blank	Total/NA	Water	8260D	
LCS 310-420876/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-420876/7	Lab Control Sample	Total/NA	Water	8260D	
310-280300-1 MS	MW- 604B	Total/NA	Groundwater	8260D	
310-280300-1 MSD	MW- 604B	Total/NA	Groundwater	8260D	

Metals

Prep Batch: 420670

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280300-1	MW- 604B	Total/NA	Groundwater	3005A	
310-280300-2	MW-710B	Total/NA	Groundwater	3005A	
310-280300-3	MW-602B	Total/NA	Groundwater	3005A	
310-280300-4	MW-602B-FD	Total/NA	Groundwater	3005A	
310-280300-5	MW-501B	Total/NA	Groundwater	3005A	
MB 310-420670/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-420670/2-A	Lab Control Sample	Total/NA	Water	3005A	

Analysis Batch: 420954

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280300-1	MW- 604B	Total/NA	Groundwater	6020B	420670
310-280300-2	MW-710B	Total/NA	Groundwater	6020B	420670
310-280300-3	MW-602B	Total/NA	Groundwater	6020B	420670
310-280300-4	MW-602B-FD	Total/NA	Groundwater	6020B	420670
310-280300-5	MW-501B	Total/NA	Groundwater	6020B	420670
MB 310-420670/1-A	Method Blank	Total/NA	Water	6020B	420670
LCS 310-420670/2-A	Lab Control Sample	Total/NA	Water	6020B	420670

Analysis Batch: 421121

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280300-2	MW-710B	Total/NA	Groundwater	6020B	420670
310-280300-3	MW-602B	Total/NA	Groundwater	6020B	420670
310-280300-4	MW-602B-FD	Total/NA	Groundwater	6020B	420670
310-280300-5	MW-501B	Total/NA	Groundwater	6020B	420670

General Chemistry

Analysis Batch: 420689

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280300-1	MW- 604B	Total/NA	Groundwater	I-3765-85	
310-280300-2	MW-710B	Total/NA	Groundwater	I-3765-85	
310-280300-3	MW-602B	Total/NA	Groundwater	I-3765-85	
310-280300-4	MW-602B-FD	Total/NA	Groundwater	I-3765-85	
MB 310-420689/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-420689/2	Lab Control Sample	Total/NA	Water	I-3765-85	

QC Association Summary

Client: AECOM
Project/Site: Black Hawk Co. IDNR

Job ID: 310-280300-1

General Chemistry

Analysis Batch: 420693

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280300-5	MW-501B	Total/NA	Groundwater	I-3765-85	
MB 310-420693/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-420693/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Lab Chronicle

Client: AECOM
Job ID: 310-280300-1
Project/Site: Black Hawk Co. IDNR

Client Sample ID: MW- 604B
Lab Sample ID: 310-280300-1
Date Collected: 05/01/24 15:30
Matrix: Groundwater
Date Received: 05/02/24 13:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	420876	FE5V	EET CF	05/07/24 14:12
Total/NA	Prep	3005A			420670	KM3E	EET CF	05/06/24 10:00
Total/NA	Analysis	6020B		1	420954	NFT2	EET CF	05/07/24 19:03
Total/NA	Analysis	I-3765-85		1	420689	ENB7	EET CF	05/04/24 09:40

Client Sample ID: MW-710B
Lab Sample ID: 310-280300-2
Date Collected: 05/01/24 12:45
Matrix: Groundwater
Date Received: 05/02/24 13:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	420876	FE5V	EET CF	05/07/24 14:35
Total/NA	Prep	3005A			420670	KM3E	EET CF	05/06/24 10:00
Total/NA	Analysis	6020B		1	421121	NFT2	EET CF	05/08/24 15:13
Total/NA	Prep	3005A			420670	KM3E	EET CF	05/06/24 10:00
Total/NA	Analysis	6020B		1	420954	NFT2	EET CF	05/07/24 19:14
Total/NA	Analysis	I-3765-85		1	420689	ENB7	EET CF	05/04/24 09:40

Client Sample ID: MW-602B
Lab Sample ID: 310-280300-3
Date Collected: 05/01/24 11:30
Matrix: Groundwater
Date Received: 05/02/24 13:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	420876	FE5V	EET CF	05/07/24 14:57
Total/NA	Prep	3005A			420670	KM3E	EET CF	05/06/24 10:00
Total/NA	Analysis	6020B		1	421121	NFT2	EET CF	05/08/24 15:17
Total/NA	Prep	3005A			420670	KM3E	EET CF	05/06/24 10:00
Total/NA	Analysis	6020B		1	420954	NFT2	EET CF	05/07/24 19:17
Total/NA	Analysis	I-3765-85		1	420689	ENB7	EET CF	05/04/24 09:40

Client Sample ID: MW-602B-FD
Lab Sample ID: 310-280300-4
Date Collected: 05/01/24 11:30
Matrix: Groundwater
Date Received: 05/02/24 13:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	420876	FE5V	EET CF	05/07/24 15:20
Total/NA	Prep	3005A			420670	KM3E	EET CF	05/06/24 10:00
Total/NA	Analysis	6020B		1	421121	NFT2	EET CF	05/08/24 15:20
Total/NA	Prep	3005A			420670	KM3E	EET CF	05/06/24 10:00
Total/NA	Analysis	6020B		1	420954	NFT2	EET CF	05/07/24 19:19
Total/NA	Analysis	I-3765-85		1	420689	ENB7	EET CF	05/04/24 09:40

Lab Chronicle

Client: AECOM
Job ID: 310-280300-1
Project/Site: Black Hawk Co. IDNR

Client Sample ID: MW-501B
Lab Sample ID: 310-280300-5

Date Collected: 05/01/24 13:30
Matrix: Groundwater
Date Received: 05/02/24 13:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	420876	FE5V	EET CF	05/07/24 15:42
Total/NA	Prep	3005A			420670	KM3E	EET CF	05/06/24 10:00
Total/NA	Analysis	6020B		1	421121	NFT2	EET CF	05/08/24 15:24
Total/NA	Prep	3005A			420670	KM3E	EET CF	05/06/24 10:00
Total/NA	Analysis	6020B		1	420954	NFT2	EET CF	05/07/24 19:21
Total/NA	Analysis	I-3765-85		1	420693	ENB7	EET CF	05/04/24 12:30

Client Sample ID: Trip Blank
Lab Sample ID: 310-280300-6

Date Collected: 05/01/24 00:00
Matrix: Water
Date Received: 05/02/24 13:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	420876	FE5V	EET CF	05/07/24 13:49

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Accreditation/Certification Summary

Client: AECOM
Job ID: 310-280300-1
Project/Site: Black Hawk Co. IDNR

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8260D		Groundwater	m,p-Xylene
8260D		Groundwater	o-Xylene
8260D		Water	m,p-Xylene
8260D		Water	o-Xylene

Method Summary

Client: AECOM
Job ID: 310-280300-1
Project/Site: Black Hawk Co. IDNR

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
5030B	Purge and Trap	SW846	EET CF

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

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310-280300 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: AECOM			
City/State: CITY: Louisville	STATE: KY	Project: 91707	
Receipt Information			
Date/Time Received. DATE: 5/8/24	TIME: 1310	Received By: [illegible]	
Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ Lab Field Services ☑ Client Drop-off ☐ Other:_____			
Condition of Cooler/Containers			
Sample(s) received in Cooler? ☑ Yes ☐ No	*If yes:* Cooler ID:		
Multiple Coolers? ☐ Yes ☑ No	*If yes:* Cooler # _____ of _____		
Cooler Custody Seals Present? ☐ Yes ☑ No	*If yes:* Cooler custody seals intact? ☐ Yes ☐ No		
Sample Custody Seals Present? ☐ Yes ☑ No	*If yes:* Sample custody seals intact? ☐ Yes ☐ No		
Trip Blank Present? ☒ Yes ☐ No	*If yes:* Which VOA samples are in cooler? ↓		
Temperature Record			
Coolant: ☑ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE			
Thermometer ID: T	Correction Factor (°C): 0.0		
• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C): 1.8	Corrected Temp (°C): 1.8		
• **Sample Container Temperature**			
Container(s) used:	CONTAINER 1	CONTAINER 2	
Uncorrected Temp (°C):			
Corrected Temp (°C):			
Exceptions Noted			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No			
a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No			
2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No			
NOTE If yes, contact PM before proceeding If no, proceed with login			
Additional Comments			

Eurofins Cedar Falls
3019 Venture Way

Cedar Falls, IA 50613
phone 319 277.2401 fax 319.277.2425

Chain of Custody Record

eurofins Environment Testing America

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other IDNR

Eurofins Environment Testing America

Client Contact	**Project Manager: Chris Oelkers**	COC No
AECOM	Email Christopher Oelkers@aecom.com	1 of 3 COCs
501 Sycamore Street, Suite 222	**Tel/Fax:319-296-6878**	TALS Project #
Waterloo, IA 50703	**Site Contact:**	Sampler
(319) 232-6531 Phone	**Lab Contact:**	**For Lab Use Only:**
(xxx) xxx-xxxx FAX	**Date:** 5-2-24	Walk-in Client:
Project Name Black Hawk Co IDNR	**Carrier:**	Lab Sampling
Site Black Hawk County Landfill	**Analysis Turnaround Time**	Job / SDG No
P O #	☑ CALENDAR DAYS ☐ WORKING DAYS	
	TAT if different from Below ____	
	☑ 2 weeks	
	☐ 1 week	
	☐ 2 days	
	☐ 1 day	

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	Appendix I, TSS	Appendix II, TSS	2,4-D	4,4'-DDD	beta-BHC	delta BHC	Endosulfan I	Endosulfan sulfate	Endrin aldehyde	Silvex	Sulfide	Sample Specific Notes
MW-603B			G	GW		N		X											
MW-604B	5-1-24	1530	G	GW	5	N		X											Turbidity- 6.52 NTU
MW-709B			G	GW		N		X											
MW-710B	5-1-24	1245	G	GW	5	N		X											Turbidity- 4.49 NTU
MW-711B			G	GW		N		X											
MW-712B			G	GW		N		X											
GUE-1			G	GW		N		X											
GUE-2			G	GW		N		X											
GUW1-1			G	GW		N		X											
GUW2-1			G	GW		N		X											
Equipment Blank-2			G	GW		N		X											
GUW2-1-FD			G	GW		N		X											

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for ____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No		Cooler Temp (°C) Obs'd ____ Corr'd ____		Therm ID No. ____
Relinquished by: Ben Porter	Company: Aecom	Date/Time: 5-2-24	Received by:	Company:	Date/Time: 5 2 24 1310
Relinquished by:	Company:	Date/Time	Received by:	Company:	Date/Time
Relinquished by:	Company:	Date/Time	Received in Laboratory by:	Company:	Date/Time

5/9/2024

Eurofins Cedar Falls
3019 Venture Way

Cedar Falls, IA 50613
phone 319 277.2401 fax 319.277 2425

Chain of Custody Record

eurofins Environment Testing America

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other IDNR

Eurofins Environment Testing America

Client Contact	**Project Manager: Chris Oelkers**	COC No
AECOM	Email Christopher Oelkers@aecom.com	**Site Contact:** / **Date:** 5-2-24	2 of 3 COCs
501 Sycamore Street, Suite 222	**Tel/Fax:319-296-6878**	**Lab Contact:** / **Carrier:**	TALS Project #
Waterloo, IA 50703	**Analysis Turnaround Time** ☑ CALENDAR DAYS ☐ WORKING DAYS		Sampler
(319) 232-6531 Phone	TAT if different from Below ☐ ☑ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day		**For Lab Use Only:** Walk-in Client: / Lab Sampling
(xxx) xxx-xxxx FAX			
Project Name Black Hawk Co IDNR			Job / SDG No
Site Black Hawk County Landfill			
P O #			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Appendix I, TSS	Appendix II, TSS	2,4-D	4,4'-DDD	beta-BHC	delta BHC	Endosulfan I	Endosulfan sulfate	Endrin aldehyde	Silvex	Sulfide	Sample Specific Notes.
OW-401B			G	GW		N		X		X		X	X		X	X	X	X	
OW-402B			G	GW		N		X											
MW-409B			G	GW		N		X											
OW-410B			G	GW		N		X											
OW-411B			G	GW		N		X											
OW-412B			G	GW		N		X											
OW-413B			G	GW		N		X											
OW-414B			G	GW		N		X											
MW-501B			G	GW		N		X											
MW-602B	5-1-24	1130	G	GW	5	N		X											Turbidity - 1.09 NTU
MW-602B-FD	5-1-24	1130	G	GW	5	N		X											

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No	Cooler Temp (°C) Obs'd._____ Corr'd _____	Therm ID No ._____
Relinquished by: Ben Porter	Company: Aecom	Date/Time: 5-2-24	Received by:	Company:	Date/Time: 5-2-24 1710
Relinquished by:	Company:	Date/Time	Received by:	Company:	Date/Time
Relinquished by:	Company:	Date/Time	Received in Laboratory by:	Company:	Date/Time

5/9/2024

Eurofins Cedar Falls
3019 Venture Way

Cedar Falls, IA 50613
phone 319.277.2401 fax 319.277 2425

Chain of Custody Record

eurofins Environment Testing America

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other IDNR

Eurofins Environment Testing America

Client Contact	**Project Manager: Chris Oelkers**	COC No
AECOM	Email Christopher Oelkers@aecom.com	**Site Contact:** / **Date: 5-2-24**	3 of 3 COCs
501 Sycamore Street, Suite 222	**Tel/Fax:319-296-6878**	**Lab Contact:** / **Carrier:**	TALS Project #
Waterloo, IA 50703	**Analysis Turnaround Time**		Sampler
(319) 232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS		**For Lab Use Only:**
(xxx) xxx-xxxx FAX	TAT if different from Below ____		Walk-in Client
Project Name Black Hawk Co IDNR	☑ 2 weeks		Lab Sampling
Site Black Hawk County Landfill	☐ 1 week		Job / SDG No
P O #	☐ 2 days		
	☐ 1 day		

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Appendix I, TSS	Appendix II, TSS	2,4-D	4,4'-DDD	beta-BHC	delta BHC	Endosulfan I	Endosulfan sulfate	Endrin aldehyde	Silvex	Sulfide	Sample Specific Notes
OW-401B			G	GW		N		X		X		X	X		X	X	X	X	
OW-402B			G	GW		N		X											
MW-409B			G	GW		N		X											
OW-410B			G	GW		N		X											
OW-411B			G	GW		N		X											
OW-412B			G	GW		N		X											
OW-413B			G	GW		N		X											
OW-414B			G	GW		N		X											
MW-501B	5-1-24	1330	G	GW	5	N		X											Turbidity - 2.96 NTU
MW-602B			G	GW		N		X											
MW-602B-FD			G	GW		N		X											

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

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Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for ____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No		Cooler Temp (°C) Obs'd. ____ Corr'd ____		Therm ID No. ____
Relinquished by: Ben Porter	Company: Aecom	Date/Time: 5-2-24	Received by:	Company:	Date/Time: 5/2/24 1110
Relinquished by:	Company:	Date/Time	Received by:	Company:	Date/Time
Relinquished by:	Company:	Date/Time	Received in Laboratory by:	Company:	Date/Time

5/9/2024

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-280300-1

Login Number: 280300

List Number: 1

Creator: Bennett, Samantha

List Source: Eurofins Cedar Falls

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Chris Oelkers
AECOM
501 Sycamore Street
Suite #222
Waterloo, Iowa 50703

Generated 5/13/2024 10:23:37 PM

JOB DESCRIPTION

Black Hawk County Landfill (IDNR)
Spring 2024

JOB NUMBER

310-280395-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

my EOL

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



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Authorized for release by
Zach Bindert, Client Service Manager
Zach.Bindert@et.eurofinsus.com
(319)277-2401

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Job ID: 310-280395-1 — Eurofins Cedar Falls

Job Narrative
310-280395-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 5/3/2024 10:15 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 4.3°C.

GC/MS VOA
Method 8260D: The continuing calibration verification (CCV) associated with batch 310-421105 recovered above the upper control limit for 2-Hexanone (34.0%D) and 4-Methyl-2-pentanone (35.5%D). The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated sample is impacted: (CCV 310-421105/3).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Field Service / Mobile Lab
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Sample Summary

Client: AECOM
Job ID: 310-280395-1
Project/Site: Black Hawk County Landfill (IDNR)

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-280395-1	GUW3-1	Water	05/03/24 08:30	05/03/24 10:15
310-280395-2	GUX-1	Water	05/03/24 07:45	05/03/24 10:15
310-280395-3	Trip Blank	Water	05/03/24 06:00	05/03/24 10:15

Detection Summary

Client: AECOM
Job ID: 310-280395-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: GUW3-1
Lab Sample ID: 310-280395-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	1.84	J	2.00	0.530	ug/L	1		6020B	Total/NA
Barium	27.4		2.00	0.660	ug/L	1		6020B	Total/NA
Cobalt	2.21		0.500	0.170	ug/L	1		6020B	Total/NA
Copper	5.55		5.00	1.80	ug/L	1		6020B	Total/NA
Lead	0.486	J	0.500	0.260	ug/L	1		6020B	Total/NA
Nickel	6.61		5.00	2.10	ug/L	1		6020B	Total/NA
Thallium	1.15		1.00	0.570	ug/L	1		6020B	Total/NA
Zinc	11.0	J	20.0	9.70	ug/L	1		6020B	Total/NA
Total Suspended Solids	18.7		5.00	3.70	mg/L	1		I-3765-85	Total/NA
Field Turbidity	9.27				NTU	1		Field Sampling	Total/NA

Client Sample ID: GUX-1
Lab Sample ID: 310-280395-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	848		2.00	0.660	ug/L	1		6020B	Total/NA
Copper	4.13	J	5.00	1.80	ug/L	1		6020B	Total/NA
Total Suspended Solids	27.0		5.00	3.70	mg/L	1		I-3765-85	Total/NA
Field Turbidity	11.42				NTU	1		Field Sampling	Total/NA

Client Sample ID: Trip Blank
Lab Sample ID: 310-280395-3

No Detections.

This Detection Summary does not include radiochemical test results.

Client: AECOM
Job ID: 310-280395-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: GUW3-1
Lab Sample ID: 310-280395-1
Date Collected: 05/03/24 08:30
Matrix: Water
Date Received: 05/03/24 10:15

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/10/24 04:32	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/10/24 04:32	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/10/24 04:32	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/10/24 04:32	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/10/24 04:32	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/10/24 04:32	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/10/24 04:32	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/10/24 04:32	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/10/24 04:32	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/10/24 04:32	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/10/24 04:32	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/10/24 04:32	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/10/24 04:32	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/10/24 04:32	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/10/24 04:32	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/10/24 04:32	1
Acetone	<3.10		10.0	3.10	ug/L			05/10/24 04:32	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/10/24 04:32	1
Benzene	<0.220		0.500	0.220	ug/L			05/10/24 04:32	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/10/24 04:32	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/10/24 04:32	1
Bromoform	<0.780		5.00	0.780	ug/L			05/10/24 04:32	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/10/24 04:32	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/10/24 04:32	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/10/24 04:32	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/10/24 04:32	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/10/24 04:32	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/10/24 04:32	1
Chloroform	<1.30		3.00	1.30	ug/L			05/10/24 04:32	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/10/24 04:32	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/10/24 04:32	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/10/24 04:32	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/10/24 04:32	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/10/24 04:32	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/10/24 04:32	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/10/24 04:32	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/10/24 04:32	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/10/24 04:32	1
Styrene	<0.370		1.00	0.370	ug/L			05/10/24 04:32	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/10/24 04:32	1
Toluene	<0.430		1.00	0.430	ug/L			05/10/24 04:32	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/10/24 04:32	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/10/24 04:32	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/10/24 04:32	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/10/24 04:32	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/10/24 04:32	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/10/24 04:32	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/10/24 04:32	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/10/24 04:32	1

Client: AECOM
Job ID: 310-280395-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: GUW3-1
Lab Sample ID: 310-280395-1
Date Collected: 05/03/24 08:30
Matrix: Water
Date Received: 05/03/24 10:15

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*98*		*73 - 130*		*05/10/24 04:32*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*05/10/24 04:32*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*05/10/24 04:32*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		05/06/24 10:00	05/09/24 14:57	1
Arsenic	**1.84**	**J**	2.00	0.530	ug/L		05/06/24 10:00	05/09/24 14:57	1
Barium	**27.4**		2.00	0.660	ug/L		05/06/24 10:00	05/08/24 20:35	1
Beryllium	<0.330		1.00	0.330	ug/L		05/06/24 10:00	05/08/24 20:35	1
Cadmium	<0.100		0.200	0.100	ug/L		05/06/24 10:00	05/09/24 14:57	1
Chromium	<1.20		5.00	1.20	ug/L		05/06/24 10:00	05/09/24 14:57	1
Cobalt	**2.21**		0.500	0.170	ug/L		05/06/24 10:00	05/08/24 20:35	1
Copper	**5.55**		5.00	1.80	ug/L		05/06/24 10:00	05/08/24 20:35	1
Lead	**0.486**	**J**	0.500	0.260	ug/L		05/06/24 10:00	05/08/24 20:35	1
Nickel	**6.61**		5.00	2.10	ug/L		05/06/24 10:00	05/08/24 20:35	1
Selenium	<1.40		5.00	1.40	ug/L		05/06/24 10:00	05/08/24 20:35	1
Silver	<0.500		1.00	0.500	ug/L		05/06/24 10:00	05/09/24 14:57	1
Thallium	**1.15**		1.00	0.570	ug/L		05/06/24 10:00	05/08/24 20:35	1
Vanadium	<1.10		5.00	1.10	ug/L		05/06/24 10:00	05/08/24 20:35	1
Zinc	**11.0**	**J**	20.0	9.70	ug/L		05/06/24 10:00	05/08/24 20:35	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**18.7**		5.00	3.70	mg/L			05/07/24 18:56	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**9.27**				NTU			05/03/24 08:30	1

Client: AECOM
Job ID: 310-280395-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: GUX-1
Lab Sample ID: 310-280395-2
Date Collected: 05/03/24 07:45
Matrix: Water
Date Received: 05/03/24 10:15

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/10/24 04:54	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/10/24 04:54	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/10/24 04:54	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/10/24 04:54	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/10/24 04:54	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/10/24 04:54	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/10/24 04:54	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/10/24 04:54	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/10/24 04:54	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/10/24 04:54	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/10/24 04:54	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/10/24 04:54	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/10/24 04:54	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/10/24 04:54	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/10/24 04:54	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/10/24 04:54	1
Acetone	<3.10		10.0	3.10	ug/L			05/10/24 04:54	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/10/24 04:54	1
Benzene	<0.220		0.500	0.220	ug/L			05/10/24 04:54	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/10/24 04:54	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/10/24 04:54	1
Bromoform	<0.780		5.00	0.780	ug/L			05/10/24 04:54	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/10/24 04:54	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/10/24 04:54	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/10/24 04:54	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/10/24 04:54	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/10/24 04:54	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/10/24 04:54	1
Chloroform	<1.30		3.00	1.30	ug/L			05/10/24 04:54	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/10/24 04:54	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/10/24 04:54	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/10/24 04:54	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/10/24 04:54	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/10/24 04:54	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/10/24 04:54	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/10/24 04:54	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/10/24 04:54	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/10/24 04:54	1
Styrene	<0.370		1.00	0.370	ug/L			05/10/24 04:54	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/10/24 04:54	1
Toluene	<0.430		1.00	0.430	ug/L			05/10/24 04:54	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/10/24 04:54	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/10/24 04:54	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/10/24 04:54	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/10/24 04:54	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/10/24 04:54	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/10/24 04:54	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/10/24 04:54	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/10/24 04:54	1

Client: AECOM
Job ID: 310-280395-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: GUX-1
Lab Sample ID: 310-280395-2
Date Collected: 05/03/24 07:45
Matrix: Water
Date Received: 05/03/24 10:15

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*100*		*73 - 130*		*05/10/24 04:54*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*05/10/24 04:54*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*05/10/24 04:54*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		05/06/24 10:00	05/09/24 14:59	1
Arsenic	<0.530		2.00	0.530	ug/L		05/06/24 10:00	05/09/24 14:59	1
Barium	**848**		2.00	0.660	ug/L		05/06/24 10:00	05/08/24 20:38	1
Beryllium	<0.330		1.00	0.330	ug/L		05/06/24 10:00	05/08/24 20:38	1
Cadmium	<0.100		0.200	0.100	ug/L		05/06/24 10:00	05/09/24 14:59	1
Chromium	<1.20		5.00	1.20	ug/L		05/06/24 10:00	05/09/24 14:59	1
Cobalt	<0.170		0.500	0.170	ug/L		05/06/24 10:00	05/08/24 20:38	1
Copper	**4.13**	**J**	5.00	1.80	ug/L		05/06/24 10:00	05/08/24 20:38	1
Lead	<0.260		0.500	0.260	ug/L		05/06/24 10:00	05/08/24 20:38	1
Nickel	<2.10		5.00	2.10	ug/L		05/06/24 10:00	05/08/24 20:38	1
Selenium	<1.40		5.00	1.40	ug/L		05/06/24 10:00	05/08/24 20:38	1
Silver	<0.500		1.00	0.500	ug/L		05/06/24 10:00	05/09/24 14:59	1
Thallium	<0.570		1.00	0.570	ug/L		05/06/24 10:00	05/08/24 20:38	1
Vanadium	<1.10		5.00	1.10	ug/L		05/06/24 10:00	05/08/24 20:38	1
Zinc	<9.70		20.0	9.70	ug/L		05/06/24 10:00	05/08/24 20:38	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**27.0**		5.00	3.70	mg/L			05/07/24 18:56	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**11.42**				NTU			05/03/24 07:45	1

Client: AECOM
Job ID: 310-280395-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Trip Blank
Lab Sample ID: 310-280395-3
Date Collected: 05/03/24 06:00
Matrix: Water
Date Received: 05/03/24 10:15

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/10/24 03:05	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/10/24 03:05	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/10/24 03:05	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/10/24 03:05	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/10/24 03:05	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/10/24 03:05	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/10/24 03:05	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/10/24 03:05	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/10/24 03:05	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/10/24 03:05	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/10/24 03:05	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/10/24 03:05	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/10/24 03:05	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/10/24 03:05	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/10/24 03:05	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/10/24 03:05	1
Acetone	<3.10		10.0	3.10	ug/L			05/10/24 03:05	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/10/24 03:05	1
Benzene	<0.220		0.500	0.220	ug/L			05/10/24 03:05	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/10/24 03:05	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/10/24 03:05	1
Bromoform	<0.780		5.00	0.780	ug/L			05/10/24 03:05	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/10/24 03:05	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/10/24 03:05	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/10/24 03:05	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/10/24 03:05	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/10/24 03:05	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/10/24 03:05	1
Chloroform	<1.30		3.00	1.30	ug/L			05/10/24 03:05	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/10/24 03:05	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/10/24 03:05	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/10/24 03:05	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/10/24 03:05	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/10/24 03:05	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/10/24 03:05	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/10/24 03:05	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/10/24 03:05	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/10/24 03:05	1
Styrene	<0.370		1.00	0.370	ug/L			05/10/24 03:05	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/10/24 03:05	1
Toluene	<0.430		1.00	0.430	ug/L			05/10/24 03:05	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/10/24 03:05	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/10/24 03:05	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/10/24 03:05	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/10/24 03:05	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/10/24 03:05	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/10/24 03:05	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/10/24 03:05	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/10/24 03:05	1

Client: AECOM
Job ID: 310-280395-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Trip Blank
Lab Sample ID: 310-280395-3
Date Collected: 05/03/24 06:00
Matrix: Water
Date Received: 05/03/24 10:15

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	97		73 - 130		05/10/24 03:05	1
Toluene-d8 (Surr)	102		80 - 120		05/10/24 03:05	1
4-Bromofluorobenzene (Surr)	104		80 - 120		05/10/24 03:05	1

Definitions/Glossary

Client: AECOM
Job ID: 310-280395-1
Project/Site: Black Hawk County Landfill (IDNR)

Qualifiers

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Surrogate Summary

Client: AECOM
Job ID: 310-280395-1
Project/Site: Black Hawk County Landfill (IDNR)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)								
		DBFM	TOL	BFB						
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)						
310-280395-1	GUW3-1	98	102	101						
310-280395-1 MS	GUW3-1	94	106	99						
310-280395-1 MSD	GUW3-1	94	103	96						
310-280395-2	GUX-1	100	98	101						
310-280395-3	Trip Blank	97	102	104						
LCS 310-421105/6	Lab Control Sample	96	104	98						
LCS 310-421105/7	Lab Control Sample	94	102	98						
MB 310-421105/5	Method Blank	97	101	101						

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 310-421105/5
Matrix: Water
Analysis Batch: 421105

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/10/24 02:00	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/10/24 02:00	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/10/24 02:00	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/10/24 02:00	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/10/24 02:00	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/10/24 02:00	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/10/24 02:00	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/10/24 02:00	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/10/24 02:00	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/10/24 02:00	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/10/24 02:00	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/10/24 02:00	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/10/24 02:00	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/10/24 02:00	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/10/24 02:00	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/10/24 02:00	1
Acetone	<3.10		10.0	3.10	ug/L			05/10/24 02:00	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/10/24 02:00	1
Benzene	<0.220		0.500	0.220	ug/L			05/10/24 02:00	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/10/24 02:00	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/10/24 02:00	1
Bromoform	<0.780		5.00	0.780	ug/L			05/10/24 02:00	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/10/24 02:00	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/10/24 02:00	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/10/24 02:00	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/10/24 02:00	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/10/24 02:00	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/10/24 02:00	1
Chloroform	<1.30		3.00	1.30	ug/L			05/10/24 02:00	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/10/24 02:00	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/10/24 02:00	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/10/24 02:00	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/10/24 02:00	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/10/24 02:00	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/10/24 02:00	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/10/24 02:00	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/10/24 02:00	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/10/24 02:00	1
Styrene	<0.370		1.00	0.370	ug/L			05/10/24 02:00	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/10/24 02:00	1
Toluene	<0.430		1.00	0.430	ug/L			05/10/24 02:00	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/10/24 02:00	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/10/24 02:00	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/10/24 02:00	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/10/24 02:00	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/10/24 02:00	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/10/24 02:00	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/10/24 02:00	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-421105/5
Matrix: Water
Analysis Batch: 421105

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/10/24 02:00	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*97*		*73 - 130*		*05/10/24 02:00*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*05/10/24 02:00*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*05/10/24 02:00*	*1*

Lab Sample ID: LCS 310-421105/6
Matrix: Water
Analysis Batch: 421105

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	20.0	17.82		ug/L		89	71 - 120
1,1,1-Trichloroethane	20.0	19.22		ug/L		96	73 - 129
1,1,2,2-Tetrachloroethane	20.0	19.55		ug/L		98	68 - 124
1,1,2-Trichloroethane	20.0	20.29		ug/L		101	73 - 123
1,1-Dichloroethane	20.0	21.39		ug/L		107	70 - 127
1,1-Dichloroethene	20.0	20.93		ug/L		105	63 - 132
1,2,3-Trichloropropane	20.0	18.84		ug/L		94	65 - 127
1,2-Dibromo-3-Chloropropane	20.0	23.44		ug/L		117	50 - 150
1,2-Dibromoethane (EDB)	20.0	19.21		ug/L		96	75 - 125
1,2-Dichlorobenzene	20.0	19.47		ug/L		97	74 - 120
1,2-Dichloroethane	20.0	21.06		ug/L		105	71 - 125
1,2-Dichloropropane	20.0	21.46		ug/L		107	73 - 124
1,4-Dichlorobenzene	20.0	20.06		ug/L		100	72 - 120
2-Butanone (MEK)	40.0	47.71		ug/L		119	50 - 150
2-Hexanone	40.0	48.06		ug/L		120	60 - 140
4-Methyl-2-pentanone (MIBK)	40.0	48.71		ug/L		122	60 - 139
Acetone	40.0	55.87		ug/L		140	50 - 150
Acrylonitrile	200	235.1		ug/L		118	50 - 150
Benzene	20.0	19.47		ug/L		97	72 - 124
Bromochloromethane	20.0	17.53		ug/L		88	73 - 130
Bromodichloromethane	20.0	19.21		ug/L		96	74 - 122
Bromoform	20.0	15.96		ug/L		80	61 - 122
Carbon disulfide	20.0	22.16		ug/L		111	59 - 135
Carbon tetrachloride	20.0	17.98		ug/L		90	67 - 132
Chlorobenzene	20.0	18.29		ug/L		91	76 - 120
Chlorodibromomethane	20.0	17.52		ug/L		88	71 - 121
Chloroform	20.0	20.53		ug/L		103	72 - 125
cis-1,2-Dichloroethene	20.0	19.28		ug/L		96	74 - 123
cis-1,3-Dichloropropene	20.0	19.80		ug/L		99	71 - 125
Dibromomethane	20.0	19.76		ug/L		99	74 - 125
Ethylbenzene	20.0	19.77		ug/L		99	74 - 122
Iodomethane	20.0	15.48		ug/L		77	10 - 150
Methylene Chloride	20.0	22.11		ug/L		111	50 - 150
Styrene	20.0	18.93		ug/L		95	74 - 121
Tetrachloroethene	20.0	16.81		ug/L		84	71 - 130
Toluene	20.0	19.39		ug/L		97	74 - 123

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-421105/6
Matrix: Water
Analysis Batch: 421105

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
trans-1,2-Dichloroethene	20.0	19.08		ug/L		95	70 - 126
trans-1,3-Dichloropropene	20.0	20.63		ug/L		103	69 - 123
trans-1,4-Dichloro-2-butene	20.0	20.47		ug/L		102	50 - 150
Trichloroethene	20.0	19.45		ug/L		97	72 - 126
Vinyl acetate	40.0	37.40		ug/L		93	50 - 150
Xylenes, Total	40.0	37.62		ug/L		94	73 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*96*		*73 - 130*
Toluene-d8 (Surr)	*104*		*80 - 120*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*

Lab Sample ID: LCS 310-421105/7
Matrix: Water
Analysis Batch: 421105

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	12.98		ug/L		65	23 - 150
Chloroethane	20.0	17.26		ug/L		86	54 - 136
Chloromethane	20.0	16.51		ug/L		83	38 - 150
Trichlorofluoromethane	20.0	17.90		ug/L		89	54 - 149
Vinyl chloride	20.0	17.65		ug/L		88	56 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*94*		*73 - 130*
Toluene-d8 (Surr)	*102*		*80 - 120*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*

Lab Sample ID: 310-280395-1 MS
Matrix: Water
Analysis Batch: 421105

Client Sample ID: GUW3-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	<0.380		25.0	19.33		ug/L		77	55 - 130
1,1,1-Trichloroethane	<0.190		25.0	19.58		ug/L		78	52 - 130
1,1,2,2-Tetrachloroethane	<0.470		25.0	23.11		ug/L		92	54 - 130
1,1,2-Trichloroethane	<0.450		25.0	21.56		ug/L		86	58 - 130
1,1-Dichloroethane	<0.220		25.0	22.66		ug/L		91	49 - 130
1,1-Dichloroethene	<0.560		25.0	21.51		ug/L		86	37 - 132
1,2,3-Trichloropropane	<0.590		25.0	22.02		ug/L		88	49 - 130
1,2-Dibromo-3-Chloropropane	<1.20		25.0	28.51		ug/L		114	38 - 150
1,2-Dibromoethane (EDB)	<0.340		25.0	20.30		ug/L		81	60 - 130
1,2-Dichlorobenzene	<0.370		25.0	22.49		ug/L		90	59 - 130
1,2-Dichloroethane	<0.390		25.0	22.91		ug/L		92	51 - 130
1,2-Dichloropropane	<0.270		25.0	22.83		ug/L		91	57 - 130
1,4-Dichlorobenzene	<0.230		25.0	22.99		ug/L		92	57 - 130
2-Butanone (MEK)	<2.10		50.0	55.25		ug/L		110	38 - 150
2-Hexanone	<2.00		50.0	57.56		ug/L		115	46 - 140

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 310-280395-1 MS
Matrix: Water
Analysis Batch: 421105

Client Sample ID: GUW3-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
4-Methyl-2-pentanone (MIBK)	<2.10		50.0	55.60		ug/L		111	47 - 139
Acetone	<3.10		50.0	61.53		ug/L		123	31 - 150
Acrylonitrile	<2.20		250	249.1		ug/L		100	40 - 150
Benzene	<0.220		25.0	20.45		ug/L		82	46 - 130
Bromochloromethane	<0.540		25.0	18.52		ug/L		74	57 - 130
Bromodichloromethane	<0.390		25.0	20.16		ug/L		81	57 - 130
Bromoform	<0.780		25.0	17.92		ug/L		72	44 - 130
Carbon disulfide	<0.450		25.0	24.41		ug/L		98	38 - 135
Carbon tetrachloride	<0.650		25.0	18.43		ug/L		74	45 - 132
Chlorobenzene	<0.400		25.0	20.05		ug/L		80	59 - 130
Chlorodibromomethane	<0.750		25.0	18.39		ug/L		74	54 - 130
Chloroform	<1.30		25.0	20.89		ug/L		84	51 - 130
cis-1,2-Dichloroethene	<0.210		25.0	20.82		ug/L		83	45 - 130
cis-1,3-Dichloropropene	<0.250		25.0	20.60		ug/L		82	53 - 130
Dibromomethane	<0.330		25.0	21.24		ug/L		85	59 - 130
Ethylbenzene	<0.310		25.0	21.00		ug/L		84	45 - 130
Iodomethane	<7.00		25.0	17.98		ug/L		72	10 - 150
Methylene Chloride	<1.70		25.0	23.25		ug/L		93	37 - 150
Styrene	<0.370		25.0	20.95		ug/L		84	47 - 130
Tetrachloroethene	<0.480		25.0	17.37		ug/L		69	47 - 130
Toluene	<0.430		25.0	20.06		ug/L		80	51 - 130
trans-1,2-Dichloroethene	<0.270		25.0	20.26		ug/L		81	48 - 130
trans-1,3-Dichloropropene	<0.560		25.0	21.87		ug/L		87	50 - 130
trans-1,4-Dichloro-2-butene	<1.10		25.0	21.37		ug/L		85	26 - 150
Trichloroethene	<0.430		25.0	20.13		ug/L		81	51 - 130
Vinyl acetate	<2.50		50.0	37.43		ug/L		75	29 - 150
Xylenes, Total	<0.400		50.0	40.73		ug/L		81	43 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*94*		*73 - 130*
Toluene-d8 (Surr)	*106*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*

Lab Sample ID: 310-280395-1 MSD
Matrix: Water
Analysis Batch: 421105

Client Sample ID: GUW3-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	<0.380		25.0	18.85		ug/L		75	55 - 130	3	20
1,1,1-Trichloroethane	<0.190		25.0	19.25		ug/L		77	52 - 130	2	20
1,1,2,2-Tetrachloroethane	<0.470		25.0	23.29		ug/L		93	54 - 130	1	20
1,1,2-Trichloroethane	<0.450		25.0	21.35		ug/L		85	58 - 130	1	20
1,1-Dichloroethane	<0.220		25.0	22.13		ug/L		89	49 - 130	2	20
1,1-Dichloroethene	<0.560		25.0	20.84		ug/L		83	37 - 132	3	26
1,2,3-Trichloropropane	<0.590		25.0	21.91		ug/L		88	49 - 130	0	26
1,2-Dibromo-3-Chloropropane	<1.20		25.0	30.77		ug/L		123	38 - 150	8	20
1,2-Dibromoethane (EDB)	<0.340		25.0	20.34		ug/L		81	60 - 130	0	20
1,2-Dichlorobenzene	<0.370		25.0	22.93		ug/L		92	59 - 130	2	20

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 310-280395-1 MSD
Matrix: Water
Analysis Batch: 421105

Client Sample ID: GUW3-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2-Dichloroethane	<0.390		25.0	22.59		ug/L		90	51 - 130	1	20
1,2-Dichloropropane	<0.270		25.0	22.77		ug/L		91	57 - 130	0	20
1,4-Dichlorobenzene	<0.230		25.0	22.67		ug/L		91	57 - 130	1	20
2-Butanone (MEK)	<2.10		50.0	53.54		ug/L		107	38 - 150	3	20
2-Hexanone	<2.00		50.0	59.06		ug/L		118	46 - 140	3	20
4-Methyl-2-pentanone (MIBK)	<2.10		50.0	56.64		ug/L		113	47 - 139	2	20
Acetone	<3.10		50.0	63.53		ug/L		127	31 - 150	3	29
Acrylonitrile	<2.20		250	253.0		ug/L		101	40 - 150	2	20
Benzene	<0.220		25.0	19.99		ug/L		80	46 - 130	2	20
Bromochloromethane	<0.540		25.0	18.69		ug/L		75	57 - 130	1	20
Bromodichloromethane	<0.390		25.0	20.05		ug/L		80	57 - 130	1	20
Bromoform	<0.780		25.0	17.88		ug/L		72	44 - 130	0	20
Carbon disulfide	<0.450		25.0	22.76		ug/L		91	38 - 135	7	30
Carbon tetrachloride	<0.650		25.0	17.99		ug/L		72	45 - 132	2	20
Chlorobenzene	<0.400		25.0	19.35		ug/L		77	59 - 130	4	20
Chlorodibromomethane	<0.750		25.0	18.77		ug/L		75	54 - 130	2	20
Chloroform	<1.30		25.0	20.90		ug/L		84	51 - 130	0	20
cis-1,2-Dichloroethene	<0.210		25.0	20.28		ug/L		81	45 - 130	3	20
cis-1,3-Dichloropropene	<0.250		25.0	20.87		ug/L		83	53 - 130	1	20
Dibromomethane	<0.330		25.0	20.56		ug/L		82	59 - 130	3	20
Ethylbenzene	<0.310		25.0	20.76		ug/L		83	45 - 130	1	20
Iodomethane	<7.00		25.0	19.94		ug/L		80	10 - 150	10	35
Methylene Chloride	<1.70		25.0	23.29		ug/L		93	37 - 150	0	24
Styrene	<0.370		25.0	20.62		ug/L		82	47 - 130	2	20
Tetrachloroethene	<0.480		25.0	17.30		ug/L		69	47 - 130	0	20
Toluene	<0.430		25.0	20.16		ug/L		81	51 - 130	0	20
trans-1,2-Dichloroethene	<0.270		25.0	19.65		ug/L		79	48 - 130	3	22
trans-1,3-Dichloropropene	<0.560		25.0	22.25		ug/L		89	50 - 130	2	20
trans-1,4-Dichloro-2-butene	<1.10		25.0	21.65		ug/L		87	26 - 150	1	23
Trichloroethene	<0.430		25.0	19.32		ug/L		77	51 - 130	4	20
Vinyl acetate	<2.50		50.0	38.67		ug/L		77	29 - 150	3	23
Xylenes, Total	<0.400		50.0	39.85		ug/L		80	43 - 130	2	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*94*		*73 - 130*
Toluene-d8 (Surr)	*103*		*80 - 120*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-420672/1-A
Matrix: Water
Analysis Batch: 421121

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 420672

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	<0.660		2.00	0.660	ug/L		05/06/24 10:00	05/08/24 19:57	1
Beryllium	<0.330		1.00	0.330	ug/L		05/06/24 10:00	05/08/24 19:57	1
Cobalt	<0.170		0.500	0.170	ug/L		05/06/24 10:00	05/08/24 19:57	1
Copper	<1.80		5.00	1.80	ug/L		05/06/24 10:00	05/08/24 19:57	1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 310-420672/1-A
Matrix: Water
Analysis Batch: 421121

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 420672

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	<0.260		0.500	0.260	ug/L		05/06/24 10:00	05/08/24 19:57	1
Nickel	<2.10		5.00	2.10	ug/L		05/06/24 10:00	05/08/24 19:57	1
Selenium	<1.40		5.00	1.40	ug/L		05/06/24 10:00	05/08/24 19:57	1
Silver	<0.500		1.00	0.500	ug/L		05/06/24 10:00	05/08/24 19:57	1
Thallium	<0.570		1.00	0.570	ug/L		05/06/24 10:00	05/08/24 19:57	1
Vanadium	<1.10		5.00	1.10	ug/L		05/06/24 10:00	05/08/24 19:57	1
Zinc	<9.70		20.0	9.70	ug/L		05/06/24 10:00	05/08/24 19:57	1

Lab Sample ID: MB 310-420672/1-A
Matrix: Water
Analysis Batch: 421266

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 420672

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		05/06/24 10:00	05/09/24 14:46	1
Arsenic	<0.530		2.00	0.530	ug/L		05/06/24 10:00	05/09/24 14:46	1
Cadmium	<0.100		0.200	0.100	ug/L		05/06/24 10:00	05/09/24 14:46	1
Chromium	<1.20		5.00	1.20	ug/L		05/06/24 10:00	05/09/24 14:46	1

Lab Sample ID: LCS 310-420672/2-A
Matrix: Water
Analysis Batch: 421121

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 420672

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Barium	100	104.0		ug/L		104	80 - 120
Beryllium	100	100.6		ug/L		101	80 - 120
Cobalt	100	99.12		ug/L		99	80 - 120
Copper	200	200.1		ug/L		100	80 - 120
Lead	200	207.5		ug/L		104	80 - 120
Nickel	200	208.7		ug/L		104	80 - 120
Selenium	400	374.7		ug/L		94	80 - 120
Silver	100	102.2		ug/L		102	80 - 120
Vanadium	100	98.56		ug/L		99	80 - 120
Zinc	200	190.0		ug/L		95	80 - 120

Lab Sample ID: LCS 310-420672/2-A
Matrix: Water
Analysis Batch: 421266

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 420672

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	200	226.0		ug/L		113	80 - 120
Arsenic	200	213.1		ug/L		107	80 - 120
Cadmium	100	105.8		ug/L		106	80 - 120
Chromium	100	96.55		ug/L		97	80 - 120
Thallium	100	111.0		ug/L		111	80 - 120

Client: AECOM
Job ID: 310-280395-1
Project/Site: Black Hawk County Landfill (IDNR)

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: MB 310-420933/1
Matrix: Water
Analysis Batch: 420933

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<3.70		5.00	3.70	mg/L			05/07/24 18:56	1

Lab Sample ID: LCS 310-420933/2
Matrix: Water
Analysis Batch: 420933

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	93.00		mg/L		93	75 - 116

QC Association Summary

Client: AECOM
Job ID: 310-280395-1
Project/Site: Black Hawk County Landfill (IDNR)

GC/MS VOA

Analysis Batch: 421105

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280395-1	GUW3-1	Total/NA	Water	8260D	
310-280395-2	GUX-1	Total/NA	Water	8260D	
310-280395-3	Trip Blank	Total/NA	Water	8260D	
MB 310-421105/5	Method Blank	Total/NA	Water	8260D	
LCS 310-421105/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-421105/7	Lab Control Sample	Total/NA	Water	8260D	
310-280395-1 MS	GUW3-1	Total/NA	Water	8260D	
310-280395-1 MSD	GUW3-1	Total/NA	Water	8260D	

Metals

Prep Batch: 420672

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280395-1	GUW3-1	Total/NA	Water	3005A	
310-280395-2	GUX-1	Total/NA	Water	3005A	
MB 310-420672/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-420672/2-A	Lab Control Sample	Total/NA	Water	3005A	

Analysis Batch: 421121

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280395-1	GUW3-1	Total/NA	Water	6020B	420672
310-280395-2	GUX-1	Total/NA	Water	6020B	420672
MB 310-420672/1-A	Method Blank	Total/NA	Water	6020B	420672
LCS 310-420672/2-A	Lab Control Sample	Total/NA	Water	6020B	420672

Analysis Batch: 421266

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280395-1	GUW3-1	Total/NA	Water	6020B	420672
310-280395-2	GUX-1	Total/NA	Water	6020B	420672
MB 310-420672/1-A	Method Blank	Total/NA	Water	6020B	420672
LCS 310-420672/2-A	Lab Control Sample	Total/NA	Water	6020B	420672

General Chemistry

Analysis Batch: 420933

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280395-1	GUW3-1	Total/NA	Water	I-3765-85	
310-280395-2	GUX-1	Total/NA	Water	I-3765-85	
MB 310-420933/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-420933/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Field Service / Mobile Lab

Analysis Batch: 420769

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280395-1	GUW3-1	Total/NA	Water	Field Sampling	
310-280395-2	GUX-1	Total/NA	Water	Field Sampling	

Lab Chronicle

Client: AECOM
Job ID: 310-280395-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: GUW3-1
Lab Sample ID: 310-280395-1
Date Collected: 05/03/24 08:30
Matrix: Water
Date Received: 05/03/24 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	421105	WSE8	EET CF	05/10/24 04:32
Total/NA	Prep	3005A			420672	KM3E	EET CF	05/06/24 10:00
Total/NA	Analysis	6020B		1	421121	NFT2	EET CF	05/08/24 20:35
Total/NA	Prep	3005A			420672	KM3E	EET CF	05/06/24 10:00
Total/NA	Analysis	6020B		1	421266	NFT2	EET CF	05/09/24 14:57
Total/NA	Analysis	I-3765-85		1	420933	A4XP	EET CF	05/07/24 18:56
Total/NA	Analysis	Field Sampling		1	420769	BJ0R	EET CF	05/03/24 08:30

Client Sample ID: GUX-1
Lab Sample ID: 310-280395-2
Date Collected: 05/03/24 07:45
Matrix: Water
Date Received: 05/03/24 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	421105	WSE8	EET CF	05/10/24 04:54
Total/NA	Prep	3005A			420672	KM3E	EET CF	05/06/24 10:00
Total/NA	Analysis	6020B		1	421121	NFT2	EET CF	05/08/24 20:38
Total/NA	Prep	3005A			420672	KM3E	EET CF	05/06/24 10:00
Total/NA	Analysis	6020B		1	421266	NFT2	EET CF	05/09/24 14:59
Total/NA	Analysis	I-3765-85		1	420933	A4XP	EET CF	05/07/24 18:56
Total/NA	Analysis	Field Sampling		1	420769	BJ0R	EET CF	05/03/24 07:45

Client Sample ID: Trip Blank
Lab Sample ID: 310-280395-3
Date Collected: 05/03/24 06:00
Matrix: Water
Date Received: 05/03/24 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	421105	WSE8	EET CF	05/10/24 03:05

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Accreditation/Certification Summary

Client: AECOM
Job ID: 310-280395-1
Project/Site: Black Hawk County Landfill (IDNR)

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8260D		Water	m,p-Xylene
8260D		Water	o-Xylene
Field Sampling		Water	Field Turbidity

Method Summary

Client: AECOM
Job ID: 310-280395-1
Project/Site: Black Hawk County Landfill (IDNR)

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
Field Sampling	Field Sampling	EPA	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
5030B	Purge and Trap	SW846	EET CF

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

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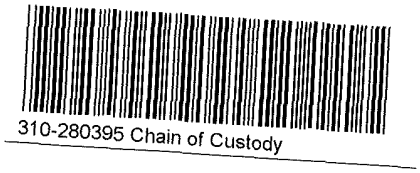

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: AECOM

City/State: CITY Joliet STATE IL Project: BHC TMR

Receipt Information

Date/Time Received: DATE 5/3/24 TIME 1015 Received By: D

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☐ Lab Courier ☐ Lab Field Services ☑ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☑ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☐ Yes ☑ No *If yes:* Cooler # _____ of _____

Cooler Custody Seals Present? ☐ Yes ☐ No *If yes:* Cooler custody seals intact? ☐ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☑ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☑ Yes ☐ No *If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☑ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: X Correction Factor (°C): 0.0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 4.3 Corrected Temp (°C): 4.3

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE If yes, contact PM before proceeding If no, proceed with login

Additional Comments

Eurofins Cedar Falls
3019 Venture Way

Cedar Falls, IA 50613
phone 319 277.2401 fax 319.277.2425

Chain of Custody Record

eurofins Environment Testing America

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other IDNR

Eurofins Environment Testing America

Client Contact	Project Manager: Chris Oelkers	Site Contact:	Date: 5-3-24	COC No
AECOM	Email Christopher Oelkers@aecom com	Lab Contact:	Carrier:	1 of 1 COCs
501 Sycamore Street, Suite 222	Tel/Fax:319-296-6878			TALS Project #
Waterloo, IA 50703	Analysis Turnaround Time			Sampler
(319) 232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(xxx) xxx-xxxx FAX	TAT if different from Below ____			Walk-in Client:
Project Name Black Hawk Co IDNR	☑ 2 weeks			Lab Sampling
Site Black Hawk County Landfill	☐ 1 week			Job / SDG No
P O #	☐ 2 days			
	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Appendix I, TSS	Appendix II, TSS	2,4-D	4,4'-DDD	beta-BHC	delta BHC	Endosulfan I	Endosulfan sulfate	Endrin aldehyde	Silvex	Sulfide	Sample Specific Notes
GUW3-1	5-3-24	0830	G	GW	5	N		X											Turbidity - 9.27 NTU
GUX-1	5-3-24	0745	G	GW	5	N		X											Turbidity - 11.42 NTU
P-213C			G	GW		N			X										
P-214CR			G	GW		N		X											
P-215CR			G	GW		N		X											
P-216CR			G	GW		N		X											
P-402A			G	GW		N		X											
P-402C			G	GW		N		X											
P-604C			G	GW		N		X											
P-703C			G	GW		N		X											
P-703C-FD			G	GW		N		X											
Trip Blank	5-3-24	0600	G	W	2	N		X											

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for ____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No | Cooler Temp (°C) Obs'd. ____ Corr'd ____ | Therm ID No. ____

Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Ben Porter	Aecom	5-3-24			5 3 24 1015
Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Relinquished by	Company	Date/Time	Received in Laboratory by	Company	Date/Time

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3/13/2024

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-280395-1

Login Number: 280395

List Source: Eurofins Cedar Falls

List Number: 1

Creator: Costello, Mackenzie K

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Chris Oelkers
AECOM
501 Sycamore Street
Suite #222
Waterloo, Iowa 50703

Generated 5/15/2024 11:28:42 AM

JOB DESCRIPTION

Black Hawk County Landfill (IDNR)

JOB NUMBER

310-280571-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



Generated
5/15/2024 11:28:42 AM

Authorized for release by
Zach Bindert, Client Service Manager
Zach.Bindert@et.eurofinsus.com
(319)277-2401

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Job ID: 310-280571-1 — Eurofins Cedar Falls

Job Narrative
310-280571-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 5/7/2024 11:45 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.6°C.

GC/MS VOA
Method 8260D: The continuing calibration verification (CCV) associated with batch 310-421151 recovered outside control limits for 1,4-Dichlorobenzene (-20.5%D) and Toluene (-20.6%D). The LCS associated with this CCV passes CCV criteria for the affected analytes; therefore, the data have been reported. The associated sample is impacted: (CCV 310-421151/3).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Field Service / Mobile Lab
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Sample Summary

Client: AECOM
Job ID: 310-280571-1
Project/Site: Black Hawk County Landfill (IDNR)

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-280571-1	OW-209B	Ground Water	05/06/24 12:20	05/07/24 11:45
310-280571-2	OW-212B	Ground Water	05/06/24 13:30	05/07/24 11:45
310-280571-3	OW-213BR	Ground Water	05/06/24 16:00	05/07/24 11:45
310-280571-4	OW-219B	Ground Water	05/06/24 14:45	05/07/24 11:45
310-280571-5	OW-219B-FD	Ground Water	05/06/24 14:45	05/07/24 11:45
310-280571-6	Trip Blank	Water	05/06/24 08:00	05/07/24 11:45
310-280571-7	Equipment Blank-1	Ground Water	05/06/24 15:00	05/07/24 11:45

Detection Summary

Client: AECOM
Job ID: 310-280571-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-209B — Lab Sample ID: 310-280571-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	55.3		2.00	0.660	ug/L	1		6020B	Total/NA
Cadmium	0.105	J	0.200	0.100	ug/L	1		6020B	Total/NA
Cobalt	0.475	J	0.500	0.170	ug/L	1		6020B	Total/NA
Copper	4.73	J	5.00	1.80	ug/L	1		6020B	Total/NA
Nickel	6.86		5.00	2.10	ug/L	1		6020B	Total/NA
Total Suspended Solids	2.50		1.88	1.39	mg/L	1		I-3765-85	Total/NA
Field Turbidity	2.28				NTU	1		Field Sampling	Total/NA

Client Sample ID: OW-212B — Lab Sample ID: 310-280571-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	5.99	J	10.0	3.10	ug/L	1		8260D	Total/NA
Arsenic	1.21	J	2.00	0.530	ug/L	1		6020B	Total/NA
Barium	27.5		2.00	0.660	ug/L	1		6020B	Total/NA
Cadmium	0.590		0.200	0.100	ug/L	1		6020B	Total/NA
Chromium	1.52	J	5.00	1.20	ug/L	1		6020B	Total/NA
Cobalt	11.9		0.500	0.170	ug/L	1		6020B	Total/NA
Copper	7.25		5.00	1.80	ug/L	1		6020B	Total/NA
Nickel	44.9		5.00	2.10	ug/L	1		6020B	Total/NA
Thallium	0.572	J	1.00	0.570	ug/L	1		6020B	Total/NA
Total Suspended Solids	7.13		1.88	1.39	mg/L	1		I-3765-85	Total/NA
Field Turbidity	6.46				NTU	1		Field Sampling	Total/NA

Client Sample ID: OW-213BR — Lab Sample ID: 310-280571-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.294	J	0.500	0.220	ug/L	1		8260D	Total/NA
cis-1,2-Dichloroethene	0.404	J	1.00	0.210	ug/L	1		8260D	Total/NA
Barium	59.9		2.00	0.660	ug/L	1		6020B	Total/NA
Chromium	1.85	J	5.00	1.20	ug/L	1		6020B	Total/NA
Cobalt	0.587		0.500	0.170	ug/L	1		6020B	Total/NA
Nickel	16.5		5.00	2.10	ug/L	1		6020B	Total/NA
Field Turbidity	2.49				NTU	1		Field Sampling	Total/NA

Client Sample ID: OW-219B — Lab Sample ID: 310-280571-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	27.5		2.00	0.660	ug/L	1		6020B	Total/NA
Cadmium	0.106	J	0.200	0.100	ug/L	1		6020B	Total/NA
Chromium	2.58	J	5.00	1.20	ug/L	1		6020B	Total/NA
Cobalt	0.528		0.500	0.170	ug/L	1		6020B	Total/NA
Nickel	2.27	J	5.00	2.10	ug/L	1		6020B	Total/NA
Total Suspended Solids	3.87		1.88	1.39	mg/L	1		I-3765-85	Total/NA
Field Turbidity	3.31				NTU	1		Field Sampling	Total/NA

Client Sample ID: OW-219B-FD — Lab Sample ID: 310-280571-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	29.3		2.00	0.660	ug/L	1		6020B	Total/NA
Cadmium	0.124	J	0.200	0.100	ug/L	1		6020B	Total/NA
Chromium	2.69	J	5.00	1.20	ug/L	1		6020B	Total/NA
Cobalt	0.454	J	0.500	0.170	ug/L	1		6020B	Total/NA
Nickel	2.55	J	5.00	2.10	ug/L	1		6020B	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: AECOM
Job ID: 310-280571-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-219B-FD (Continued)
Lab Sample ID: 310-280571-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Suspended Solids	5.75		1.88	1.39	mg/L	1		I-3765-85	Total/NA

Client Sample ID: Trip Blank
Lab Sample ID: 310-280571-6

No Detections.

Client Sample ID: Equipment Blank-1
Lab Sample ID: 310-280571-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	5.16	J	10.0	3.10	ug/L	1		8260D	Total/NA
Bromodichloromethane	1.14		1.00	0.390	ug/L	1		8260D	Total/NA
Chloroform	4.26		3.00	1.30	ug/L	1		8260D	Total/NA
m,p-Xylene	0.512	J	2.00	0.380	ug/L	1		8260D	Total/NA
Toluene	0.743	J	1.00	0.430	ug/L	1		8260D	Total/NA
Xylenes, Total	0.512	J	3.00	0.400	ug/L	1		8260D	Total/NA

This Detection Summary does not include radiochemical test results.

Client: AECOM
Job ID: 310-280571-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-209B
Lab Sample ID: 310-280571-1
Date Collected: 05/06/24 12:20
Matrix: Ground Water
Date Received: 05/07/24 11:45

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/10/24 03:41	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/10/24 03:41	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/10/24 03:41	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/10/24 03:41	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/10/24 03:41	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/10/24 03:41	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/10/24 03:41	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/10/24 03:41	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/10/24 03:41	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/10/24 03:41	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/10/24 03:41	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/10/24 03:41	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/10/24 03:41	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/10/24 03:41	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/10/24 03:41	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/10/24 03:41	1
Acetone	<3.10		10.0	3.10	ug/L			05/10/24 03:41	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/10/24 03:41	1
Benzene	<0.220		0.500	0.220	ug/L			05/10/24 03:41	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/10/24 03:41	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/10/24 03:41	1
Bromoform	<0.780		5.00	0.780	ug/L			05/10/24 03:41	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/10/24 03:41	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/10/24 03:41	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/10/24 03:41	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/10/24 03:41	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/10/24 03:41	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/10/24 03:41	1
Chloroform	<1.30		3.00	1.30	ug/L			05/10/24 03:41	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/10/24 03:41	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/10/24 03:41	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/10/24 03:41	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/10/24 03:41	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/10/24 03:41	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/10/24 03:41	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/10/24 03:41	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/10/24 03:41	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/10/24 03:41	1
Styrene	<0.370		1.00	0.370	ug/L			05/10/24 03:41	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/10/24 03:41	1
Toluene	<0.430		1.00	0.430	ug/L			05/10/24 03:41	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/10/24 03:41	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/10/24 03:41	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/10/24 03:41	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/10/24 03:41	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/10/24 03:41	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/10/24 03:41	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/10/24 03:41	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/10/24 03:41	1

Client: AECOM
Job ID: 310-280571-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-209B
Lab Sample ID: 310-280571-1
Date Collected: 05/06/24 12:20
Matrix: Ground Water
Date Received: 05/07/24 11:45

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*116*		*73 - 130*		*05/10/24 03:41*	*1*
Toluene-d8 (Surr)	*94*		*80 - 120*		*05/10/24 03:41*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*		*05/10/24 03:41*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		05/08/24 09:00	05/09/24 18:42	1
Arsenic	<0.530		2.00	0.530	ug/L		05/08/24 09:00	05/09/24 18:42	1
Barium	**55.3**		2.00	0.660	ug/L		05/08/24 09:00	05/09/24 18:42	1
Beryllium	<0.330		1.00	0.330	ug/L		05/08/24 09:00	05/09/24 18:42	1
Cadmium	**0.105**	**J**	0.200	0.100	ug/L		05/08/24 09:00	05/09/24 18:42	1
Chromium	<1.20		5.00	1.20	ug/L		05/08/24 09:00	05/09/24 18:42	1
Cobalt	**0.475**	**J**	0.500	0.170	ug/L		05/08/24 09:00	05/09/24 18:42	1
Copper	**4.73**	**J**	5.00	1.80	ug/L		05/08/24 09:00	05/09/24 18:42	1
Lead	<0.260		0.500	0.260	ug/L		05/08/24 09:00	05/09/24 18:42	1
Nickel	**6.86**		5.00	2.10	ug/L		05/08/24 09:00	05/09/24 18:42	1
Selenium	<1.40		5.00	1.40	ug/L		05/08/24 09:00	05/09/24 18:42	1
Silver	<0.500		1.00	0.500	ug/L		05/08/24 09:00	05/09/24 18:42	1
Thallium	<0.570		1.00	0.570	ug/L		05/08/24 09:00	05/09/24 18:42	1
Vanadium	<1.10		5.00	1.10	ug/L		05/08/24 09:00	05/09/24 18:42	1
Zinc	<9.70		20.0	9.70	ug/L		05/08/24 09:00	05/09/24 18:42	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**2.50**		1.88	1.39	mg/L			05/09/24 14:03	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**2.28**				NTU			05/06/24 12:20	1

Client: AECOM
Job ID: 310-280571-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-212B
Lab Sample ID: 310-280571-2
Date Collected: 05/06/24 13:30
Matrix: Ground Water
Date Received: 05/07/24 11:45

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/10/24 04:03	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/10/24 04:03	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/10/24 04:03	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/10/24 04:03	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/10/24 04:03	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/10/24 04:03	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/10/24 04:03	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/10/24 04:03	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/10/24 04:03	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/10/24 04:03	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/10/24 04:03	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/10/24 04:03	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/10/24 04:03	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/10/24 04:03	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/10/24 04:03	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/10/24 04:03	1
Acetone	**5.99**	**J**	10.0	3.10	ug/L			05/10/24 04:03	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/10/24 04:03	1
Benzene	<0.220		0.500	0.220	ug/L			05/10/24 04:03	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/10/24 04:03	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/10/24 04:03	1
Bromoform	<0.780		5.00	0.780	ug/L			05/10/24 04:03	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/10/24 04:03	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/10/24 04:03	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/10/24 04:03	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/10/24 04:03	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/10/24 04:03	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/10/24 04:03	1
Chloroform	<1.30		3.00	1.30	ug/L			05/10/24 04:03	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/10/24 04:03	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/10/24 04:03	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/10/24 04:03	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/10/24 04:03	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/10/24 04:03	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/10/24 04:03	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/10/24 04:03	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/10/24 04:03	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/10/24 04:03	1
Styrene	<0.370		1.00	0.370	ug/L			05/10/24 04:03	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/10/24 04:03	1
Toluene	<0.430		1.00	0.430	ug/L			05/10/24 04:03	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/10/24 04:03	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/10/24 04:03	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/10/24 04:03	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/10/24 04:03	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/10/24 04:03	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/10/24 04:03	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/10/24 04:03	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/10/24 04:03	1

Client: AECOM
Job ID: 310-280571-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-212B
Lab Sample ID: 310-280571-2

Date Collected: 05/06/24 13:30
Matrix: Ground Water

Date Received: 05/07/24 11:45

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*116*		*73 - 130*		*05/10/24 04:03*	*1*
Toluene-d8 (Surr)	*95*		*80 - 120*		*05/10/24 04:03*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*05/10/24 04:03*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		05/08/24 09:00	05/09/24 19:01	1
Arsenic	**1.21**	**J**	2.00	0.530	ug/L		05/08/24 09:00	05/09/24 19:01	1
Barium	**27.5**		2.00	0.660	ug/L		05/08/24 09:00	05/09/24 19:01	1
Beryllium	<0.330		1.00	0.330	ug/L		05/08/24 09:00	05/09/24 19:01	1
Cadmium	**0.590**		0.200	0.100	ug/L		05/08/24 09:00	05/09/24 19:01	1
Chromium	**1.52**	**J**	5.00	1.20	ug/L		05/08/24 09:00	05/09/24 19:01	1
Cobalt	**11.9**		0.500	0.170	ug/L		05/08/24 09:00	05/09/24 19:01	1
Copper	**7.25**		5.00	1.80	ug/L		05/08/24 09:00	05/09/24 19:01	1
Lead	<0.260		0.500	0.260	ug/L		05/08/24 09:00	05/09/24 19:01	1
Nickel	**44.9**		5.00	2.10	ug/L		05/08/24 09:00	05/09/24 19:01	1
Selenium	<1.40		5.00	1.40	ug/L		05/08/24 09:00	05/09/24 19:01	1
Silver	<0.500		1.00	0.500	ug/L		05/08/24 09:00	05/09/24 19:01	1
Thallium	**0.572**	**J**	1.00	0.570	ug/L		05/08/24 09:00	05/09/24 19:01	1
Vanadium	<1.10		5.00	1.10	ug/L		05/08/24 09:00	05/09/24 19:01	1
Zinc	<9.70		20.0	9.70	ug/L		05/08/24 09:00	05/09/24 19:01	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**7.13**		1.88	1.39	mg/L			05/09/24 14:03	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**6.46**				NTU			05/06/24 13:30	1

Client: AECOM
Job ID: 310-280571-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-213BR
Lab Sample ID: 310-280571-3
Date Collected: 05/06/24 16:00
Matrix: Ground Water
Date Received: 05/07/24 11:45

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/10/24 10:07	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/10/24 10:07	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/10/24 10:07	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/10/24 10:07	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/10/24 10:07	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/10/24 10:07	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/10/24 10:07	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/10/24 10:07	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/10/24 10:07	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/10/24 10:07	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/10/24 10:07	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/10/24 10:07	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/10/24 10:07	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/10/24 10:07	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/10/24 10:07	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/10/24 10:07	1
Acetone	<3.10		10.0	3.10	ug/L			05/10/24 10:07	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/10/24 10:07	1
Benzene	**0.294**	**J**	0.500	0.220	ug/L			05/10/24 10:07	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/10/24 10:07	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/10/24 10:07	1
Bromoform	<0.780		5.00	0.780	ug/L			05/10/24 10:07	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/10/24 10:07	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/10/24 10:07	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/10/24 10:07	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/10/24 10:07	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/10/24 10:07	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/10/24 10:07	1
Chloroform	<1.30		3.00	1.30	ug/L			05/10/24 10:07	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/10/24 10:07	1
cis-1,2-Dichloroethene	**0.404**	**J**	1.00	0.210	ug/L			05/10/24 10:07	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/10/24 10:07	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/10/24 10:07	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/10/24 10:07	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/10/24 10:07	1
m,p-Xylene	<0.380	F2	2.00	0.380	ug/L			05/10/24 10:07	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/10/24 10:07	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/10/24 10:07	1
Styrene	<0.370		1.00	0.370	ug/L			05/10/24 10:07	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/10/24 10:07	1
Toluene	<0.430		1.00	0.430	ug/L			05/10/24 10:07	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/10/24 10:07	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/10/24 10:07	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/10/24 10:07	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/10/24 10:07	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/10/24 10:07	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/10/24 10:07	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/10/24 10:07	1
Xylenes, Total	<0.400	F2	3.00	0.400	ug/L			05/10/24 10:07	1

Client: AECOM
Job ID: 310-280571-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-213BR
Lab Sample ID: 310-280571-3

Date Collected: 05/06/24 16:00
Matrix: Ground Water

Date Received: 05/07/24 11:45

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*121*		*73 - 130*		*05/10/24 10:07*	*1*
Toluene-d8 (Surr)	*94*		*80 - 120*		*05/10/24 10:07*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*		*05/10/24 10:07*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		05/08/24 09:00	05/09/24 19:03	1
Arsenic	<0.530		2.00	0.530	ug/L		05/08/24 09:00	05/09/24 19:03	1
Barium	**59.9**		2.00	0.660	ug/L		05/08/24 09:00	05/09/24 19:03	1
Beryllium	<0.330		1.00	0.330	ug/L		05/08/24 09:00	05/09/24 19:03	1
Cadmium	<0.100		0.200	0.100	ug/L		05/08/24 09:00	05/09/24 19:03	1
Chromium	**1.85**	**J**	5.00	1.20	ug/L		05/08/24 09:00	05/09/24 19:03	1
Cobalt	**0.587**		0.500	0.170	ug/L		05/08/24 09:00	05/09/24 19:03	1
Copper	<1.80		5.00	1.80	ug/L		05/08/24 09:00	05/09/24 19:03	1
Lead	<0.260		0.500	0.260	ug/L		05/08/24 09:00	05/09/24 19:03	1
Nickel	**16.5**		5.00	2.10	ug/L		05/08/24 09:00	05/09/24 19:03	1
Selenium	<1.40		5.00	1.40	ug/L		05/08/24 09:00	05/09/24 19:03	1
Silver	<0.500		1.00	0.500	ug/L		05/08/24 09:00	05/09/24 19:03	1
Thallium	<0.570		1.00	0.570	ug/L		05/08/24 09:00	05/09/24 19:03	1
Vanadium	<1.10		5.00	1.10	ug/L		05/08/24 09:00	05/09/24 19:03	1
Zinc	<9.70		20.0	9.70	ug/L		05/08/24 09:00	05/09/24 19:03	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	<3.70		5.00	3.70	mg/L			05/07/24 18:56	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**2.49**				NTU			05/06/24 16:00	1

Client: AECOM
Job ID: 310-280571-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-219B
Lab Sample ID: 310-280571-4
Date Collected: 05/06/24 14:45
Matrix: Ground Water
Date Received: 05/07/24 11:45

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/10/24 10:30	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/10/24 10:30	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/10/24 10:30	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/10/24 10:30	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/10/24 10:30	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/10/24 10:30	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/10/24 10:30	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/10/24 10:30	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/10/24 10:30	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/10/24 10:30	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/10/24 10:30	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/10/24 10:30	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/10/24 10:30	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/10/24 10:30	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/10/24 10:30	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/10/24 10:30	1
Acetone	<3.10		10.0	3.10	ug/L			05/10/24 10:30	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/10/24 10:30	1
Benzene	<0.220		0.500	0.220	ug/L			05/10/24 10:30	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/10/24 10:30	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/10/24 10:30	1
Bromoform	<0.780		5.00	0.780	ug/L			05/10/24 10:30	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/10/24 10:30	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/10/24 10:30	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/10/24 10:30	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/10/24 10:30	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/10/24 10:30	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/10/24 10:30	1
Chloroform	<1.30		3.00	1.30	ug/L			05/10/24 10:30	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/10/24 10:30	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/10/24 10:30	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/10/24 10:30	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/10/24 10:30	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/10/24 10:30	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/10/24 10:30	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/10/24 10:30	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/10/24 10:30	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/10/24 10:30	1
Styrene	<0.370		1.00	0.370	ug/L			05/10/24 10:30	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/10/24 10:30	1
Toluene	<0.430		1.00	0.430	ug/L			05/10/24 10:30	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/10/24 10:30	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/10/24 10:30	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/10/24 10:30	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/10/24 10:30	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/10/24 10:30	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/10/24 10:30	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/10/24 10:30	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/10/24 10:30	1

Client: AECOM
Job ID: 310-280571-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-219B
Lab Sample ID: 310-280571-4

Date Collected: 05/06/24 14:45
Matrix: Ground Water
Date Received: 05/07/24 11:45

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*122*		*73 - 130*		*05/10/24 10:30*	*1*
Toluene-d8 (Surr)	*92*		*80 - 120*		*05/10/24 10:30*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*		*05/10/24 10:30*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		05/08/24 09:00	05/09/24 19:05	1
Arsenic	<0.530		2.00	0.530	ug/L		05/08/24 09:00	05/09/24 19:05	1
Barium	**27.5**		2.00	0.660	ug/L		05/08/24 09:00	05/09/24 19:05	1
Beryllium	<0.330		1.00	0.330	ug/L		05/08/24 09:00	05/09/24 19:05	1
Cadmium	**0.106**	**J**	0.200	0.100	ug/L		05/08/24 09:00	05/09/24 19:05	1
Chromium	**2.58**	**J**	5.00	1.20	ug/L		05/08/24 09:00	05/09/24 19:05	1
Cobalt	**0.528**		0.500	0.170	ug/L		05/08/24 09:00	05/09/24 19:05	1
Copper	<1.80		5.00	1.80	ug/L		05/08/24 09:00	05/09/24 19:05	1
Lead	<0.260		0.500	0.260	ug/L		05/08/24 09:00	05/09/24 19:05	1
Nickel	**2.27**	**J**	5.00	2.10	ug/L		05/08/24 09:00	05/09/24 19:05	1
Selenium	<1.40		5.00	1.40	ug/L		05/08/24 09:00	05/09/24 19:05	1
Silver	<0.500		1.00	0.500	ug/L		05/08/24 09:00	05/09/24 19:05	1
Thallium	<0.570		1.00	0.570	ug/L		05/08/24 09:00	05/09/24 19:05	1
Vanadium	<1.10		5.00	1.10	ug/L		05/08/24 09:00	05/09/24 19:05	1
Zinc	<9.70		20.0	9.70	ug/L		05/08/24 09:00	05/09/24 19:05	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**3.87**		1.88	1.39	mg/L			05/09/24 14:03	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**3.31**				NTU			05/06/24 14:45	1

Client: AECOM
Job ID: 310-280571-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-219B-FD
Lab Sample ID: 310-280571-5
Date Collected: 05/06/24 14:45
Matrix: Ground Water
Date Received: 05/07/24 11:45

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/10/24 10:53	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/10/24 10:53	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/10/24 10:53	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/10/24 10:53	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/10/24 10:53	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/10/24 10:53	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/10/24 10:53	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/10/24 10:53	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/10/24 10:53	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/10/24 10:53	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/10/24 10:53	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/10/24 10:53	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/10/24 10:53	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/10/24 10:53	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/10/24 10:53	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/10/24 10:53	1
Acetone	<3.10		10.0	3.10	ug/L			05/10/24 10:53	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/10/24 10:53	1
Benzene	<0.220		0.500	0.220	ug/L			05/10/24 10:53	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/10/24 10:53	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/10/24 10:53	1
Bromoform	<0.780		5.00	0.780	ug/L			05/10/24 10:53	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/10/24 10:53	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/10/24 10:53	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/10/24 10:53	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/10/24 10:53	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/10/24 10:53	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/10/24 10:53	1
Chloroform	<1.30		3.00	1.30	ug/L			05/10/24 10:53	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/10/24 10:53	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/10/24 10:53	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/10/24 10:53	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/10/24 10:53	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/10/24 10:53	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/10/24 10:53	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/10/24 10:53	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/10/24 10:53	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/10/24 10:53	1
Styrene	<0.370		1.00	0.370	ug/L			05/10/24 10:53	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/10/24 10:53	1
Toluene	<0.430		1.00	0.430	ug/L			05/10/24 10:53	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/10/24 10:53	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/10/24 10:53	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/10/24 10:53	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/10/24 10:53	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/10/24 10:53	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/10/24 10:53	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/10/24 10:53	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/10/24 10:53	1

Client: AECOM
Job ID: 310-280571-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-219B-FD
Lab Sample ID: 310-280571-5

Date Collected: 05/06/24 14:45
Matrix: Ground Water
Date Received: 05/07/24 11:45

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*120*		*73 - 130*		*05/10/24 10:53*	*1*
Toluene-d8 (Surr)	*93*		*80 - 120*		*05/10/24 10:53*	*1*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*05/10/24 10:53*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		05/08/24 09:00	05/09/24 19:07	1
Arsenic	<0.530		2.00	0.530	ug/L		05/08/24 09:00	05/09/24 19:07	1
Barium	**29.3**		2.00	0.660	ug/L		05/08/24 09:00	05/09/24 19:07	1
Beryllium	<0.330		1.00	0.330	ug/L		05/08/24 09:00	05/09/24 19:07	1
Cadmium	**0.124**	**J**	0.200	0.100	ug/L		05/08/24 09:00	05/09/24 19:07	1
Chromium	**2.69**	**J**	5.00	1.20	ug/L		05/08/24 09:00	05/09/24 19:07	1
Cobalt	**0.454**	**J**	0.500	0.170	ug/L		05/08/24 09:00	05/09/24 19:07	1
Copper	<1.80		5.00	1.80	ug/L		05/08/24 09:00	05/09/24 19:07	1
Lead	<0.260		0.500	0.260	ug/L		05/08/24 09:00	05/09/24 19:07	1
Nickel	**2.55**	**J**	5.00	2.10	ug/L		05/08/24 09:00	05/09/24 19:07	1
Selenium	<1.40		5.00	1.40	ug/L		05/08/24 09:00	05/09/24 19:07	1
Silver	<0.500		1.00	0.500	ug/L		05/08/24 09:00	05/09/24 19:07	1
Thallium	<0.570		1.00	0.570	ug/L		05/08/24 09:00	05/09/24 19:07	1
Vanadium	<1.10		5.00	1.10	ug/L		05/08/24 09:00	05/09/24 19:07	1
Zinc	<9.70		20.0	9.70	ug/L		05/08/24 09:00	05/09/24 19:07	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**5.75**		1.88	1.39	mg/L			05/09/24 14:03	1

Client: AECOM
Job ID: 310-280571-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Trip Blank
Lab Sample ID: 310-280571-6
Date Collected: 05/06/24 08:00
Matrix: Water
Date Received: 05/07/24 11:45

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/10/24 09:22	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/10/24 09:22	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/10/24 09:22	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/10/24 09:22	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/10/24 09:22	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/10/24 09:22	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/10/24 09:22	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/10/24 09:22	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/10/24 09:22	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/10/24 09:22	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/10/24 09:22	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/10/24 09:22	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/10/24 09:22	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/10/24 09:22	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/10/24 09:22	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/10/24 09:22	1
Acetone	<3.10		10.0	3.10	ug/L			05/10/24 09:22	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/10/24 09:22	1
Benzene	<0.220		0.500	0.220	ug/L			05/10/24 09:22	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/10/24 09:22	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/10/24 09:22	1
Bromoform	<0.780		5.00	0.780	ug/L			05/10/24 09:22	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/10/24 09:22	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/10/24 09:22	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/10/24 09:22	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/10/24 09:22	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/10/24 09:22	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/10/24 09:22	1
Chloroform	<1.30		3.00	1.30	ug/L			05/10/24 09:22	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/10/24 09:22	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/10/24 09:22	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/10/24 09:22	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/10/24 09:22	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/10/24 09:22	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/10/24 09:22	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/10/24 09:22	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/10/24 09:22	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/10/24 09:22	1
Styrene	<0.370		1.00	0.370	ug/L			05/10/24 09:22	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/10/24 09:22	1
Toluene	<0.430		1.00	0.430	ug/L			05/10/24 09:22	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/10/24 09:22	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/10/24 09:22	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/10/24 09:22	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/10/24 09:22	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/10/24 09:22	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/10/24 09:22	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/10/24 09:22	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/10/24 09:22	1

Client: AECOM
Job ID: 310-280571-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Trip Blank
Lab Sample ID: 310-280571-6
Date Collected: 05/06/24 08:00
Matrix: Water
Date Received: 05/07/24 11:45

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	122		73 - 130		05/10/24 09:22	1
Toluene-d8 (Surr)	94		80 - 120		05/10/24 09:22	1
4-Bromofluorobenzene (Surr)	100		80 - 120		05/10/24 09:22	1

Client: AECOM
Job ID: 310-280571-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Equipment Blank-1
Lab Sample ID: 310-280571-7
Date Collected: 05/06/24 15:00
Matrix: Ground Water
Date Received: 05/07/24 11:45

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/10/24 11:16	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/10/24 11:16	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/10/24 11:16	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/10/24 11:16	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/10/24 11:16	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/10/24 11:16	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/10/24 11:16	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/10/24 11:16	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/10/24 11:16	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/10/24 11:16	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/10/24 11:16	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/10/24 11:16	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/10/24 11:16	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/10/24 11:16	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/10/24 11:16	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/10/24 11:16	1
Acetone	**5.16**	**J**	10.0	3.10	ug/L			05/10/24 11:16	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/10/24 11:16	1
Benzene	<0.220		0.500	0.220	ug/L			05/10/24 11:16	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/10/24 11:16	1
Bromodichloromethane	**1.14**		1.00	0.390	ug/L			05/10/24 11:16	1
Bromoform	<0.780		5.00	0.780	ug/L			05/10/24 11:16	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/10/24 11:16	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/10/24 11:16	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/10/24 11:16	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/10/24 11:16	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/10/24 11:16	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/10/24 11:16	1
Chloroform	**4.26**		3.00	1.30	ug/L			05/10/24 11:16	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/10/24 11:16	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/10/24 11:16	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/10/24 11:16	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/10/24 11:16	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/10/24 11:16	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/10/24 11:16	1
m,p-Xylene	**0.512**	**J**	2.00	0.380	ug/L			05/10/24 11:16	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/10/24 11:16	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/10/24 11:16	1
Styrene	<0.370		1.00	0.370	ug/L			05/10/24 11:16	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/10/24 11:16	1
Toluene	**0.743**	**J**	1.00	0.430	ug/L			05/10/24 11:16	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/10/24 11:16	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/10/24 11:16	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/10/24 11:16	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/10/24 11:16	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/10/24 11:16	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/10/24 11:16	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/10/24 11:16	1
Xylenes, Total	**0.512**	**J**	3.00	0.400	ug/L			05/10/24 11:16	1

Client: AECOM
Job ID: 310-280571-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Equipment Blank-1
Lab Sample ID: 310-280571-7

Date Collected: 05/06/24 15:00
Matrix: Ground Water
Date Received: 05/07/24 11:45

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*119*		*73 - 130*		*05/10/24 11:16*	*1*
Toluene-d8 (Surr)	*93*		*80 - 120*		*05/10/24 11:16*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*05/10/24 11:16*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		05/08/24 09:00	05/09/24 19:09	1
Arsenic	<0.530		2.00	0.530	ug/L		05/08/24 09:00	05/09/24 19:09	1
Barium	<0.660		2.00	0.660	ug/L		05/08/24 09:00	05/09/24 19:09	1
Beryllium	<0.330		1.00	0.330	ug/L		05/08/24 09:00	05/09/24 19:09	1
Cadmium	<0.100		0.200	0.100	ug/L		05/08/24 09:00	05/09/24 19:09	1
Chromium	<1.20		5.00	1.20	ug/L		05/08/24 09:00	05/09/24 19:09	1
Cobalt	<0.170		0.500	0.170	ug/L		05/08/24 09:00	05/09/24 19:09	1
Copper	<1.80		5.00	1.80	ug/L		05/08/24 09:00	05/09/24 19:09	1
Lead	<0.260		0.500	0.260	ug/L		05/08/24 09:00	05/09/24 19:09	1
Nickel	<2.10		5.00	2.10	ug/L		05/08/24 09:00	05/09/24 19:09	1
Selenium	<1.40		5.00	1.40	ug/L		05/08/24 09:00	05/09/24 19:09	1
Silver	<0.500		1.00	0.500	ug/L		05/08/24 09:00	05/09/24 19:09	1
Thallium	<0.570		1.00	0.570	ug/L		05/08/24 09:00	05/09/24 19:09	1
Vanadium	<1.10		5.00	1.10	ug/L		05/08/24 09:00	05/09/24 19:09	1
Zinc	<9.70		20.0	9.70	ug/L		05/08/24 09:00	05/09/24 19:09	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	<1.39		1.88	1.39	mg/L			05/09/24 14:03	1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
F2	MS/MSD RPD exceeds control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Surrogate Summary

Client: AECOM
Job ID: 310-280571-1
Project/Site: Black Hawk County Landfill (IDNR)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Ground Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-280571-1	OW-209B	116	94	102
310-280571-2	OW-212B	116	95	101
310-280571-3	OW-213BR	121	94	102
310-280571-3 MS	OW-213BR	105	96	101
310-280571-3 MSD	OW-213BR	106	95	99
310-280571-4	OW-219B	122	92	102
310-280571-5	OW-219B-FD	120	93	99
310-280571-7	Equipment Blank-1	119	93	101

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-280571-6	Trip Blank	122	94	100
LCS 310-421148/6	Lab Control Sample	105	96	99
LCS 310-421148/7	Lab Control Sample	122	95	101
LCS 310-421151/6	Lab Control Sample	104	96	99
LCS 310-421151/7	Lab Control Sample	122	94	102
MB 310-421148/5	Method Blank	118	95	100
MB 310-421151/5	Method Blank	117	94	101

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 310-421148/5
Matrix: Water
Analysis Batch: 421148

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/09/24 21:14	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/09/24 21:14	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/09/24 21:14	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/09/24 21:14	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/09/24 21:14	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/09/24 21:14	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/09/24 21:14	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/09/24 21:14	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/09/24 21:14	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/09/24 21:14	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/09/24 21:14	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/09/24 21:14	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/09/24 21:14	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/09/24 21:14	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/09/24 21:14	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/09/24 21:14	1
Acetone	<3.10		10.0	3.10	ug/L			05/09/24 21:14	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/09/24 21:14	1
Benzene	<0.220		0.500	0.220	ug/L			05/09/24 21:14	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/09/24 21:14	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/09/24 21:14	1
Bromoform	<0.780		5.00	0.780	ug/L			05/09/24 21:14	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/09/24 21:14	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/09/24 21:14	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/09/24 21:14	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/09/24 21:14	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/09/24 21:14	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/09/24 21:14	1
Chloroform	<1.30		3.00	1.30	ug/L			05/09/24 21:14	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/09/24 21:14	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/09/24 21:14	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/09/24 21:14	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/09/24 21:14	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/09/24 21:14	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/09/24 21:14	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/09/24 21:14	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/09/24 21:14	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/09/24 21:14	1
Styrene	<0.370		1.00	0.370	ug/L			05/09/24 21:14	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/09/24 21:14	1
Toluene	<0.430		1.00	0.430	ug/L			05/09/24 21:14	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/09/24 21:14	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/09/24 21:14	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/09/24 21:14	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/09/24 21:14	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/09/24 21:14	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/09/24 21:14	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/09/24 21:14	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-421148/5
Matrix: Water
Analysis Batch: 421148

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/09/24 21:14	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*118*		*73 - 130*		*05/09/24 21:14*	*1*
Toluene-d8 (Surr)	*95*		*80 - 120*		*05/09/24 21:14*	*1*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*		*05/09/24 21:14*	*1*

Lab Sample ID: LCS 310-421148/6
Matrix: Water
Analysis Batch: 421148

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	20.0	19.23		ug/L		96	71 - 120
1,1,1-Trichloroethane	20.0	21.69		ug/L		108	73 - 129
1,1,2,2-Tetrachloroethane	20.0	17.83		ug/L		89	68 - 124
1,1,2-Trichloroethane	20.0	19.30		ug/L		97	73 - 123
1,1-Dichloroethane	20.0	20.27		ug/L		101	70 - 127
1,1-Dichloroethene	20.0	19.92		ug/L		100	63 - 132
1,2,3-Trichloropropane	20.0	18.01		ug/L		90	65 - 127
1,2-Dibromo-3-Chloropropane	20.0	17.36		ug/L		87	50 - 150
1,2-Dibromoethane (EDB)	20.0	18.98		ug/L		95	75 - 125
1,2-Dichlorobenzene	20.0	18.12		ug/L		91	74 - 120
1,2-Dichloroethane	20.0	21.03		ug/L		105	71 - 125
1,2-Dichloropropane	20.0	21.15		ug/L		106	73 - 124
1,4-Dichlorobenzene	20.0	17.98		ug/L		90	72 - 120
2-Butanone (MEK)	40.0	40.93		ug/L		102	50 - 150
2-Hexanone	40.0	33.93		ug/L		85	60 - 140
4-Methyl-2-pentanone (MIBK)	40.0	34.89		ug/L		87	60 - 139
Acetone	40.0	35.09		ug/L		88	50 - 150
Acrylonitrile	200	200.9		ug/L		100	50 - 150
Benzene	20.0	20.60		ug/L		103	72 - 124
Bromochloromethane	20.0	20.67		ug/L		103	73 - 130
Bromodichloromethane	20.0	19.91		ug/L		100	74 - 122
Bromoform	20.0	17.93		ug/L		90	61 - 122
Carbon disulfide	20.0	19.47		ug/L		97	59 - 135
Carbon tetrachloride	20.0	24.89		ug/L		124	67 - 132
Chlorobenzene	20.0	18.55		ug/L		93	76 - 120
Chlorodibromomethane	20.0	18.74		ug/L		94	71 - 121
Chloroform	20.0	21.39		ug/L		107	72 - 125
cis-1,2-Dichloroethene	20.0	20.11		ug/L		101	74 - 123
cis-1,3-Dichloropropene	20.0	18.71		ug/L		94	71 - 125
Dibromomethane	20.0	20.32		ug/L		102	74 - 125
Ethylbenzene	20.0	18.76		ug/L		94	74 - 122
Iodomethane	20.0	17.20		ug/L		86	10 - 150
Methylene Chloride	20.0	20.18		ug/L		101	50 - 150
Styrene	20.0	18.61		ug/L		93	74 - 121
Tetrachloroethene	20.0	19.64		ug/L		98	71 - 130
Toluene	20.0	17.70		ug/L		88	74 - 123

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-421148/6
Matrix: Water
Analysis Batch: 421148

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
trans-1,2-Dichloroethene	20.0	20.18		ug/L		101	70 - 126
trans-1,3-Dichloropropene	20.0	19.44		ug/L		97	69 - 123
trans-1,4-Dichloro-2-butene	20.0	12.98		ug/L		65	50 - 150
Trichloroethene	20.0	21.02		ug/L		105	72 - 126
Vinyl acetate	40.0	40.95		ug/L		102	50 - 150
Xylenes, Total	40.0	37.34		ug/L		93	73 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*105*		*73 - 130*
Toluene-d8 (Surr)	*96*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*

Lab Sample ID: LCS 310-421148/7
Matrix: Water
Analysis Batch: 421148

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	20.34		ug/L		102	23 - 150
Chloroethane	20.0	22.97		ug/L		115	54 - 136
Chloromethane	20.0	21.02		ug/L		105	38 - 150
Trichlorofluoromethane	20.0	25.76		ug/L		129	54 - 149
Vinyl chloride	20.0	23.23		ug/L		116	56 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*122*		*73 - 130*
Toluene-d8 (Surr)	*95*		*80 - 120*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*

Lab Sample ID: MB 310-421151/5
Matrix: Water
Analysis Batch: 421151

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/10/24 08:13	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/10/24 08:13	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/10/24 08:13	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/10/24 08:13	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/10/24 08:13	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/10/24 08:13	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/10/24 08:13	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/10/24 08:13	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/10/24 08:13	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/10/24 08:13	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/10/24 08:13	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/10/24 08:13	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/10/24 08:13	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/10/24 08:13	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/10/24 08:13	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-421151/5
Matrix: Water
Analysis Batch: 421151

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/10/24 08:13	1
Acetone	<3.10		10.0	3.10	ug/L			05/10/24 08:13	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/10/24 08:13	1
Benzene	<0.220		0.500	0.220	ug/L			05/10/24 08:13	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/10/24 08:13	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/10/24 08:13	1
Bromoform	<0.780		5.00	0.780	ug/L			05/10/24 08:13	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/10/24 08:13	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/10/24 08:13	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/10/24 08:13	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/10/24 08:13	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/10/24 08:13	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/10/24 08:13	1
Chloroform	<1.30		3.00	1.30	ug/L			05/10/24 08:13	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/10/24 08:13	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/10/24 08:13	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/10/24 08:13	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/10/24 08:13	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/10/24 08:13	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/10/24 08:13	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/10/24 08:13	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/10/24 08:13	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/10/24 08:13	1
Styrene	<0.370		1.00	0.370	ug/L			05/10/24 08:13	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/10/24 08:13	1
Toluene	<0.430		1.00	0.430	ug/L			05/10/24 08:13	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/10/24 08:13	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/10/24 08:13	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/10/24 08:13	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/10/24 08:13	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/10/24 08:13	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/10/24 08:13	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/10/24 08:13	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/10/24 08:13	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*117*		*73 - 130*		*05/10/24 08:13*	*1*
Toluene-d8 (Surr)	*94*		*80 - 120*		*05/10/24 08:13*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*05/10/24 08:13*	*1*

Lab Sample ID: LCS 310-421151/6
Matrix: Water
Analysis Batch: 421151

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	20.0	18.39		ug/L		92	71 - 120
1,1,1-Trichloroethane	20.0	19.79		ug/L		99	73 - 129
1,1,2,2-Tetrachloroethane	20.0	17.53		ug/L		88	68 - 124

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-421151/6
Matrix: Water
Analysis Batch: 421151

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,2-Trichloroethane	20.0	18.65		ug/L		93	73 - 123
1,1-Dichloroethane	20.0	18.34		ug/L		92	70 - 127
1,1-Dichloroethene	20.0	18.45		ug/L		92	63 - 132
1,2,3-Trichloropropane	20.0	17.32		ug/L		87	65 - 127
1,2-Dibromo-3-Chloropropane	20.0	16.92		ug/L		85	50 - 150
1,2-Dibromoethane (EDB)	20.0	18.72		ug/L		94	75 - 125
1,2-Dichlorobenzene	20.0	16.90		ug/L		84	74 - 120
1,2-Dichloroethane	20.0	19.96		ug/L		100	71 - 125
1,2-Dichloropropane	20.0	20.13		ug/L		101	73 - 124
1,4-Dichlorobenzene	20.0	16.87		ug/L		84	72 - 120
2-Butanone (MEK)	40.0	38.41		ug/L		96	50 - 150
2-Hexanone	40.0	34.49		ug/L		86	60 - 140
4-Methyl-2-pentanone (MIBK)	40.0	34.86		ug/L		87	60 - 139
Acetone	40.0	37.64		ug/L		94	50 - 150
Acrylonitrile	200	195.8		ug/L		98	50 - 150
Benzene	20.0	18.84		ug/L		94	72 - 124
Bromochloromethane	20.0	19.58		ug/L		98	73 - 130
Bromodichloromethane	20.0	19.16		ug/L		96	74 - 122
Bromoform	20.0	17.83		ug/L		89	61 - 122
Carbon disulfide	20.0	17.41		ug/L		87	59 - 135
Carbon tetrachloride	20.0	22.71		ug/L		114	67 - 132
Chlorobenzene	20.0	17.09		ug/L		85	76 - 120
Chlorodibromomethane	20.0	18.49		ug/L		92	71 - 121
Chloroform	20.0	19.60		ug/L		98	72 - 125
cis-1,2-Dichloroethene	20.0	18.40		ug/L		92	74 - 123
cis-1,3-Dichloropropene	20.0	17.25		ug/L		86	71 - 125
Dibromomethane	20.0	19.54		ug/L		98	74 - 125
Ethylbenzene	20.0	17.32		ug/L		87	74 - 122
Iodomethane	20.0	16.94		ug/L		85	10 - 150
Methylene Chloride	20.0	19.00		ug/L		95	50 - 150
Styrene	20.0	17.30		ug/L		86	74 - 121
Tetrachloroethene	20.0	18.06		ug/L		90	71 - 130
Toluene	20.0	16.44		ug/L		82	74 - 123
trans-1,2-Dichloroethene	20.0	18.61		ug/L		93	70 - 126
trans-1,3-Dichloropropene	20.0	18.27		ug/L		91	69 - 123
trans-1,4-Dichloro-2-butene	20.0	16.12		ug/L		81	50 - 150
Trichloroethene	20.0	19.49		ug/L		97	72 - 126
Vinyl acetate	40.0	36.96		ug/L		92	50 - 150
Xylenes, Total	40.0	34.56		ug/L		86	73 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*104*		*73 - 130*
Toluene-d8 (Surr)	*96*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-421151/7
Matrix: Water
Analysis Batch: 421151

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Bromomethane			20.0	17.42		ug/L		87	23 - 150		
Chloroethane			20.0	19.06		ug/L		95	54 - 136		
Chloromethane			20.0	18.62		ug/L		93	38 - 150		
Trichlorofluoromethane			20.0	20.71		ug/L		104	54 - 149		
Vinyl chloride			20.0	19.50		ug/L		98	56 - 140		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*122*		*73 - 130*
Toluene-d8 (Surr)	*94*		*80 - 120*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*

Lab Sample ID: 310-280571-3 MS
Matrix: Ground Water
Analysis Batch: 421151

Client Sample ID: OW-213BR
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
1,1,1,2-Tetrachloroethane	<0.380		20.0	14.99		ug/L		75	55 - 130		
1,1,1-Trichloroethane	<0.190		20.0	16.21		ug/L		81	52 - 130		
1,1,2,2-Tetrachloroethane	<0.470		20.0	15.17		ug/L		76	54 - 130		
1,1,2-Trichloroethane	<0.450		20.0	16.36		ug/L		82	58 - 130		
1,1-Dichloroethane	<0.220		20.0	17.40		ug/L		87	49 - 130		
1,1-Dichloroethene	<0.560		20.0	16.16		ug/L		81	37 - 132		
1,2,3-Trichloropropane	<0.590		20.0	15.25		ug/L		76	49 - 130		
1,2-Dibromo-3-Chloropropane	<1.20		20.0	13.03		ug/L		65	38 - 150		
1,2-Dibromoethane (EDB)	<0.340		20.0	16.42		ug/L		82	60 - 130		
1,2-Dichlorobenzene	<0.370		20.0	13.58		ug/L		68	59 - 130		
1,2-Dichloroethane	<0.390		20.0	18.09		ug/L		90	51 - 130		
1,2-Dichloropropane	<0.270		20.0	17.92		ug/L		90	57 - 130		
1,4-Dichlorobenzene	<0.230		20.0	13.42		ug/L		67	57 - 130		
2-Butanone (MEK)	<2.10		40.0	33.76		ug/L		84	38 - 150		
2-Hexanone	<2.00		40.0	30.05		ug/L		75	46 - 140		
4-Methyl-2-pentanone (MIBK)	<2.10		40.0	30.95		ug/L		77	47 - 139		
Acetone	<3.10		40.0	33.43		ug/L		84	31 - 150		
Acrylonitrile	<2.20		200	177.7		ug/L		89	40 - 150		
Benzene	0.294	J	20.0	17.86		ug/L		88	46 - 130		
Bromochloromethane	<0.540		20.0	18.19		ug/L		91	57 - 130		
Bromodichloromethane	<0.390		20.0	16.71		ug/L		84	57 - 130		
Bromoform	<0.780		20.0	13.98		ug/L		70	44 - 130		
Carbon disulfide	<0.450		20.0	15.27		ug/L		76	38 - 135		
Carbon tetrachloride	<0.650		20.0	17.03		ug/L		85	45 - 132		
Chlorobenzene	<0.400		20.0	14.60		ug/L		73	59 - 130		
Chlorodibromomethane	<0.750		20.0	14.96		ug/L		75	54 - 130		
Chloroform	<1.30		20.0	17.23		ug/L		86	51 - 130		
cis-1,2-Dichloroethene	0.404	J	20.0	17.72		ug/L		87	45 - 130		
cis-1,3-Dichloropropene	<0.250		20.0	14.59		ug/L		73	53 - 130		
Dibromomethane	<0.330		20.0	17.78		ug/L		89	59 - 130		
Ethylbenzene	<0.310		20.0	16.77		ug/L		84	45 - 130		
Iodomethane	<7.00		20.0	17.08		ug/L		85	10 - 150		

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 310-280571-3 MS
Matrix: Ground Water
Analysis Batch: 421151

Client Sample ID: OW-213BR
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Methylene Chloride	<1.70		20.0	17.74		ug/L		89	37 - 150
Styrene	<0.370		20.0	14.59		ug/L		73	47 - 130
Tetrachloroethene	<0.480		20.0	13.28		ug/L		66	47 - 130
Toluene	<0.430		20.0	17.03		ug/L		85	51 - 130
trans-1,2-Dichloroethene	<0.270		20.0	17.04		ug/L		85	48 - 130
trans-1,3-Dichloropropene	<0.560		20.0	15.30		ug/L		77	50 - 130
trans-1,4-Dichloro-2-butene	<1.10		20.0	11.13		ug/L		56	26 - 150
Trichloroethene	<0.430		20.0	16.40		ug/L		82	51 - 130
Vinyl acetate	<2.50		40.0	32.16		ug/L		80	29 - 150
Xylenes, Total	<0.400	F2	40.0	41.52		ug/L		104	43 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*105*		*73 - 130*
Toluene-d8 (Surr)	*96*		*80 - 120*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*

Lab Sample ID: 310-280571-3 MSD
Matrix: Ground Water
Analysis Batch: 421151

Client Sample ID: OW-213BR
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	<0.380		20.0	14.84		ug/L		74	55 - 130	1	20
1,1,1-Trichloroethane	<0.190		20.0	16.50		ug/L		82	52 - 130	2	20
1,1,2,2-Tetrachloroethane	<0.470		20.0	15.15		ug/L		76	54 - 130	0	20
1,1,2-Trichloroethane	<0.450		20.0	16.30		ug/L		81	58 - 130	0	20
1,1-Dichloroethane	<0.220		20.0	17.69		ug/L		88	49 - 130	2	20
1,1-Dichloroethene	<0.560		20.0	16.09		ug/L		80	37 - 132	0	26
1,2,3-Trichloropropane	<0.590		20.0	15.69		ug/L		78	49 - 130	3	26
1,2-Dibromo-3-Chloropropane	<1.20		20.0	14.08		ug/L		70	38 - 150	8	20
1,2-Dibromoethane (EDB)	<0.340		20.0	16.11		ug/L		81	60 - 130	2	20
1,2-Dichlorobenzene	<0.370		20.0	14.11		ug/L		71	59 - 130	4	20
1,2-Dichloroethane	<0.390		20.0	18.46		ug/L		92	51 - 130	2	20
1,2-Dichloropropane	<0.270		20.0	18.52		ug/L		93	57 - 130	3	20
1,4-Dichlorobenzene	<0.230		20.0	13.86		ug/L		69	57 - 130	3	20
2-Butanone (MEK)	<2.10		40.0	34.82		ug/L		87	38 - 150	3	20
2-Hexanone	<2.00		40.0	31.38		ug/L		78	46 - 140	4	20
4-Methyl-2-pentanone (MIBK)	<2.10		40.0	31.26		ug/L		78	47 - 139	1	20
Acetone	<3.10		40.0	37.01		ug/L		93	31 - 150	10	29
Acrylonitrile	<2.20		200	185.2		ug/L		93	40 - 150	4	20
Benzene	0.294	J	20.0	17.80		ug/L		88	46 - 130	0	20
Bromochloromethane	<0.540		20.0	18.15		ug/L		91	57 - 130	0	20
Bromodichloromethane	<0.390		20.0	16.87		ug/L		84	57 - 130	1	20
Bromoform	<0.780		20.0	14.29		ug/L		71	44 - 130	2	20
Carbon disulfide	<0.450		20.0	14.82		ug/L		74	38 - 135	3	30
Carbon tetrachloride	<0.650		20.0	17.62		ug/L		88	45 - 132	3	20
Chlorobenzene	<0.400		20.0	14.42		ug/L		72	59 - 130	1	20
Chlorodibromomethane	<0.750		20.0	15.24		ug/L		76	54 - 130	2	20
Chloroform	<1.30		20.0	17.69		ug/L		88	51 - 130	3	20

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 310-280571-3 MSD
Matrix: Ground Water
Analysis Batch: 421151

Client Sample ID: OW-213BR
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
cis-1,2-Dichloroethene	0.404	J	20.0	17.95		ug/L		88	45 - 130	1	20
cis-1,3-Dichloropropene	<0.250		20.0	14.58		ug/L		73	53 - 130	0	20
Dibromomethane	<0.330		20.0	18.15		ug/L		91	59 - 130	2	20
Ethylbenzene	<0.310		20.0	14.42		ug/L		72	45 - 130	15	20
Iodomethane	<7.00		20.0	17.64		ug/L		88	10 - 150	3	35
Methylene Chloride	<1.70		20.0	17.83		ug/L		89	37 - 150	1	24
Styrene	<0.370		20.0	14.49		ug/L		72	47 - 130	1	20
Tetrachloroethene	<0.480		20.0	13.64		ug/L		68	47 - 130	3	20
Toluene	<0.430		20.0	14.90		ug/L		75	51 - 130	13	20
trans-1,2-Dichloroethene	<0.270		20.0	17.00		ug/L		85	48 - 130	0	22
trans-1,3-Dichloropropene	<0.560		20.0	15.73		ug/L		79	50 - 130	3	20
trans-1,4-Dichloro-2-butene	<1.10		20.0	12.70		ug/L		64	26 - 150	13	23
Trichloroethene	<0.430		20.0	16.31		ug/L		82	51 - 130	1	20
Vinyl acetate	<2.50		40.0	31.60		ug/L		79	29 - 150	2	23
Xylenes, Total	<0.400	F2	40.0	30.12	F2	ug/L		75	43 - 130	32	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*106*		*73 - 130*
Toluene-d8 (Surr)	*95*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-420919/1-A
Matrix: Water
Analysis Batch: 421266

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 420919

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		05/08/24 09:00	05/09/24 18:37	1
Arsenic	<0.530		2.00	0.530	ug/L		05/08/24 09:00	05/09/24 18:37	1
Barium	<0.660		2.00	0.660	ug/L		05/08/24 09:00	05/09/24 18:37	1
Beryllium	<0.330		1.00	0.330	ug/L		05/08/24 09:00	05/09/24 18:37	1
Cadmium	<0.100		0.200	0.100	ug/L		05/08/24 09:00	05/09/24 18:37	1
Chromium	<1.20		5.00	1.20	ug/L		05/08/24 09:00	05/09/24 18:37	1
Cobalt	<0.170		0.500	0.170	ug/L		05/08/24 09:00	05/09/24 18:37	1
Copper	<1.80		5.00	1.80	ug/L		05/08/24 09:00	05/09/24 18:37	1
Lead	<0.260		0.500	0.260	ug/L		05/08/24 09:00	05/09/24 18:37	1
Nickel	<2.10		5.00	2.10	ug/L		05/08/24 09:00	05/09/24 18:37	1
Selenium	<1.40		5.00	1.40	ug/L		05/08/24 09:00	05/09/24 18:37	1
Silver	<0.500		1.00	0.500	ug/L		05/08/24 09:00	05/09/24 18:37	1
Thallium	<0.570		1.00	0.570	ug/L		05/08/24 09:00	05/09/24 18:37	1
Vanadium	<1.10		5.00	1.10	ug/L		05/08/24 09:00	05/09/24 18:37	1
Zinc	<9.70		20.0	9.70	ug/L		05/08/24 09:00	05/09/24 18:37	1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 310-420919/2-A
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 421266
Prep Batch: 420919

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	200	216.6		ug/L		108	80 - 120
Arsenic	200	209.6		ug/L		105	80 - 120
Barium	100	110.5		ug/L		111	80 - 120
Beryllium	100	97.70		ug/L		98	80 - 120
Cadmium	100	101.7		ug/L		102	80 - 120
Chromium	100	95.63		ug/L		96	80 - 120
Cobalt	100	107.5		ug/L		107	80 - 120
Copper	200	211.5		ug/L		106	80 - 120
Lead	200	212.2		ug/L		106	80 - 120
Nickel	200	206.6		ug/L		103	80 - 120
Selenium	400	396.8		ug/L		99	80 - 120
Silver	100	107.9		ug/L		108	80 - 120
Thallium	100	113.2		ug/L		113	80 - 120
Vanadium	100	96.84		ug/L		97	80 - 120
Zinc	200	193.6		ug/L		97	80 - 120

Lab Sample ID: 310-280571-1 MS
Client Sample ID: OW-209B
Matrix: Ground Water
Prep Type: Total/NA
Analysis Batch: 421266
Prep Batch: 420919

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	<1.00		200	217.6		ug/L		109	75 - 125
Arsenic	<0.530		200	210.3		ug/L		105	75 - 125
Barium	55.3		100	165.8		ug/L		111	75 - 125
Beryllium	<0.330		100	100.6		ug/L		101	75 - 125
Cadmium	0.105	J	100	99.48		ug/L		99	75 - 125
Chromium	<1.20		100	93.76		ug/L		94	75 - 125
Cobalt	0.475	J	100	103.7		ug/L		103	75 - 125
Copper	4.73	J	200	209.9		ug/L		103	75 - 125
Lead	<0.260		200	205.0		ug/L		102	75 - 125
Nickel	6.86		200	206.4		ug/L		100	75 - 125
Selenium	<1.40		400	402.3		ug/L		101	75 - 125
Silver	<0.500		100	105.9		ug/L		106	75 - 125
Thallium	<0.570		100	108.0		ug/L		108	75 - 125
Vanadium	<1.10		100	99.43		ug/L		99	75 - 125
Zinc	<9.70		200	196.3		ug/L		98	75 - 125

Lab Sample ID: 310-280571-1 MSD
Client Sample ID: OW-209B
Matrix: Ground Water
Prep Type: Total/NA
Analysis Batch: 421266
Prep Batch: 420919

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Antimony	<1.00		200	215.1		ug/L		108	75 - 125	1	20
Arsenic	<0.530		200	207.4		ug/L		104	75 - 125	1	20
Barium	55.3		100	163.9		ug/L		109	75 - 125	1	20
Beryllium	<0.330		100	100.8		ug/L		101	75 - 125	0	20
Cadmium	0.105	J	100	99.18		ug/L		99	75 - 125	0	20
Chromium	<1.20		100	92.27		ug/L		92	75 - 125	2	20
Cobalt	0.475	J	100	100.8		ug/L		100	75 - 125	3	20

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: 310-280571-1 MSD — **Client Sample ID: OW-209B**
Matrix: Ground Water — **Prep Type: Total/NA**
Analysis Batch: 421266 — **Prep Batch: 420919**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Copper	4.73	J	200	205.1		ug/L		100	75 - 125	2	20
Lead	<0.260		200	202.1		ug/L		101	75 - 125	1	20
Nickel	6.86		200	202.7		ug/L		98	75 - 125	2	20
Selenium	<1.40		400	395.9		ug/L		99	75 - 125	2	20
Silver	<0.500		100	104.9		ug/L		105	75 - 125	1	20
Thallium	<0.570		100	108.7		ug/L		109	75 - 125	1	20
Vanadium	<1.10		100	99.71		ug/L		100	75 - 125	0	20
Zinc	<9.70		200	195.2		ug/L		98	75 - 125	1	20

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: MB 310-420933/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 420933

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<3.70		5.00	3.70	mg/L			05/07/24 18:56	1

Lab Sample ID: LCS 310-420933/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 420933

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	93.00		mg/L		93	75 - 116

Lab Sample ID: MB 310-421197/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 421197

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<3.70		5.00	3.70	mg/L			05/09/24 14:03	1

Lab Sample ID: LCS 310-421197/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 421197

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	98.00		mg/L		98	75 - 116

GC/MS VOA

Analysis Batch: 421148

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280571-1	OW-209B	Total/NA	Ground Water	8260D	
310-280571-2	OW-212B	Total/NA	Ground Water	8260D	
MB 310-421148/5	Method Blank	Total/NA	Water	8260D	
LCS 310-421148/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-421148/7	Lab Control Sample	Total/NA	Water	8260D	

Analysis Batch: 421151

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280571-3	OW-213BR	Total/NA	Ground Water	8260D	
310-280571-4	OW-219B	Total/NA	Ground Water	8260D	
310-280571-5	OW-219B-FD	Total/NA	Ground Water	8260D	
310-280571-6	Trip Blank	Total/NA	Water	8260D	
310-280571-7	Equipment Blank-1	Total/NA	Ground Water	8260D	
MB 310-421151/5	Method Blank	Total/NA	Water	8260D	
LCS 310-421151/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-421151/7	Lab Control Sample	Total/NA	Water	8260D	
310-280571-3 MS	OW-213BR	Total/NA	Ground Water	8260D	
310-280571-3 MSD	OW-213BR	Total/NA	Ground Water	8260D	

Metals

Prep Batch: 420919

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280571-1	OW-209B	Total/NA	Ground Water	3005A	
310-280571-2	OW-212B	Total/NA	Ground Water	3005A	
310-280571-3	OW-213BR	Total/NA	Ground Water	3005A	
310-280571-4	OW-219B	Total/NA	Ground Water	3005A	
310-280571-5	OW-219B-FD	Total/NA	Ground Water	3005A	
310-280571-7	Equipment Blank-1	Total/NA	Ground Water	3005A	
MB 310-420919/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-420919/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-280571-1 MS	OW-209B	Total/NA	Ground Water	3005A	
310-280571-1 MSD	OW-209B	Total/NA	Ground Water	3005A	

Analysis Batch: 421266

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280571-1	OW-209B	Total/NA	Ground Water	6020B	420919
310-280571-2	OW-212B	Total/NA	Ground Water	6020B	420919
310-280571-3	OW-213BR	Total/NA	Ground Water	6020B	420919
310-280571-4	OW-219B	Total/NA	Ground Water	6020B	420919
310-280571-5	OW-219B-FD	Total/NA	Ground Water	6020B	420919
310-280571-7	Equipment Blank-1	Total/NA	Ground Water	6020B	420919
MB 310-420919/1-A	Method Blank	Total/NA	Water	6020B	420919
LCS 310-420919/2-A	Lab Control Sample	Total/NA	Water	6020B	420919
310-280571-1 MS	OW-209B	Total/NA	Ground Water	6020B	420919
310-280571-1 MSD	OW-209B	Total/NA	Ground Water	6020B	420919

General Chemistry

Analysis Batch: 420933

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280571-3	OW-213BR	Total/NA	Ground Water	I-3765-85	

General Chemistry (Continued)

Analysis Batch: 420933 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 310-420933/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-420933/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Analysis Batch: 421197

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280571-1	OW-209B	Total/NA	Ground Water	I-3765-85	
310-280571-2	OW-212B	Total/NA	Ground Water	I-3765-85	
310-280571-4	OW-219B	Total/NA	Ground Water	I-3765-85	
310-280571-5	OW-219B-FD	Total/NA	Ground Water	I-3765-85	
310-280571-7	Equipment Blank-1	Total/NA	Ground Water	I-3765-85	
MB 310-421197/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-421197/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Field Service / Mobile Lab

Analysis Batch: 421742

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280571-1	OW-209B	Total/NA	Ground Water	Field Sampling	
310-280571-2	OW-212B	Total/NA	Ground Water	Field Sampling	
310-280571-3	OW-213BR	Total/NA	Ground Water	Field Sampling	
310-280571-4	OW-219B	Total/NA	Ground Water	Field Sampling	

Lab Chronicle

Client: AECOM
Job ID: 310-280571-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-209B
Lab Sample ID: 310-280571-1
Date Collected: 05/06/24 12:20
Matrix: Ground Water
Date Received: 05/07/24 11:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	421148	FE5V	EET CF	05/10/24 03:41
Total/NA	Prep	3005A			420919	KM3E	EET CF	05/08/24 09:00
Total/NA	Analysis	6020B		1	421266	NFT2	EET CF	05/09/24 18:42
Total/NA	Analysis	I-3765-85		1	421197	DGU1	EET CF	05/09/24 14:03
Total/NA	Analysis	Field Sampling		1	421742	BJ0R	EET CF	05/06/24 12:20

Client Sample ID: OW-212B
Lab Sample ID: 310-280571-2
Date Collected: 05/06/24 13:30
Matrix: Ground Water
Date Received: 05/07/24 11:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	421148	FE5V	EET CF	05/10/24 04:03
Total/NA	Prep	3005A			420919	KM3E	EET CF	05/08/24 09:00
Total/NA	Analysis	6020B		1	421266	NFT2	EET CF	05/09/24 19:01
Total/NA	Analysis	I-3765-85		1	421197	DGU1	EET CF	05/09/24 14:03
Total/NA	Analysis	Field Sampling		1	421742	BJ0R	EET CF	05/06/24 13:30

Client Sample ID: OW-213BR
Lab Sample ID: 310-280571-3
Date Collected: 05/06/24 16:00
Matrix: Ground Water
Date Received: 05/07/24 11:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	421151	FE5V	EET CF	05/10/24 10:07
Total/NA	Prep	3005A			420919	KM3E	EET CF	05/08/24 09:00
Total/NA	Analysis	6020B		1	421266	NFT2	EET CF	05/09/24 19:03
Total/NA	Analysis	I-3765-85		1	420933	A4XP	EET CF	05/07/24 18:56
Total/NA	Analysis	Field Sampling		1	421742	BJ0R	EET CF	05/06/24 16:00

Client Sample ID: OW-219B
Lab Sample ID: 310-280571-4
Date Collected: 05/06/24 14:45
Matrix: Ground Water
Date Received: 05/07/24 11:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	421151	FE5V	EET CF	05/10/24 10:30
Total/NA	Prep	3005A			420919	KM3E	EET CF	05/08/24 09:00
Total/NA	Analysis	6020B		1	421266	NFT2	EET CF	05/09/24 19:05
Total/NA	Analysis	I-3765-85		1	421197	DGU1	EET CF	05/09/24 14:03
Total/NA	Analysis	Field Sampling		1	421742	BJ0R	EET CF	05/06/24 14:45

Lab Chronicle

Client: AECOM
Job ID: 310-280571-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-219B-FD
Lab Sample ID: 310-280571-5

Date Collected: 05/06/24 14:45
Matrix: Ground Water
Date Received: 05/07/24 11:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	421151	FE5V	EET CF	05/10/24 10:53
Total/NA	Prep	3005A			420919	KM3E	EET CF	05/08/24 09:00
Total/NA	Analysis	6020B		1	421266	NFT2	EET CF	05/09/24 19:07
Total/NA	Analysis	I-3765-85		1	421197	DGU1	EET CF	05/09/24 14:03

Client Sample ID: Trip Blank
Lab Sample ID: 310-280571-6

Date Collected: 05/06/24 08:00
Matrix: Water
Date Received: 05/07/24 11:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	421151	FE5V	EET CF	05/10/24 09:22

Client Sample ID: Equipment Blank-1
Lab Sample ID: 310-280571-7

Date Collected: 05/06/24 15:00
Matrix: Ground Water
Date Received: 05/07/24 11:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	421151	FE5V	EET CF	05/10/24 11:16
Total/NA	Prep	3005A			420919	KM3E	EET CF	05/08/24 09:00
Total/NA	Analysis	6020B		1	421266	NFT2	EET CF	05/09/24 19:09
Total/NA	Analysis	I-3765-85		1	421197	DGU1	EET CF	05/09/24 14:03

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Accreditation/Certification Summary

Client: AECOM
Job ID: 310-280571-1
Project/Site: Black Hawk County Landfill (IDNR)

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8260D		Ground Water	m,p-Xylene
8260D		Ground Water	o-Xylene
8260D		Water	m,p-Xylene
8260D		Water	o-Xylene
Field Sampling		Ground Water	Field Turbidity

Method Summary

Client: AECOM
Job ID: 310-280571-1
Project/Site: Black Hawk County Landfill (IDNR)

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
Field Sampling	Field Sampling	EPA	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
5030B	Purge and Trap	SW846	EET CF

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

eurofins | Environment Testing America

310-280571 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: ACCOM

City/State: CITY | STATE TA | Project:

Receipt Information

Date/Time Received: DATE 5/7/24 | TIME 1145 | Received By: N

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☐ Lab Courier ☐ Lab Field Services ☒ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☒ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☐ Yes ☒ No *If yes:* Cooler # _____ of _____

Cooler Custody Seals Present? ☐ Yes ☒ No *If yes.* Cooler custody seals intact? ☐ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☒ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☐ Yes ☒ No *If yes:* Which VOA samples are in cooler? ↓

AM

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: P | Correction Factor (°C): +0.0

• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 0.6 | Corrected Temp (°C): 0.6

• Sample Container Temperature

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE If yes, contact PM before proceeding If no, proceed with login

Additional Comments

Eurofins Cedar Falls
3019 Venture Way

Cedar Falls, IA 50613
phone 319.277 2401 fax 319.277 2425

Chain of Custody Record

eurofins Environment Testing America

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other IDNR

Eurofins Environment Testing America

Client Contact	Project Manager: Chris Oelkers	Site Contact:	Date: 5-7-24	COC No
AECOM	Email Christopher Oelkers@aecom com	Lab Contact:	Carrier:	1 of 1 COCs
501 Sycamore Street, Suite 222	Tel/Fax:319-296-6878			TALS Project #
Waterloo, IA 50703	Analysis Turnaround Time			Sampler
(319) 232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(xxx) xxx-xxxx FAX	TAT if different from Below ____			Walk-in Client
Project Name Black Hawk Co IDNR	☑ 2 weeks			Lab Sampling
Site Black Hawk County Landfill	☐ 1 week			Job / SDG No
P O #	☐ 2 days ☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Appendix I, TSS	Appendix II, TSS	2,4-D	4,4'-DDD	beta-BHC	delta BHC	Endosulfan I	Endosulfan sulfate	Endrin aldehyde	Silvex	Sulfide	Sample Specific Notes
OW-101B			G	GW		N		X											
OW-105B			G	GW		N		X											
OW-113B			G	GW		N		X										X	
OW-114B			G	GW		N		X											
OW-205B			G	GW		N		X			X			X				X	
OW-209B	5-6-24	1220	G	GW	5	N		X											Turbidity - 2.28 NTU
OW-212B	5-6-24	1330	G	GW	5	N		X											Turbidity - 6.46 NTU
OW-213BR	5-6-24	1600	G	GW	5	N		X											Turbidity - 2.49 NTU
OW-216BR			G	GW		N		X											
OW-219B	5-6-24	1445	G	GW	5	N		X											Turbidity - 3.31 NTU
OW-219B-FD	5-6-24	1445	G	GW	5	N		X											
Trip Blank	5-6-24	0500	G	W	2	N		X											

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for ____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No | Cooler Temp (°C) Obs'd.____ Corr'd ____ | Therm ID No ____

Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Ben Porter	Aecom	5-7-24			
Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Relinquished by	Company	Date/Time	Received in Laboratory by: CC 5-7-24 1145	Company	Date/Time

5/15/2024

Eurofins Cedar Falls
3019 Venture Way

Cedar Falls, IA 50613
phone 319 277.2401 fax 319.277.2425

Chain of Custody Record

eurofins Environment Testing America

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other IDNR

Eurofins Environment Testing America

Client Contact	**Project Manager: Chris Oelkers**	COC No
AECOM	Email Christopher Oelkers@aecom.com	2 of 2 COCs
501 Sycamore Street, Suite 222	**Tel/Fax:319-296-6878**	TALS Project #
Waterloo, IA 50703	**Analysis Turnaround Time**	Sampler
(319) 232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS	**For Lab Use Only:**
(xxx) xxx-xxxx FAX	TAT if different from Below ____	Walk-in Client:
Project Name Black Hawk Co IDNR	☑ 2 weeks	Lab Sampling
Site Black Hawk County Landfill	☐ 1 week	Job / SDG No
P O #	☐ 2 days ☐ 1 day	

Site Contact: **Date:** 5-7-24
Lab Contact: **Carrier:**

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Appendix I, TSS	Appendix II, TSS	2,4-D	4,4'-DDD	beta-BHC	delta BHC	Endosulfan I	Endosulfan sulfate	Endrin aldehyde	Silvex	Sulfide	Sample Specific Notes
OW-220B			G	GW		N		X		X							X		
OW-221B			G	GW		N		X											
OW-222B			G	GW		N		X											
OW-223B			G	GW		N		X											
OW-224B			G	GW		N		X											
OW-225B			G	GW		N		X											
OW-226B			G	GW		N		X										X	
OW-227B			G	GW		N		X										X	
MW-319B			G	GW		N		X											
MW-320B			G	GW		N		X											
Equipment Blank-1	5-6-24	1500	G	GW	5	N		X											
MW-319B-FD			G	GW		N		X											

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for ____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No | Cooler Temp (°C) Obs'd.____ Corr'd.____ Therm ID No .____

Relinquished by: Ben Porter	Company: Aecom	Date/Time 5-7-24	Received by:	Company:	Date/Time
Relinquished by:	Company:	Date/Time	Received by:	Company:	Date/Time
Relinquished by:	Company:	Date/Time	Received in Laboratory by: CC 5-7-24 1145	Company:	Date/Time

5/15/2024

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-280571-1

Login Number: 280571

List Number: 1

Creator: Homolar, Dana J

List Source: Eurofins Cedar Falls

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Chris Oelkers
AECOM
501 Sycamore Street
Suite #222
Waterloo, Iowa 50703

Generated 5/17/2024 9:14:26 AM

JOB DESCRIPTION

Black Hawk County Landfill (IDNR)
Spring 2024

JOB NUMBER

310-280664-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



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5/17/2024 9:14:26 AM

Authorized for release by
Zach Bindert, Client Service Manager
Zach.Bindert@et.eurofinsus.com
(319)277-2401

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Job Narrative
310-280664-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 5/8/2024 9:05 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.4°C.

GC/MS VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Field Service / Mobile Lab
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Sample Summary

Client: AECOM
Job ID: 310-280664-1
Project/Site: Black Hawk County Landfill (IDNR)

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-280664-1	GUE-2	Water	05/07/24 13:00	05/08/24 09:05
310-280664-2	OW-105B	Water	05/07/24 14:45	05/08/24 09:05
310-280664-3	Trip Blank	Water	05/07/24 06:00	05/08/24 09:05

Detection Summary

Client: AECOM
Job ID: 310-280664-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: GUE-2
Lab Sample ID: 310-280664-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	0.474	J	1.00	0.220	ug/L	1		8260D	Total/NA
1,4-Dichlorobenzene	0.378	J	1.00	0.230	ug/L	1		8260D	Total/NA
Acetone	6.25	J	10.0	3.10	ug/L	1		8260D	Total/NA
Benzene	1.27		0.500	0.220	ug/L	1		8260D	Total/NA
cis-1,2-Dichloroethene	2.92		1.00	0.210	ug/L	1		8260D	Total/NA
trans-1,2-Dichloroethene	0.278	J	1.00	0.270	ug/L	1		8260D	Total/NA
Trichloroethene	0.596	J	1.00	0.430	ug/L	1		8260D	Total/NA
Vinyl chloride	0.552	J	1.00	0.180	ug/L	1		8260D	Total/NA
Arsenic	3.04		2.00	0.530	ug/L	1		6020B	Total/NA
Barium	571		2.00	0.660	ug/L	1		6020B	Total/NA
Chromium	3.02	J	5.00	1.20	ug/L	1		6020B	Total/NA
Cobalt	2.84		0.500	0.170	ug/L	1		6020B	Total/NA
Nickel	29.7		5.00	2.10	ug/L	1		6020B	Total/NA
Vanadium	1.19	J	5.00	1.10	ug/L	1		6020B	Total/NA
Total Suspended Solids	31.0		15.0	11.1	mg/L	1		I-3765-85	Total/NA
Field Turbidity	11.73				NTU	1		Field Sampling	Total/NA

Client Sample ID: OW-105B
Lab Sample ID: 310-280664-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	79.9		2.00	0.660	ug/L	1		6020B	Total/NA
Chromium	4.38	J	5.00	1.20	ug/L	1		6020B	Total/NA
Field Turbidity	4.15				NTU	1		Field Sampling	Total/NA

Client Sample ID: Trip Blank
Lab Sample ID: 310-280664-3

No Detections.

This Detection Summary does not include radiochemical test results.

Client: AECOM
Job ID: 310-280664-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: GUE-2
Lab Sample ID: 310-280664-1
Date Collected: 05/07/24 13:00
Matrix: Water
Date Received: 05/08/24 09:05

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/15/24 00:42	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/15/24 00:42	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/15/24 00:42	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/15/24 00:42	1
1,1-Dichloroethane	**0.474**	**J**	1.00	0.220	ug/L			05/15/24 00:42	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/15/24 00:42	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/15/24 00:42	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/15/24 00:42	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/15/24 00:42	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/15/24 00:42	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/15/24 00:42	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/15/24 00:42	1
1,4-Dichlorobenzene	**0.378**	**J**	1.00	0.230	ug/L			05/15/24 00:42	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/15/24 00:42	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/15/24 00:42	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/15/24 00:42	1
Acetone	**6.25**	**J**	10.0	3.10	ug/L			05/15/24 00:42	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/15/24 00:42	1
Benzene	**1.27**		0.500	0.220	ug/L			05/15/24 00:42	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/15/24 00:42	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/15/24 00:42	1
Bromoform	<0.780		5.00	0.780	ug/L			05/15/24 00:42	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/15/24 00:42	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/15/24 00:42	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/15/24 00:42	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/15/24 00:42	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/15/24 00:42	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/15/24 00:42	1
Chloroform	<1.30		3.00	1.30	ug/L			05/15/24 00:42	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/15/24 00:42	1
cis-1,2-Dichloroethene	**2.92**		1.00	0.210	ug/L			05/15/24 00:42	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/15/24 00:42	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/15/24 00:42	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/15/24 00:42	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/15/24 00:42	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/15/24 00:42	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/15/24 00:42	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/15/24 00:42	1
Styrene	<0.370		1.00	0.370	ug/L			05/15/24 00:42	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/15/24 00:42	1
Toluene	<0.430		1.00	0.430	ug/L			05/15/24 00:42	1
trans-1,2-Dichloroethene	**0.278**	**J**	1.00	0.270	ug/L			05/15/24 00:42	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/15/24 00:42	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/15/24 00:42	1
Trichloroethene	**0.596**	**J**	1.00	0.430	ug/L			05/15/24 00:42	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/15/24 00:42	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/15/24 00:42	1
Vinyl chloride	**0.552**	**J**	1.00	0.180	ug/L			05/15/24 00:42	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/15/24 00:42	1

Client: AECOM
Job ID: 310-280664-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: GUE-2
Lab Sample ID: 310-280664-1
Date Collected: 05/07/24 13:00
Matrix: Water
Date Received: 05/08/24 09:05

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*104*		*73 - 130*		*05/15/24 00:42*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*05/15/24 00:42*	*1*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*		*05/15/24 00:42*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		05/09/24 09:30	05/14/24 17:01	1
Arsenic	**3.04**		2.00	0.530	ug/L		05/09/24 09:30	05/13/24 21:51	1
Barium	**571**		2.00	0.660	ug/L		05/09/24 09:30	05/13/24 21:51	1
Beryllium	<0.330		1.00	0.330	ug/L		05/09/24 09:30	05/13/24 21:51	1
Cadmium	<0.100		0.200	0.100	ug/L		05/09/24 09:30	05/14/24 17:01	1
Chromium	**3.02**	**J**	5.00	1.20	ug/L		05/09/24 09:30	05/13/24 21:51	1
Cobalt	**2.84**		0.500	0.170	ug/L		05/09/24 09:30	05/13/24 21:51	1
Copper	<1.80		5.00	1.80	ug/L		05/09/24 09:30	05/13/24 21:51	1
Lead	<0.260		0.500	0.260	ug/L		05/09/24 09:30	05/13/24 21:51	1
Nickel	**29.7**		5.00	2.10	ug/L		05/09/24 09:30	05/13/24 21:51	1
Selenium	<1.40		5.00	1.40	ug/L		05/09/24 09:30	05/13/24 21:51	1
Silver	<0.500		1.00	0.500	ug/L		05/09/24 09:30	05/13/24 21:51	1
Thallium	<0.570		1.00	0.570	ug/L		05/09/24 09:30	05/13/24 21:51	1
Vanadium	**1.19**	**J**	5.00	1.10	ug/L		05/09/24 09:30	05/13/24 21:51	1
Zinc	<9.70		20.0	9.70	ug/L		05/09/24 09:30	05/14/24 17:01	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**31.0**		15.0	11.1	mg/L			05/10/24 14:33	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**11.73**				NTU			05/07/24 13:00	1

Client: AECOM
Job ID: 310-280664-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-105B
Lab Sample ID: 310-280664-2
Date Collected: 05/07/24 14:45
Matrix: Water
Date Received: 05/08/24 09:05

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/15/24 01:04	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/15/24 01:04	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/15/24 01:04	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/15/24 01:04	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/15/24 01:04	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/15/24 01:04	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/15/24 01:04	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/15/24 01:04	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/15/24 01:04	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/15/24 01:04	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/15/24 01:04	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/15/24 01:04	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/15/24 01:04	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/15/24 01:04	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/15/24 01:04	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/15/24 01:04	1
Acetone	<3.10		10.0	3.10	ug/L			05/15/24 01:04	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/15/24 01:04	1
Benzene	<0.220		0.500	0.220	ug/L			05/15/24 01:04	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/15/24 01:04	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/15/24 01:04	1
Bromoform	<0.780		5.00	0.780	ug/L			05/15/24 01:04	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/15/24 01:04	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/15/24 01:04	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/15/24 01:04	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/15/24 01:04	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/15/24 01:04	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/15/24 01:04	1
Chloroform	<1.30		3.00	1.30	ug/L			05/15/24 01:04	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/15/24 01:04	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/15/24 01:04	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/15/24 01:04	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/15/24 01:04	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/15/24 01:04	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/15/24 01:04	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/15/24 01:04	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/15/24 01:04	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/15/24 01:04	1
Styrene	<0.370		1.00	0.370	ug/L			05/15/24 01:04	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/15/24 01:04	1
Toluene	<0.430		1.00	0.430	ug/L			05/15/24 01:04	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/15/24 01:04	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/15/24 01:04	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/15/24 01:04	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/15/24 01:04	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/15/24 01:04	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/15/24 01:04	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/15/24 01:04	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/15/24 01:04	1

Client: AECOM
Job ID: 310-280664-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-105B
Lab Sample ID: 310-280664-2

Date Collected: 05/07/24 14:45
Matrix: Water

Date Received: 05/08/24 09:05

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*106*		*73 - 130*		*05/15/24 01:04*	*1*
Toluene-d8 (Surr)	*95*		*80 - 120*		*05/15/24 01:04*	*1*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*		*05/15/24 01:04*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		05/09/24 09:30	05/14/24 17:04	1
Arsenic	<0.530		2.00	0.530	ug/L		05/09/24 09:30	05/13/24 21:54	1
Barium	**79.9**		2.00	0.660	ug/L		05/09/24 09:30	05/13/24 21:54	1
Beryllium	<0.330		1.00	0.330	ug/L		05/09/24 09:30	05/13/24 21:54	1
Cadmium	<0.100		0.200	0.100	ug/L		05/09/24 09:30	05/14/24 17:04	1
Chromium	**4.38**	**J**	5.00	1.20	ug/L		05/09/24 09:30	05/13/24 21:54	1
Cobalt	<0.170		0.500	0.170	ug/L		05/09/24 09:30	05/13/24 21:54	1
Copper	<1.80		5.00	1.80	ug/L		05/09/24 09:30	05/13/24 21:54	1
Lead	<0.260		0.500	0.260	ug/L		05/09/24 09:30	05/13/24 21:54	1
Nickel	<2.10		5.00	2.10	ug/L		05/09/24 09:30	05/13/24 21:54	1
Selenium	<1.40		5.00	1.40	ug/L		05/09/24 09:30	05/13/24 21:54	1
Silver	<0.500		1.00	0.500	ug/L		05/09/24 09:30	05/13/24 21:54	1
Thallium	<0.570		1.00	0.570	ug/L		05/09/24 09:30	05/13/24 21:54	1
Vanadium	<1.10		5.00	1.10	ug/L		05/09/24 09:30	05/13/24 21:54	1
Zinc	<9.70		20.0	9.70	ug/L		05/09/24 09:30	05/14/24 17:04	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	<1.39		1.88	1.39	mg/L			05/10/24 14:33	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**4.15**				NTU			05/07/24 14:45	1

Client: AECOM
Job ID: 310-280664-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Trip Blank
Lab Sample ID: 310-280664-3
Date Collected: 05/07/24 06:00
Matrix: Water
Date Received: 05/08/24 09:05

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/14/24 23:15	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/14/24 23:15	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/14/24 23:15	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/14/24 23:15	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/14/24 23:15	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/14/24 23:15	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/14/24 23:15	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/14/24 23:15	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/14/24 23:15	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/14/24 23:15	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/14/24 23:15	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/14/24 23:15	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/14/24 23:15	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/14/24 23:15	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/14/24 23:15	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/14/24 23:15	1
Acetone	<3.10		10.0	3.10	ug/L			05/14/24 23:15	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/14/24 23:15	1
Benzene	<0.220		0.500	0.220	ug/L			05/14/24 23:15	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/14/24 23:15	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/14/24 23:15	1
Bromoform	<0.780		5.00	0.780	ug/L			05/14/24 23:15	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/14/24 23:15	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/14/24 23:15	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/14/24 23:15	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/14/24 23:15	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/14/24 23:15	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/14/24 23:15	1
Chloroform	<1.30		3.00	1.30	ug/L			05/14/24 23:15	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/14/24 23:15	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/14/24 23:15	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/14/24 23:15	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/14/24 23:15	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/14/24 23:15	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/14/24 23:15	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/14/24 23:15	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/14/24 23:15	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/14/24 23:15	1
Styrene	<0.370		1.00	0.370	ug/L			05/14/24 23:15	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/14/24 23:15	1
Toluene	<0.430		1.00	0.430	ug/L			05/14/24 23:15	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/14/24 23:15	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/14/24 23:15	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/14/24 23:15	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/14/24 23:15	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/14/24 23:15	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/14/24 23:15	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/14/24 23:15	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/14/24 23:15	1

Client: AECOM
Job ID: 310-280664-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Trip Blank
Lab Sample ID: 310-280664-3
Date Collected: 05/07/24 06:00
Matrix: Water
Date Received: 05/08/24 09:05

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	101		73 - 130		05/14/24 23:15	1
Toluene-d8 (Surr)	97		80 - 120		05/14/24 23:15	1
4-Bromofluorobenzene (Surr)	103		80 - 120		05/14/24 23:15	1

Definitions/Glossary

Client: AECOM
Job ID: 310-280664-1
Project/Site: Black Hawk County Landfill (IDNR)

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Surrogate Summary

Client: AECOM
Job ID: 310-280664-1
Project/Site: Black Hawk County Landfill (IDNR)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-280664-1	GUE-2	104	96	103
310-280664-1 MS	GUE-2	95	103	98
310-280664-1 MSD	GUE-2	95	103	99
310-280664-2	OW-105B	106	95	104
310-280664-3	Trip Blank	101	97	103
LCS 310-421433/6	Lab Control Sample	99	104	99
LCS 310-421433/7	Lab Control Sample	102	97	103
MB 310-421433/5	Method Blank	102	97	98

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 310-421433/5
Matrix: Water
Analysis Batch: 421433

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/14/24 22:10	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/14/24 22:10	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/14/24 22:10	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/14/24 22:10	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/14/24 22:10	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/14/24 22:10	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/14/24 22:10	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/14/24 22:10	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/14/24 22:10	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/14/24 22:10	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/14/24 22:10	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/14/24 22:10	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/14/24 22:10	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/14/24 22:10	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/14/24 22:10	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/14/24 22:10	1
Acetone	<3.10		10.0	3.10	ug/L			05/14/24 22:10	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/14/24 22:10	1
Benzene	<0.220		0.500	0.220	ug/L			05/14/24 22:10	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/14/24 22:10	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/14/24 22:10	1
Bromoform	<0.780		5.00	0.780	ug/L			05/14/24 22:10	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/14/24 22:10	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/14/24 22:10	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/14/24 22:10	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/14/24 22:10	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/14/24 22:10	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/14/24 22:10	1
Chloroform	<1.30		3.00	1.30	ug/L			05/14/24 22:10	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/14/24 22:10	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/14/24 22:10	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/14/24 22:10	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/14/24 22:10	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/14/24 22:10	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/14/24 22:10	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/14/24 22:10	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/14/24 22:10	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/14/24 22:10	1
Styrene	<0.370		1.00	0.370	ug/L			05/14/24 22:10	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/14/24 22:10	1
Toluene	<0.430		1.00	0.430	ug/L			05/14/24 22:10	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/14/24 22:10	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/14/24 22:10	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/14/24 22:10	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/14/24 22:10	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/14/24 22:10	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/14/24 22:10	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/14/24 22:10	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-421433/5
Matrix: Water
Analysis Batch: 421433

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/14/24 22:10	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*102*		*73 - 130*		*05/14/24 22:10*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*05/14/24 22:10*	*1*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*05/14/24 22:10*	*1*

Lab Sample ID: LCS 310-421433/6
Matrix: Water
Analysis Batch: 421433

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	20.0	19.08		ug/L		95	71 - 120
1,1,1-Trichloroethane	20.0	19.36		ug/L		97	73 - 129
1,1,2,2-Tetrachloroethane	20.0	19.97		ug/L		100	68 - 124
1,1,2-Trichloroethane	20.0	19.95		ug/L		100	73 - 123
1,1-Dichloroethane	20.0	19.85		ug/L		99	70 - 127
1,1-Dichloroethene	20.0	19.86		ug/L		99	63 - 132
1,2,3-Trichloropropane	20.0	20.10		ug/L		100	65 - 127
1,2-Dibromo-3-Chloropropane	20.0	17.87		ug/L		89	50 - 150
1,2-Dibromoethane (EDB)	20.0	20.23		ug/L		101	75 - 125
1,2-Dichlorobenzene	20.0	18.91		ug/L		95	74 - 120
1,2-Dichloroethane	20.0	19.53		ug/L		98	71 - 125
1,2-Dichloropropane	20.0	19.67		ug/L		98	73 - 124
1,4-Dichlorobenzene	20.0	18.04		ug/L		90	72 - 120
2-Butanone (MEK)	40.0	39.01		ug/L		98	50 - 150
2-Hexanone	40.0	39.87		ug/L		100	60 - 140
4-Methyl-2-pentanone (MIBK)	40.0	41.18		ug/L		103	60 - 139
Acetone	40.0	39.61		ug/L		99	50 - 150
Acrylonitrile	200	202.6		ug/L		101	50 - 150
Benzene	20.0	19.54		ug/L		98	72 - 124
Bromochloromethane	20.0	19.95		ug/L		100	73 - 130
Bromodichloromethane	20.0	18.75		ug/L		94	74 - 122
Bromoform	20.0	19.80		ug/L		99	61 - 122
Carbon disulfide	20.0	18.63		ug/L		93	59 - 135
Carbon tetrachloride	20.0	18.56		ug/L		93	67 - 132
Chlorobenzene	20.0	19.26		ug/L		96	76 - 120
Chlorodibromomethane	20.0	19.39		ug/L		97	71 - 121
Chloroform	20.0	19.03		ug/L		95	72 - 125
cis-1,2-Dichloroethene	20.0	19.61		ug/L		98	74 - 123
cis-1,3-Dichloropropene	20.0	19.90		ug/L		99	71 - 125
Dibromomethane	20.0	19.82		ug/L		99	74 - 125
Ethylbenzene	20.0	19.89		ug/L		99	74 - 122
Iodomethane	20.0	16.50		ug/L		83	10 - 150
Methylene Chloride	20.0	20.11		ug/L		101	50 - 150
Styrene	20.0	20.54		ug/L		103	74 - 121
Tetrachloroethene	20.0	18.15		ug/L		91	71 - 130
Toluene	20.0	19.23		ug/L		96	74 - 123

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-421433/6
Matrix: Water
Analysis Batch: 421433

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
trans-1,2-Dichloroethene	20.0	19.56		ug/L		98	70 - 126
trans-1,3-Dichloropropene	20.0	19.97		ug/L		100	69 - 123
trans-1,4-Dichloro-2-butene	20.0	19.24		ug/L		96	50 - 150
Trichloroethene	20.0	19.37		ug/L		97	72 - 126
Vinyl acetate	40.0	36.62		ug/L		92	50 - 150
Xylenes, Total	40.0	39.59		ug/L		99	73 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*99*		*73 - 130*
Toluene-d8 (Surr)	*104*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*

Lab Sample ID: LCS 310-421433/7
Matrix: Water
Analysis Batch: 421433

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	16.08		ug/L		80	23 - 150
Chloroethane	20.0	18.39		ug/L		92	54 - 136
Chloromethane	20.0	19.52		ug/L		98	38 - 150
Trichlorofluoromethane	20.0	16.93		ug/L		85	54 - 149
Vinyl chloride	20.0	18.84		ug/L		94	56 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*102*		*73 - 130*
Toluene-d8 (Surr)	*97*		*80 - 120*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*

Lab Sample ID: 310-280664-1 MS
Matrix: Water
Analysis Batch: 421433

Client Sample ID: GUE-2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	<0.380		25.0	21.60		ug/L		86	55 - 130
1,1,1-Trichloroethane	<0.190		25.0	23.03		ug/L		92	52 - 130
1,1,2,2-Tetrachloroethane	<0.470		25.0	23.10		ug/L		92	54 - 130
1,1,2-Trichloroethane	<0.450		25.0	22.71		ug/L		91	58 - 130
1,1-Dichloroethane	0.474	J	25.0	23.64		ug/L		93	49 - 130
1,1-Dichloroethene	<0.560		25.0	23.45		ug/L		94	37 - 132
1,2,3-Trichloropropane	<0.590		25.0	23.17		ug/L		93	49 - 130
1,2-Dibromo-3-Chloropropane	<1.20		25.0	22.31		ug/L		89	38 - 150
1,2-Dibromoethane (EDB)	<0.340		25.0	22.98		ug/L		92	60 - 130
1,2-Dichlorobenzene	<0.370		25.0	21.86		ug/L		87	59 - 130
1,2-Dichloroethane	<0.390		25.0	22.00		ug/L		88	51 - 130
1,2-Dichloropropane	<0.270		25.0	23.77		ug/L		95	57 - 130
1,4-Dichlorobenzene	0.378	J	25.0	21.32		ug/L		84	57 - 130
2-Butanone (MEK)	<2.10		50.0	52.91		ug/L		106	38 - 150
2-Hexanone	<2.00		50.0	53.11		ug/L		106	46 - 140

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 310-280664-1 MS
Matrix: Water
Analysis Batch: 421433

Client Sample ID: GUE-2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
4-Methyl-2-pentanone (MIBK)	<2.10		50.0	56.15		ug/L		112	47 - 139
Acetone	6.25	J	50.0	53.35		ug/L		94	31 - 150
Acrylonitrile	<2.20		250	243.7		ug/L		97	40 - 150
Benzene	1.27		25.0	23.92		ug/L		91	46 - 130
Bromochloromethane	<0.540		25.0	21.84		ug/L		87	57 - 130
Bromodichloromethane	<0.390		25.0	20.67		ug/L		83	57 - 130
Bromoform	<0.780		25.0	19.95		ug/L		80	44 - 130
Carbon disulfide	<0.450		25.0	23.61		ug/L		94	38 - 135
Carbon tetrachloride	<0.650		25.0	22.38		ug/L		90	45 - 132
Chlorobenzene	<0.400		25.0	21.98		ug/L		88	59 - 130
Chlorodibromomethane	<0.750		25.0	20.58		ug/L		82	54 - 130
Chloroform	<1.30		25.0	20.64		ug/L		83	51 - 130
cis-1,2-Dichloroethene	2.92		25.0	24.73		ug/L		87	45 - 130
cis-1,3-Dichloropropene	<0.250		25.0	22.75		ug/L		91	53 - 130
Dibromomethane	<0.330		25.0	21.93		ug/L		88	59 - 130
Ethylbenzene	<0.310		25.0	23.25		ug/L		93	45 - 130
Iodomethane	<7.00		25.0	18.21		ug/L		73	10 - 150
Methylene Chloride	<1.70		25.0	23.05		ug/L		92	37 - 150
Styrene	<0.370		25.0	23.02		ug/L		92	47 - 130
Tetrachloroethene	<0.480		25.0	21.20		ug/L		85	47 - 130
Toluene	<0.430		25.0	22.25		ug/L		89	51 - 130
trans-1,2-Dichloroethene	0.278	J	25.0	22.80		ug/L		90	48 - 130
trans-1,3-Dichloropropene	<0.560		25.0	23.10		ug/L		92	50 - 130
trans-1,4-Dichloro-2-butene	<1.10		25.0	22.70		ug/L		91	26 - 150
Trichloroethene	0.596	J	25.0	22.94		ug/L		89	51 - 130
Vinyl acetate	<2.50		50.0	43.92		ug/L		88	29 - 150
Xylenes, Total	<0.400		50.0	46.27		ug/L		93	43 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*95*		*73 - 130*
Toluene-d8 (Surr)	*103*		*80 - 120*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*

Lab Sample ID: 310-280664-1 MSD
Matrix: Water
Analysis Batch: 421433

Client Sample ID: GUE-2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	<0.380		25.0	20.80		ug/L		83	55 - 130	4	20
1,1,1-Trichloroethane	<0.190		25.0	22.84		ug/L		91	52 - 130	1	20
1,1,2,2-Tetrachloroethane	<0.470		25.0	22.57		ug/L		90	54 - 130	2	20
1,1,2-Trichloroethane	<0.450		25.0	22.24		ug/L		89	58 - 130	2	20
1,1-Dichloroethane	0.474	J	25.0	23.01		ug/L		90	49 - 130	3	20
1,1-Dichloroethene	<0.560		25.0	22.67		ug/L		91	37 - 132	3	26
1,2,3-Trichloropropane	<0.590		25.0	22.85		ug/L		91	49 - 130	1	26
1,2-Dibromo-3-Chloropropane	<1.20		25.0	22.53		ug/L		90	38 - 150	1	20
1,2-Dibromoethane (EDB)	<0.340		25.0	22.35		ug/L		89	60 - 130	3	20
1,2-Dichlorobenzene	<0.370		25.0	22.26		ug/L		89	59 - 130	2	20

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 310-280664-1 MSD
Matrix: Water
Analysis Batch: 421433

Client Sample ID: GUE-2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2-Dichloroethane	<0.390		25.0	21.76		ug/L		87	51 - 130	1	20
1,2-Dichloropropane	<0.270		25.0	22.40		ug/L		90	57 - 130	6	20
1,4-Dichlorobenzene	0.378	J	25.0	21.40		ug/L		84	57 - 130	0	20
2-Butanone (MEK)	<2.10		50.0	52.38		ug/L		105	38 - 150	1	20
2-Hexanone	<2.00		50.0	52.50		ug/L		105	46 - 140	1	20
4-Methyl-2-pentanone (MIBK)	<2.10		50.0	54.93		ug/L		110	47 - 139	2	20
Acetone	6.25	J	50.0	53.41		ug/L		94	31 - 150	0	29
Acrylonitrile	<2.20		250	242.1		ug/L		97	40 - 150	1	20
Benzene	1.27		25.0	23.11		ug/L		87	46 - 130	3	20
Bromochloromethane	<0.540		25.0	21.44		ug/L		86	57 - 130	2	20
Bromodichloromethane	<0.390		25.0	20.25		ug/L		81	57 - 130	2	20
Bromoform	<0.780		25.0	20.02		ug/L		80	44 - 130	0	20
Carbon disulfide	<0.450		25.0	22.09		ug/L		88	38 - 135	7	30
Carbon tetrachloride	<0.650		25.0	22.06		ug/L		88	45 - 132	1	20
Chlorobenzene	<0.400		25.0	21.23		ug/L		85	59 - 130	3	20
Chlorodibromomethane	<0.750		25.0	20.34		ug/L		81	54 - 130	1	20
Chloroform	<1.30		25.0	19.72		ug/L		79	51 - 130	5	20
cis-1,2-Dichloroethene	2.92		25.0	24.37		ug/L		86	45 - 130	1	20
cis-1,3-Dichloropropene	<0.250		25.0	22.26		ug/L		89	53 - 130	2	20
Dibromomethane	<0.330		25.0	21.63		ug/L		87	59 - 130	1	20
Ethylbenzene	<0.310		25.0	22.80		ug/L		91	45 - 130	2	20
Iodomethane	<7.00		25.0	20.54		ug/L		82	10 - 150	12	35
Methylene Chloride	<1.70		25.0	21.97		ug/L		88	37 - 150	5	24
Styrene	<0.370		25.0	22.78		ug/L		91	47 - 130	1	20
Tetrachloroethene	<0.480		25.0	20.54		ug/L		82	47 - 130	3	20
Toluene	<0.430		25.0	21.64		ug/L		87	51 - 130	3	20
trans-1,2-Dichloroethene	0.278	J	25.0	22.20		ug/L		88	48 - 130	3	22
trans-1,3-Dichloropropene	<0.560		25.0	23.04		ug/L		92	50 - 130	0	20
trans-1,4-Dichloro-2-butene	<1.10		25.0	22.34		ug/L		89	26 - 150	2	23
Trichloroethene	0.596	J	25.0	22.01		ug/L		86	51 - 130	4	20
Vinyl acetate	<2.50		50.0	40.79		ug/L		82	29 - 150	7	23
Xylenes, Total	<0.400		50.0	45.09		ug/L		90	43 - 130	3	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*95*		*73 - 130*
Toluene-d8 (Surr)	*103*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-421062/1-A
Matrix: Water
Analysis Batch: 421541

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 421062

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.530		2.00	0.530	ug/L		05/09/24 09:30	05/13/24 20:39	1
Barium	<0.660		2.00	0.660	ug/L		05/09/24 09:30	05/13/24 20:39	1
Beryllium	<0.330		1.00	0.330	ug/L		05/09/24 09:30	05/13/24 20:39	1
Chromium	<1.20		5.00	1.20	ug/L		05/09/24 09:30	05/13/24 20:39	1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 310-421062/1-A
Matrix: Water
Analysis Batch: 421541

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 421062

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	<0.170		0.500	0.170	ug/L		05/09/24 09:30	05/13/24 20:39	1
Copper	<1.80		5.00	1.80	ug/L		05/09/24 09:30	05/13/24 20:39	1
Lead	<0.260		0.500	0.260	ug/L		05/09/24 09:30	05/13/24 20:39	1
Nickel	<2.10		5.00	2.10	ug/L		05/09/24 09:30	05/13/24 20:39	1
Selenium	<1.40		5.00	1.40	ug/L		05/09/24 09:30	05/13/24 20:39	1
Silver	<0.500		1.00	0.500	ug/L		05/09/24 09:30	05/13/24 20:39	1
Thallium	<0.570		1.00	0.570	ug/L		05/09/24 09:30	05/13/24 20:39	1
Vanadium	<1.10		5.00	1.10	ug/L		05/09/24 09:30	05/13/24 20:39	1

Lab Sample ID: MB 310-421062/1-A
Matrix: Water
Analysis Batch: 421633

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 421062

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	<0.100		0.200	0.100	ug/L		05/09/24 09:30	05/14/24 15:21	1
Zinc	<9.70		20.0	9.70	ug/L		05/09/24 09:30	05/14/24 15:21	1

Lab Sample ID: MB 310-421062/1-A
Matrix: Water
Analysis Batch: 421844

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 421062

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		05/09/24 09:30	05/15/24 19:50	1

Lab Sample ID: LCS 310-421062/2-A
Matrix: Water
Analysis Batch: 421541

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 421062

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	200	197.9		ug/L		99	80 - 120
Barium	100	97.58		ug/L		98	80 - 120
Beryllium	100	86.93		ug/L		87	80 - 120
Chromium	100	98.69		ug/L		99	80 - 120
Cobalt	100	99.62		ug/L		100	80 - 120
Copper	200	214.5		ug/L		107	80 - 120
Lead	200	213.1		ug/L		107	80 - 120
Nickel	200	204.8		ug/L		102	80 - 120
Selenium	400	373.6		ug/L		93	80 - 120
Silver	100	97.75		ug/L		98	80 - 120
Thallium	100	109.0		ug/L		109	80 - 120
Vanadium	100	88.81		ug/L		89	80 - 120

Lab Sample ID: LCS 310-421062/2-A
Matrix: Water
Analysis Batch: 421633

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 421062

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	100	99.92		ug/L		100	80 - 120
Zinc	200	198.9		ug/L		99	80 - 120

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 310-421062/2-A
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 421844
Prep Batch: 421062

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	200	215.9		ug/L		108	80 - 120

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: MB 310-421342/1
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 421342

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<3.70		5.00	3.70	mg/L			05/10/24 14:33	1

Lab Sample ID: LCS 310-421342/2
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 421342

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	97.00		mg/L		97	75 - 116

QC Association Summary

Client: AECOM
Job ID: 310-280664-1
Project/Site: Black Hawk County Landfill (IDNR)

GC/MS VOA

Analysis Batch: 421433

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280664-1	GUE-2	Total/NA	Water	8260D	
310-280664-2	OW-105B	Total/NA	Water	8260D	
310-280664-3	Trip Blank	Total/NA	Water	8260D	
MB 310-421433/5	Method Blank	Total/NA	Water	8260D	
LCS 310-421433/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-421433/7	Lab Control Sample	Total/NA	Water	8260D	
310-280664-1 MS	GUE-2	Total/NA	Water	8260D	
310-280664-1 MSD	GUE-2	Total/NA	Water	8260D	

Metals

Prep Batch: 421062

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280664-1	GUE-2	Total/NA	Water	3005A	
310-280664-2	OW-105B	Total/NA	Water	3005A	
MB 310-421062/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-421062/2-A	Lab Control Sample	Total/NA	Water	3005A	

Analysis Batch: 421541

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280664-1	GUE-2	Total/NA	Water	6020B	421062
310-280664-2	OW-105B	Total/NA	Water	6020B	421062
MB 310-421062/1-A	Method Blank	Total/NA	Water	6020B	421062
LCS 310-421062/2-A	Lab Control Sample	Total/NA	Water	6020B	421062

Analysis Batch: 421633

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 310-421062/1-A	Method Blank	Total/NA	Water	6020B	421062
LCS 310-421062/2-A	Lab Control Sample	Total/NA	Water	6020B	421062

Analysis Batch: 421695

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280664-1	GUE-2	Total/NA	Water	6020B	421062
310-280664-2	OW-105B	Total/NA	Water	6020B	421062

Analysis Batch: 421844

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 310-421062/1-A	Method Blank	Total/NA	Water	6020B	421062
LCS 310-421062/2-A	Lab Control Sample	Total/NA	Water	6020B	421062

General Chemistry

Analysis Batch: 421342

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280664-1	GUE-2	Total/NA	Water	I-3765-85	
310-280664-2	OW-105B	Total/NA	Water	I-3765-85	
MB 310-421342/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-421342/2	Lab Control Sample	Total/NA	Water	I-3765-85	

QC Association Summary

Client: AECOM
Job ID: 310-280664-1
Project/Site: Black Hawk County Landfill (IDNR)

Field Service / Mobile Lab

Analysis Batch: 421742

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280664-1	GUE-2	Total/NA	Water	Field Sampling	
310-280664-2	OW-105B	Total/NA	Water	Field Sampling	

Lab Chronicle

Client: AECOM
Job ID: 310-280664-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: GUE-2
Lab Sample ID: 310-280664-1
Date Collected: 05/07/24 13:00
Matrix: Water
Date Received: 05/08/24 09:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	421433	WSE8	EET CF	05/15/24 00:42
Total/NA	Prep	3005A			421062	KM3E	EET CF	05/09/24 09:30
Total/NA	Analysis	6020B		1	421541	DHM5	EET CF	05/13/24 21:51
Total/NA	Prep	3005A			421062	KM3E	EET CF	05/09/24 09:30
Total/NA	Analysis	6020B		1	421695	NFT2	EET CF	05/14/24 17:01
Total/NA	Analysis	I-3765-85		1	421342	DGU1	EET CF	05/10/24 14:33
Total/NA	Analysis	Field Sampling		1	421742	BJ0R	EET CF	05/07/24 13:00

Client Sample ID: OW-105B
Lab Sample ID: 310-280664-2
Date Collected: 05/07/24 14:45
Matrix: Water
Date Received: 05/08/24 09:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	421433	WSE8	EET CF	05/15/24 01:04
Total/NA	Prep	3005A			421062	KM3E	EET CF	05/09/24 09:30
Total/NA	Analysis	6020B		1	421541	DHM5	EET CF	05/13/24 21:54
Total/NA	Prep	3005A			421062	KM3E	EET CF	05/09/24 09:30
Total/NA	Analysis	6020B		1	421695	NFT2	EET CF	05/14/24 17:04
Total/NA	Analysis	I-3765-85		1	421342	DGU1	EET CF	05/10/24 14:33
Total/NA	Analysis	Field Sampling		1	421742	BJ0R	EET CF	05/07/24 14:45

Client Sample ID: Trip Blank
Lab Sample ID: 310-280664-3
Date Collected: 05/07/24 06:00
Matrix: Water
Date Received: 05/08/24 09:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	421433	WSE8	EET CF	05/14/24 23:15

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Accreditation/Certification Summary

Client: AECOM
Job ID: 310-280664-1
Project/Site: Black Hawk County Landfill (IDNR)

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8260D		Water	m,p-Xylene
8260D		Water	o-Xylene
Field Sampling		Water	Field Turbidity

Method Summary

Client: AECOM
Job ID: 310-280664-1
Project/Site: Black Hawk County Landfill (IDNR)

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
Field Sampling	Field Sampling	EPA	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
5030B	Purge and Trap	SW846	EET CF

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

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310-280664 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: AECOM

City/State: CITY Denver STATE CO Project: BHC IDW

Receipt Information

Date/Time Received: DATE 5/8/24 TIME 0705 Received By: JD

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☐ Lab Courier ☐ Lab Field Services ☑ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☑ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☐ Yes ☑ No *If yes:* Cooler # _____ of _____

Cooler Custody Seals Present? ☐ Yes ☑ No *If yes:* Cooler custody seals intact? ☐ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☑ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☑ Yes ☐ No *If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☑ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: V Correction Factor (°C): 0.0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): Corrected Temp (°C):

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:	250 HNO3	
Uncorrected Temp (°C):	2.4	
Corrected Temp (°C):	2.4	

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

Eurofins Cedar Falls
3019 Venture Way

Cedar Falls, IA 50613
phone 319 277.2401 fax 319 277 2425

Chain of Custody Record

eurofins Environment Testing America

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other IDNR

Eurofins Environment Testing America

Client Contact	**Project Manager: Chris Oelkers**		COC No
AECOM	Email Christopher.Oelkers@aecom.com	**Site Contact:**	**Date:** 5-8-24	1 of 2 COCs
501 Sycamore Street, Suite 222	**Tel/Fax:319-296-6878**	**Lab Contact:**	**Carrier:**	TALS Project #
Waterloo, IA 50703	**Analysis Turnaround Time**			Sampler
(319) 232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS			**For Lab Use Only:**
(xxx) xxx-xxxx FAX	TAT if different from Below ____			Walk-in Client.
Project Name Black Hawk Co IDNR	☑ 2 weeks			Lab Sampling
Site Black Hawk County Landfill	☐ 1 week			
P O #	☐ 2 days			Job / SDG No
	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	Appendix I, TSS	Appendix II, TSS	2,4-D	4,4'-DDD	beta-BHC	delta BHC	Endosulfan I	Endosulfan sulfate	Endrin aldehyde	Silvex	Sulfide	Sample Specific Notes
MW-603B			G	GW		N		X											
MW-604B			G	GW		N		X											
MW-709B			G	GW		N		X											
MW-710B			G	GW		N		X											
MW-711B			G	GW		N		X											
MW-712B			G	GW		N		X											
GUE-1			G	GW		N		X											
GUE-2	5-7-24	1300	G	GW	5	N		X											Turbidity - 11.73 NTU
GUW1-1			G	GW		N		X											
GUW2-1			G	GW		N		X											
Equipment Blank-2			G	GW		N		X											
GUW2-1-FD			G	GW		N		X											

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for ____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No | Cooler Temp. (°C) Obs'd ____ Corr'd ____ Therm ID No. ____

Relinquished by: Ben Porter	Company: Aecom	Date/Time: 5-8-24	Received by:	Company:	Date/Time: 5824 0905
Relinquished by:	Company:	Date/Time	Received by:	Company:	Date/Time
Relinquished by:	Company:	Date/Time	Received in Laboratory by:	Company:	Date/Time

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5/17/2024

Eurofins Cedar Falls
3019 Venture Way

Cedar Falls, IA 50613
phone 319 277.2401 fax 319 277 2425

Chain of Custody Record

eurofins Environment Testing America

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other IDNR

Eurofins Environment Testing America

Client Contact	**Project Manager: Chris Oelkers**		COC No
AECOM	Email Christopher Oelkers@aecom com	**Site Contact:**	**Date:** 5-8-24 — 2 of 2 COCs
501 Sycamore Street, Suite 222	**Tel/Fax:319-296-6878**	**Lab Contact:**	**Carrier:** — TALS Project #
Waterloo, IA 50703	**Analysis Turnaround Time** ☑ CALENDAR DAYS ☐ WORKING DAYS		Sampler
(319) 232-6531 Phone	TAT if different from Below ☑ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day		**For Lab Use Only:** Walk-in Client: Lab Sampling
(xxx) xxx-xxxx FAX			
Project Name Black Hawk Co IDNR			Job / SDG No
Site Black Hawk County Landfill			
P O #			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	Appendix I, TSS	Appendix II, TSS	2,4-D	4,4'-DDD	beta-BHC	delta BHC	Endosulfan I	Endosulfan sulfate	Endrin aldehyde	Silvex	Sulfide	Sample Specific Notes
OW-101B			G	GW		N		X											
OW-105B	5-7-24	1445	G	GW	5	N		X											Turbidity - 4.15 NTU
OW-113B			G	GW		N		X										X	
OW-114B			G	GW		N		X											
OW-205B			G	GW		N		X			X			X				X	
OW-209B			G	GW		N		X											
OW-212B			G	GW		N		X											
OW-213BR			G	GW		N		X											
OW-216BR			G	GW		N		X											
OW-219B			G	GW		N		X											
OW-219B-FD			G	GW		N		X											
Trip Blank	5-7-24	0600	G	W	2	N		X											

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No		Cooler Temp (°C) Obs'd. _____ Corr'd. _____		Therm ID No. _____
Relinquished by: Ben Porter	Company: Aecom	Date/Time: 5-8-24	Received by:	Company:	Date/Time: 5/8/24 0905
Relinquished by:	Company:	Date/Time	Received by:	Company:	Date/Time
Relinquished by:	Company:	Date/Time	Received in Laboratory by:	Company:	Date/Time

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5/17/2024

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-280664-1

Login Number: 280664

List Source: Eurofins Cedar Falls

List Number: 1

Creator: Costello, Mackenzie K

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Chris Oelkers
AECOM
501 Sycamore Street
Suite #222
Waterloo, Iowa 50703

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JOB DESCRIPTION

Black Hawk County Landfill (IDNR)

JOB NUMBER

310-280844-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



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Authorized for release by
Zach Bindert, Client Service Manager
Zach.Bindert@et.eurofinsus.com
(319)277-2401

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Job ID: 310-280844-1 — Eurofins Cedar Falls

Job Narrative
310-280844-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 5/9/2024 10:40 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.3°C.

GC/MS VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Field Service / Mobile Lab
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Sample Summary

Client: AECOM
Job ID: 310-280844-1
Project/Site: Black Hawk County Landfill (IDNR)

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-280844-1	MW-319B	Ground Water	05/08/24 11:00	05/09/24 10:40
310-280844-2	OW-414B	Ground Water	05/08/24 13:00	05/09/24 10:40
310-280844-3	OW-101B	Ground Water	05/08/24 10:00	05/09/24 10:40
310-280844-4	Trip Blank	Water	05/08/24 06:00	05/09/24 10:40

Detection Summary

Client: AECOM
Job ID: 310-280844-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: MW-319B — Lab Sample ID: 310-280844-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	223		2.00	0.660	ug/L	1		6020B	Total/NA
Chromium	12.3		5.00	1.20	ug/L	1		6020B	Total/NA
Copper	2.54	J B	5.00	1.80	ug/L	1		6020B	Total/NA
Nickel	60.2		5.00	2.10	ug/L	1		6020B	Total/NA
Total Suspended Solids	4.75		1.88	1.39	mg/L	1		I-3765-85	Total/NA
Field Turbidity	6.36				NTU	1		Field Sampling	Total/NA

Client Sample ID: OW-414B — Lab Sample ID: 310-280844-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,2-Dichloropropane	0.532	J	1.00	0.270	ug/L	1		8260D	Total/NA
1,4-Dichlorobenzene	1.84		1.00	0.230	ug/L	1		8260D	Total/NA
Acetone	4.20	J	10.0	3.10	ug/L	1		8260D	Total/NA
Benzene	1.98		0.500	0.220	ug/L	1		8260D	Total/NA
Chlorobenzene	0.912	J	1.00	0.400	ug/L	1		8260D	Total/NA
Chloroethane	1.23	J	4.00	0.790	ug/L	1		8260D	Total/NA
cis-1,2-Dichloroethene	6.98		1.00	0.210	ug/L	1		8260D	Total/NA
trans-1,2-Dichloroethene	0.328	J	1.00	0.270	ug/L	1		8260D	Total/NA
Vinyl chloride	0.900	J	1.00	0.180	ug/L	1		8260D	Total/NA
Arsenic	9.85		2.00	0.530	ug/L	1		6020B	Total/NA
Barium	642		2.00	0.660	ug/L	1		6020B	Total/NA
Cobalt	19.1		0.500	0.170	ug/L	1		6020B	Total/NA
Copper	2.74	J B	5.00	1.80	ug/L	1		6020B	Total/NA
Nickel	67.2		5.00	2.10	ug/L	1		6020B	Total/NA
Total Suspended Solids	34.7		5.00	3.70	mg/L	1		I-3765-85	Total/NA
Field Turbidity	1.01				NTU	1		Field Sampling	Total/NA

Client Sample ID: OW-101B — Lab Sample ID: 310-280844-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	179		2.00	0.660	ug/L	1		6020B	Total/NA
Chromium	1.43	J	5.00	1.20	ug/L	1		6020B	Total/NA
Selenium	1.52	J	5.00	1.40	ug/L	1		6020B	Total/NA
Total Suspended Solids	2.25		1.88	1.39	mg/L	1		I-3765-85	Total/NA
Field Turbidity	3.50				NTU	1		Field Sampling	Total/NA

Client Sample ID: Trip Blank — Lab Sample ID: 310-280844-4

No Detections.

This Detection Summary does not include radiochemical test results.

Client: AECOM
Job ID: 310-280844-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: MW-319B
Lab Sample ID: 310-280844-1
Date Collected: 05/08/24 11:00
Matrix: Ground Water
Date Received: 05/09/24 10:40

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/18/24 19:43	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/18/24 19:43	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/18/24 19:43	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/18/24 19:43	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/18/24 19:43	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/18/24 19:43	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/18/24 19:43	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/18/24 19:43	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/18/24 19:43	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/18/24 19:43	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/18/24 19:43	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/18/24 19:43	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/18/24 19:43	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/18/24 19:43	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/18/24 19:43	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/18/24 19:43	1
Acetone	<3.10		10.0	3.10	ug/L			05/18/24 19:43	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/18/24 19:43	1
Benzene	<0.220		0.500	0.220	ug/L			05/18/24 19:43	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/18/24 19:43	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/18/24 19:43	1
Bromoform	<0.780		5.00	0.780	ug/L			05/18/24 19:43	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/18/24 19:43	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/18/24 19:43	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/18/24 19:43	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/18/24 19:43	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/18/24 19:43	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/18/24 19:43	1
Chloroform	<1.30		3.00	1.30	ug/L			05/18/24 19:43	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/18/24 19:43	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/18/24 19:43	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/18/24 19:43	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/18/24 19:43	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/18/24 19:43	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/18/24 19:43	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/18/24 19:43	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/18/24 19:43	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/18/24 19:43	1
Styrene	<0.370		1.00	0.370	ug/L			05/18/24 19:43	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/18/24 19:43	1
Toluene	<0.430		1.00	0.430	ug/L			05/18/24 19:43	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/18/24 19:43	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/18/24 19:43	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/18/24 19:43	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/18/24 19:43	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/18/24 19:43	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/18/24 19:43	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/18/24 19:43	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/18/24 19:43	1

Client: AECOM
Job ID: 310-280844-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: MW-319B
Lab Sample ID: 310-280844-1
Date Collected: 05/08/24 11:00
Matrix: Ground Water
Date Received: 05/09/24 10:40

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*102*		*73 - 130*		*05/18/24 19:43*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*05/18/24 19:43*	*1*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*		*05/18/24 19:43*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		05/13/24 09:00	05/21/24 18:16	1
Arsenic	<0.530		2.00	0.530	ug/L		05/13/24 09:00	05/21/24 18:16	1
Barium	**223**		2.00	0.660	ug/L		05/13/24 09:00	05/21/24 18:16	1
Beryllium	<0.330		1.00	0.330	ug/L		05/13/24 09:00	05/21/24 18:16	1
Cadmium	<0.100		0.200	0.100	ug/L		05/13/24 09:00	05/21/24 18:16	1
Chromium	**12.3**		5.00	1.20	ug/L		05/13/24 09:00	05/21/24 18:16	1
Cobalt	<0.170		0.500	0.170	ug/L		05/13/24 09:00	05/21/24 18:16	1
Copper	**2.54**	**J B**	5.00	1.80	ug/L		05/13/24 09:00	05/21/24 18:16	1
Lead	<0.260		0.500	0.260	ug/L		05/13/24 09:00	05/21/24 18:16	1
Nickel	**60.2**		5.00	2.10	ug/L		05/13/24 09:00	05/21/24 18:16	1
Selenium	<1.40		5.00	1.40	ug/L		05/13/24 09:00	05/21/24 18:16	1
Silver	<0.500		1.00	0.500	ug/L		05/13/24 09:00	05/21/24 18:16	1
Thallium	<0.570		1.00	0.570	ug/L		05/13/24 09:00	05/21/24 18:16	1
Vanadium	<1.10		5.00	1.10	ug/L		05/13/24 09:00	05/21/24 18:16	1
Zinc	<9.70		20.0	9.70	ug/L		05/13/24 09:00	05/21/24 18:16	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**4.75**		1.88	1.39	mg/L			05/11/24 10:11	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**6.36**				NTU			05/08/24 11:00	1

Client: AECOM
Job ID: 310-280844-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-414B
Lab Sample ID: 310-280844-2
Date Collected: 05/08/24 13:00
Matrix: Ground Water
Date Received: 05/09/24 10:40

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/18/24 20:04	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/18/24 20:04	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/18/24 20:04	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/18/24 20:04	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/18/24 20:04	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/18/24 20:04	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/18/24 20:04	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/18/24 20:04	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/18/24 20:04	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/18/24 20:04	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/18/24 20:04	1
1,2-Dichloropropane	**0.532**	**J**	1.00	0.270	ug/L			05/18/24 20:04	1
1,4-Dichlorobenzene	**1.84**		1.00	0.230	ug/L			05/18/24 20:04	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/18/24 20:04	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/18/24 20:04	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/18/24 20:04	1
Acetone	**4.20**	**J**	10.0	3.10	ug/L			05/18/24 20:04	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/18/24 20:04	1
Benzene	**1.98**		0.500	0.220	ug/L			05/18/24 20:04	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/18/24 20:04	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/18/24 20:04	1
Bromoform	<0.780		5.00	0.780	ug/L			05/18/24 20:04	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/18/24 20:04	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/18/24 20:04	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/18/24 20:04	1
Chlorobenzene	**0.912**	**J**	1.00	0.400	ug/L			05/18/24 20:04	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/18/24 20:04	1
Chloroethane	**1.23**	**J**	4.00	0.790	ug/L			05/18/24 20:04	1
Chloroform	<1.30		3.00	1.30	ug/L			05/18/24 20:04	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/18/24 20:04	1
cis-1,2-Dichloroethene	**6.98**		1.00	0.210	ug/L			05/18/24 20:04	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/18/24 20:04	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/18/24 20:04	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/18/24 20:04	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/18/24 20:04	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/18/24 20:04	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/18/24 20:04	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/18/24 20:04	1
Styrene	<0.370		1.00	0.370	ug/L			05/18/24 20:04	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/18/24 20:04	1
Toluene	<0.430		1.00	0.430	ug/L			05/18/24 20:04	1
trans-1,2-Dichloroethene	**0.328**	**J**	1.00	0.270	ug/L			05/18/24 20:04	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/18/24 20:04	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/18/24 20:04	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/18/24 20:04	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/18/24 20:04	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/18/24 20:04	1
Vinyl chloride	**0.900**	**J**	1.00	0.180	ug/L			05/18/24 20:04	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/18/24 20:04	1

Client: AECOM
Job ID: 310-280844-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-414B
Lab Sample ID: 310-280844-2

Date Collected: 05/08/24 13:00
Matrix: Ground Water

Date Received: 05/09/24 10:40

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*100*		*73 - 130*		*05/18/24 20:04*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*05/18/24 20:04*	*1*
4-Bromofluorobenzene (Surr)	*107*		*80 - 120*		*05/18/24 20:04*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		05/13/24 09:00	05/21/24 18:35	1
Arsenic	**9.85**		2.00	0.530	ug/L		05/13/24 09:00	05/21/24 18:35	1
Barium	**642**		2.00	0.660	ug/L		05/13/24 09:00	05/21/24 18:35	1
Beryllium	<0.330		1.00	0.330	ug/L		05/13/24 09:00	05/21/24 18:35	1
Cadmium	<0.100		0.200	0.100	ug/L		05/13/24 09:00	05/21/24 18:35	1
Chromium	<1.20		5.00	1.20	ug/L		05/13/24 09:00	05/21/24 18:35	1
Cobalt	**19.1**		0.500	0.170	ug/L		05/13/24 09:00	05/21/24 18:35	1
Copper	**2.74**	**J B**	5.00	1.80	ug/L		05/13/24 09:00	05/21/24 18:35	1
Lead	<0.260		0.500	0.260	ug/L		05/13/24 09:00	05/21/24 18:35	1
Nickel	**67.2**		5.00	2.10	ug/L		05/13/24 09:00	05/21/24 18:35	1
Selenium	<1.40		5.00	1.40	ug/L		05/13/24 09:00	05/21/24 18:35	1
Silver	<0.500		1.00	0.500	ug/L		05/13/24 09:00	05/21/24 18:35	1
Thallium	<0.570		1.00	0.570	ug/L		05/13/24 09:00	05/21/24 18:35	1
Vanadium	<1.10		5.00	1.10	ug/L		05/13/24 09:00	05/21/24 18:35	1
Zinc	<9.70		20.0	9.70	ug/L		05/13/24 09:00	05/21/24 18:35	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**34.7**		5.00	3.70	mg/L			05/11/24 10:11	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**1.01**				NTU			05/08/24 13:00	1

Client: AECOM
Job ID: 310-280844-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-101B
Lab Sample ID: 310-280844-3
Date Collected: 05/08/24 10:00
Matrix: Ground Water
Date Received: 05/09/24 10:40

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/18/24 20:26	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/18/24 20:26	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/18/24 20:26	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/18/24 20:26	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/18/24 20:26	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/18/24 20:26	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/18/24 20:26	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/18/24 20:26	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/18/24 20:26	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/18/24 20:26	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/18/24 20:26	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/18/24 20:26	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/18/24 20:26	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/18/24 20:26	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/18/24 20:26	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/18/24 20:26	1
Acetone	<3.10		10.0	3.10	ug/L			05/18/24 20:26	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/18/24 20:26	1
Benzene	<0.220		0.500	0.220	ug/L			05/18/24 20:26	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/18/24 20:26	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/18/24 20:26	1
Bromoform	<0.780		5.00	0.780	ug/L			05/18/24 20:26	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/18/24 20:26	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/18/24 20:26	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/18/24 20:26	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/18/24 20:26	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/18/24 20:26	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/18/24 20:26	1
Chloroform	<1.30		3.00	1.30	ug/L			05/18/24 20:26	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/18/24 20:26	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/18/24 20:26	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/18/24 20:26	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/18/24 20:26	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/18/24 20:26	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/18/24 20:26	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/18/24 20:26	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/18/24 20:26	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/18/24 20:26	1
Styrene	<0.370		1.00	0.370	ug/L			05/18/24 20:26	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/18/24 20:26	1
Toluene	<0.430		1.00	0.430	ug/L			05/18/24 20:26	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/18/24 20:26	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/18/24 20:26	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/18/24 20:26	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/18/24 20:26	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/18/24 20:26	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/18/24 20:26	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/18/24 20:26	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/18/24 20:26	1

Client: AECOM
Job ID: 310-280844-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-101B
Lab Sample ID: 310-280844-3

Date Collected: 05/08/24 10:00
Matrix: Ground Water

Date Received: 05/09/24 10:40

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*102*		*73 - 130*		*05/18/24 20:26*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*05/18/24 20:26*	*1*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*		*05/18/24 20:26*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		05/13/24 09:00	05/21/24 18:37	1
Arsenic	<0.530		2.00	0.530	ug/L		05/13/24 09:00	05/21/24 18:37	1
Barium	**179**		2.00	0.660	ug/L		05/13/24 09:00	05/21/24 18:37	1
Beryllium	<0.330		1.00	0.330	ug/L		05/13/24 09:00	05/21/24 18:37	1
Cadmium	<0.100		0.200	0.100	ug/L		05/13/24 09:00	05/21/24 18:37	1
Chromium	**1.43**	**J**	5.00	1.20	ug/L		05/13/24 09:00	05/21/24 18:37	1
Cobalt	<0.170		0.500	0.170	ug/L		05/13/24 09:00	05/21/24 18:37	1
Copper	<1.80		5.00	1.80	ug/L		05/13/24 09:00	05/21/24 18:37	1
Lead	<0.260		0.500	0.260	ug/L		05/13/24 09:00	05/21/24 18:37	1
Nickel	<2.10		5.00	2.10	ug/L		05/13/24 09:00	05/21/24 18:37	1
Selenium	**1.52**	**J**	5.00	1.40	ug/L		05/13/24 09:00	05/21/24 18:37	1
Silver	<0.500		1.00	0.500	ug/L		05/13/24 09:00	05/21/24 18:37	1
Thallium	<0.570		1.00	0.570	ug/L		05/13/24 09:00	05/21/24 18:37	1
Vanadium	<1.10		5.00	1.10	ug/L		05/13/24 09:00	05/21/24 18:37	1
Zinc	<9.70		20.0	9.70	ug/L		05/13/24 09:00	05/21/24 18:37	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**2.25**		1.88	1.39	mg/L			05/11/24 10:11	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**3.50**				NTU			05/08/24 10:00	1

Client: AECOM
Job ID: 310-280844-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Trip Blank
Lab Sample ID: 310-280844-4
Date Collected: 05/08/24 06:00
Matrix: Water
Date Received: 05/09/24 10:40

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/18/24 16:49	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/18/24 16:49	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/18/24 16:49	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/18/24 16:49	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/18/24 16:49	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/18/24 16:49	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/18/24 16:49	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/18/24 16:49	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/18/24 16:49	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/18/24 16:49	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/18/24 16:49	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/18/24 16:49	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/18/24 16:49	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/18/24 16:49	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/18/24 16:49	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/18/24 16:49	1
Acetone	<3.10		10.0	3.10	ug/L			05/18/24 16:49	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/18/24 16:49	1
Benzene	<0.220		0.500	0.220	ug/L			05/18/24 16:49	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/18/24 16:49	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/18/24 16:49	1
Bromoform	<0.780		5.00	0.780	ug/L			05/18/24 16:49	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/18/24 16:49	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/18/24 16:49	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/18/24 16:49	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/18/24 16:49	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/18/24 16:49	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/18/24 16:49	1
Chloroform	<1.30		3.00	1.30	ug/L			05/18/24 16:49	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/18/24 16:49	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/18/24 16:49	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/18/24 16:49	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/18/24 16:49	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/18/24 16:49	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/18/24 16:49	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/18/24 16:49	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/18/24 16:49	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/18/24 16:49	1
Styrene	<0.370		1.00	0.370	ug/L			05/18/24 16:49	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/18/24 16:49	1
Toluene	<0.430		1.00	0.430	ug/L			05/18/24 16:49	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/18/24 16:49	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/18/24 16:49	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/18/24 16:49	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/18/24 16:49	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/18/24 16:49	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/18/24 16:49	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/18/24 16:49	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/18/24 16:49	1

Client: AECOM
Job ID: 310-280844-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Trip Blank
Lab Sample ID: 310-280844-4
Date Collected: 05/08/24 06:00
Matrix: Water
Date Received: 05/09/24 10:40

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	99		73 - 130		05/18/24 16:49	1
Toluene-d8 (Surr)	99		80 - 120		05/18/24 16:49	1
4-Bromofluorobenzene (Surr)	104		80 - 120		05/18/24 16:49	1

Definitions/Glossary

Client: AECOM
Job ID: 310-280844-1
Project/Site: Black Hawk County Landfill (IDNR)

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Surrogate Summary

Client: AECOM
Job ID: 310-280844-1
Project/Site: Black Hawk County Landfill (IDNR)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Ground Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-280844-1	MW-319B	102	97	104
310-280844-2	OW-414B	100	99	107
310-280844-2 MS	OW-414B	96	102	99
310-280844-2 MSD	OW-414B	98	104	100
310-280844-3	OW-101B	102	99	104

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-280844-4	Trip Blank	99	99	104
LCS 310-422006/6	Lab Control Sample	96	104	102
LCS 310-422006/7	Lab Control Sample	99	100	107
MB 310-422006/5	Method Blank	99	99	106

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 310-422006/5
Matrix: Water
Analysis Batch: 422006

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/18/24 15:43	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/18/24 15:43	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/18/24 15:43	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/18/24 15:43	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/18/24 15:43	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/18/24 15:43	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/18/24 15:43	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/18/24 15:43	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/18/24 15:43	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/18/24 15:43	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/18/24 15:43	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/18/24 15:43	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/18/24 15:43	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/18/24 15:43	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/18/24 15:43	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/18/24 15:43	1
Acetone	<3.10		10.0	3.10	ug/L			05/18/24 15:43	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/18/24 15:43	1
Benzene	<0.220		0.500	0.220	ug/L			05/18/24 15:43	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/18/24 15:43	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/18/24 15:43	1
Bromoform	<0.780		5.00	0.780	ug/L			05/18/24 15:43	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/18/24 15:43	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/18/24 15:43	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/18/24 15:43	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/18/24 15:43	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/18/24 15:43	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/18/24 15:43	1
Chloroform	<1.30		3.00	1.30	ug/L			05/18/24 15:43	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/18/24 15:43	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/18/24 15:43	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/18/24 15:43	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/18/24 15:43	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/18/24 15:43	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/18/24 15:43	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/18/24 15:43	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/18/24 15:43	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/18/24 15:43	1
Styrene	<0.370		1.00	0.370	ug/L			05/18/24 15:43	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/18/24 15:43	1
Toluene	<0.430		1.00	0.430	ug/L			05/18/24 15:43	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/18/24 15:43	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/18/24 15:43	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/18/24 15:43	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/18/24 15:43	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/18/24 15:43	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/18/24 15:43	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/18/24 15:43	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-422006/5
Matrix: Water
Analysis Batch: 422006

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/18/24 15:43	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*99*		*73 - 130*		*05/18/24 15:43*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*05/18/24 15:43*	*1*
4-Bromofluorobenzene (Surr)	*106*		*80 - 120*		*05/18/24 15:43*	*1*

Lab Sample ID: LCS 310-422006/6
Matrix: Water
Analysis Batch: 422006

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	20.0	18.73		ug/L		94	71 - 120
1,1,1-Trichloroethane	20.0	18.13		ug/L		91	73 - 129
1,1,2,2-Tetrachloroethane	20.0	19.14		ug/L		96	68 - 124
1,1,2-Trichloroethane	20.0	19.41		ug/L		97	73 - 123
1,1-Dichloroethane	20.0	18.78		ug/L		94	70 - 127
1,1-Dichloroethene	20.0	18.66		ug/L		93	63 - 132
1,2,3-Trichloropropane	20.0	18.64		ug/L		93	65 - 127
1,2-Dibromo-3-Chloropropane	20.0	19.60		ug/L		98	50 - 150
1,2-Dibromoethane (EDB)	20.0	18.45		ug/L		92	75 - 125
1,2-Dichlorobenzene	20.0	19.45		ug/L		97	74 - 120
1,2-Dichloroethane	20.0	17.41		ug/L		87	71 - 125
1,2-Dichloropropane	20.0	19.90		ug/L		100	73 - 124
1,4-Dichlorobenzene	20.0	18.68		ug/L		93	72 - 120
2-Butanone (MEK)	40.0	39.80		ug/L		100	50 - 150
2-Hexanone	40.0	37.42		ug/L		94	60 - 140
4-Methyl-2-pentanone (MIBK)	40.0	37.69		ug/L		94	60 - 139
Acetone	40.0	38.50		ug/L		96	50 - 150
Acrylonitrile	200	197.3		ug/L		99	50 - 150
Benzene	20.0	19.32		ug/L		97	72 - 124
Bromochloromethane	20.0	18.02		ug/L		90	73 - 130
Bromodichloromethane	20.0	17.92		ug/L		90	74 - 122
Bromoform	20.0	17.16		ug/L		86	61 - 122
Carbon disulfide	20.0	19.79		ug/L		99	59 - 135
Carbon tetrachloride	20.0	18.10		ug/L		91	67 - 132
Chlorobenzene	20.0	18.87		ug/L		94	76 - 120
Chlorodibromomethane	20.0	17.74		ug/L		89	71 - 121
Chloroform	20.0	18.78		ug/L		94	72 - 125
cis-1,2-Dichloroethene	20.0	18.51		ug/L		93	74 - 123
cis-1,3-Dichloropropene	20.0	19.12		ug/L		96	71 - 125
Dibromomethane	20.0	18.01		ug/L		90	74 - 125
Ethylbenzene	20.0	20.09		ug/L		100	74 - 122
Iodomethane	20.0	17.51		ug/L		88	10 - 150
Methylene Chloride	20.0	20.64		ug/L		103	50 - 150
Styrene	20.0	19.25		ug/L		96	74 - 121
Tetrachloroethene	20.0	18.59		ug/L		93	71 - 130
Toluene	20.0	18.63		ug/L		93	74 - 123

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-422006/6
Matrix: Water
Analysis Batch: 422006

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
trans-1,2-Dichloroethene	20.0	18.51		ug/L		93	70 - 126
trans-1,3-Dichloropropene	20.0	18.30		ug/L		91	69 - 123
trans-1,4-Dichloro-2-butene	20.0	18.55		ug/L		93	50 - 150
Trichloroethene	20.0	19.21		ug/L		96	72 - 126
Vinyl acetate	40.0	34.85		ug/L		87	50 - 150
Xylenes, Total	40.0	39.28		ug/L		98	73 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*96*		*73 - 130*
Toluene-d8 (Surr)	*104*		*80 - 120*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*

Lab Sample ID: LCS 310-422006/7
Matrix: Water
Analysis Batch: 422006

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	21.01		ug/L		105	23 - 150
Chloroethane	20.0	21.19		ug/L		106	54 - 136
Chloromethane	20.0	23.66		ug/L		118	38 - 150
Trichlorofluoromethane	20.0	20.44		ug/L		102	54 - 149
Vinyl chloride	20.0	22.92		ug/L		115	56 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*99*		*73 - 130*
Toluene-d8 (Surr)	*100*		*80 - 120*
4-Bromofluorobenzene (Surr)	*107*		*80 - 120*

Lab Sample ID: 310-280844-2 MS
Matrix: Ground Water
Analysis Batch: 422006

Client Sample ID: OW-414B
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	<0.380		25.0	21.44		ug/L		86	55 - 130
1,1,1-Trichloroethane	<0.190		25.0	21.15		ug/L		85	52 - 130
1,1,2,2-Tetrachloroethane	<0.470		25.0	22.43		ug/L		90	54 - 130
1,1,2-Trichloroethane	<0.450		25.0	22.29		ug/L		89	58 - 130
1,1-Dichloroethane	<0.220		25.0	22.21		ug/L		89	49 - 130
1,1-Dichloroethene	<0.560		25.0	22.33		ug/L		89	37 - 132
1,2,3-Trichloropropane	<0.590		25.0	21.79		ug/L		87	49 - 130
1,2-Dibromo-3-Chloropropane	<1.20		25.0	23.57		ug/L		94	38 - 150
1,2-Dibromoethane (EDB)	<0.340		25.0	21.54		ug/L		86	60 - 130
1,2-Dichlorobenzene	<0.370		25.0	23.28		ug/L		93	59 - 130
1,2-Dichloroethane	<0.390		25.0	20.34		ug/L		81	51 - 130
1,2-Dichloropropane	0.532	J	25.0	23.43		ug/L		92	57 - 130
1,4-Dichlorobenzene	1.84		25.0	24.04		ug/L		89	57 - 130
2-Butanone (MEK)	<2.10		50.0	46.70		ug/L		93	38 - 150
2-Hexanone	<2.00		50.0	42.83		ug/L		86	46 - 140

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 310-280844-2 MS
Matrix: Ground Water
Analysis Batch: 422006

Client Sample ID: OW-414B
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
4-Methyl-2-pentanone (MIBK)	<2.10		50.0	45.68		ug/L		91	47 - 139
Acetone	4.20	J	50.0	43.10		ug/L		78	31 - 150
Acrylonitrile	<2.20		250	230.7		ug/L		92	40 - 150
Benzene	1.98		25.0	24.21		ug/L		89	46 - 130
Bromochloromethane	<0.540		25.0	21.44		ug/L		86	57 - 130
Bromodichloromethane	<0.390		25.0	21.16		ug/L		85	57 - 130
Bromoform	<0.780		25.0	20.53		ug/L		82	44 - 130
Carbon disulfide	<0.450		25.0	24.74		ug/L		99	38 - 135
Carbon tetrachloride	<0.650		25.0	21.33		ug/L		85	45 - 132
Chlorobenzene	0.912	J	25.0	23.03		ug/L		88	59 - 130
Chlorodibromomethane	<0.750		25.0	20.44		ug/L		82	54 - 130
Chloroform	<1.30		25.0	21.77		ug/L		87	51 - 130
cis-1,2-Dichloroethene	6.98		25.0	28.35		ug/L		85	45 - 130
cis-1,3-Dichloropropene	<0.250		25.0	21.50		ug/L		86	53 - 130
Dibromomethane	<0.330		25.0	21.33		ug/L		85	59 - 130
Ethylbenzene	<0.310		25.0	23.46		ug/L		94	45 - 130
Iodomethane	<7.00		25.0	20.66		ug/L		83	10 - 150
Methylene Chloride	<1.70		25.0	24.19		ug/L		97	37 - 150
Styrene	<0.370		25.0	22.79		ug/L		91	47 - 130
Tetrachloroethene	<0.480		25.0	21.61		ug/L		86	47 - 130
Toluene	<0.430		25.0	22.06		ug/L		88	51 - 130
trans-1,2-Dichloroethene	0.328	J	25.0	22.30		ug/L		88	48 - 130
trans-1,3-Dichloropropene	<0.560		25.0	21.00		ug/L		84	50 - 130
trans-1,4-Dichloro-2-butene	<1.10		25.0	21.20		ug/L		85	26 - 150
Trichloroethene	<0.430		25.0	22.67		ug/L		91	51 - 130
Vinyl acetate	<2.50		50.0	40.09		ug/L		80	29 - 150
Xylenes, Total	<0.400		50.0	46.44		ug/L		93	43 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*96*		*73 - 130*
Toluene-d8 (Surr)	*102*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*

Lab Sample ID: 310-280844-2 MSD
Matrix: Ground Water
Analysis Batch: 422006

Client Sample ID: OW-414B
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	<0.380		25.0	20.21		ug/L		81	55 - 130	6	20
1,1,1-Trichloroethane	<0.190		25.0	19.33		ug/L		77	52 - 130	9	20
1,1,2,2-Tetrachloroethane	<0.470		25.0	21.11		ug/L		84	54 - 130	6	20
1,1,2-Trichloroethane	<0.450		25.0	20.68		ug/L		83	58 - 130	7	20
1,1-Dichloroethane	<0.220		25.0	20.65		ug/L		83	49 - 130	7	20
1,1-Dichloroethene	<0.560		25.0	20.16		ug/L		81	37 - 132	10	26
1,2,3-Trichloropropane	<0.590		25.0	20.49		ug/L		82	49 - 130	6	26
1,2-Dibromo-3-Chloropropane	<1.20		25.0	22.08		ug/L		88	38 - 150	7	20
1,2-Dibromoethane (EDB)	<0.340		25.0	19.45		ug/L		78	60 - 130	10	20
1,2-Dichlorobenzene	<0.370		25.0	21.77		ug/L		87	59 - 130	7	20

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 310-280844-2 MSD
Matrix: Ground Water
Analysis Batch: 422006

Client Sample ID: OW-414B
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2-Dichloroethane	<0.390		25.0	18.93		ug/L		76	51 - 130	7	20
1,2-Dichloropropane	0.532	J	25.0	21.53		ug/L		84	57 - 130	8	20
1,4-Dichlorobenzene	1.84		25.0	22.61		ug/L		83	57 - 130	6	20
2-Butanone (MEK)	<2.10		50.0	44.97		ug/L		90	38 - 150	4	20
2-Hexanone	<2.00		50.0	38.83		ug/L		78	46 - 140	10	20
4-Methyl-2-pentanone (MIBK)	<2.10		50.0	43.07		ug/L		86	47 - 139	6	20
Acetone	4.20	J	50.0	43.05		ug/L		78	31 - 150	0	29
Acrylonitrile	<2.20		250	222.6		ug/L		89	40 - 150	4	20
Benzene	1.98		25.0	22.14		ug/L		81	46 - 130	9	20
Bromochloromethane	<0.540		25.0	19.77		ug/L		79	57 - 130	8	20
Bromodichloromethane	<0.390		25.0	19.41		ug/L		78	57 - 130	9	20
Bromoform	<0.780		25.0	19.13		ug/L		77	44 - 130	7	20
Carbon disulfide	<0.450		25.0	21.88		ug/L		88	38 - 135	12	30
Carbon tetrachloride	<0.650		25.0	19.64		ug/L		79	45 - 132	8	20
Chlorobenzene	0.912	J	25.0	21.28		ug/L		81	59 - 130	8	20
Chlorodibromomethane	<0.750		25.0	18.85		ug/L		75	54 - 130	8	20
Chloroform	<1.30		25.0	19.33		ug/L		77	51 - 130	12	20
cis-1,2-Dichloroethene	6.98		25.0	25.93		ug/L		76	45 - 130	9	20
cis-1,3-Dichloropropene	<0.250		25.0	19.99		ug/L		80	53 - 130	7	20
Dibromomethane	<0.330		25.0	20.20		ug/L		81	59 - 130	5	20
Ethylbenzene	<0.310		25.0	21.78		ug/L		87	45 - 130	7	20
Iodomethane	<7.00		25.0	23.47		ug/L		94	10 - 150	13	35
Methylene Chloride	<1.70		25.0	22.09		ug/L		88	37 - 150	9	24
Styrene	<0.370		25.0	21.32		ug/L		85	47 - 130	7	20
Tetrachloroethene	<0.480		25.0	19.55		ug/L		78	47 - 130	10	20
Toluene	<0.430		25.0	19.75		ug/L		79	51 - 130	11	20
trans-1,2-Dichloroethene	0.328	J	25.0	20.00		ug/L		79	48 - 130	11	22
trans-1,3-Dichloropropene	<0.560		25.0	19.56		ug/L		78	50 - 130	7	20
trans-1,4-Dichloro-2-butene	<1.10		25.0	19.75		ug/L		79	26 - 150	7	23
Trichloroethene	<0.430		25.0	20.47		ug/L		82	51 - 130	10	20
Vinyl acetate	<2.50		50.0	38.84		ug/L		78	29 - 150	3	23
Xylenes, Total	<0.400		50.0	43.30		ug/L		87	43 - 130	7	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*98*		*73 - 130*
Toluene-d8 (Surr)	*104*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-421325/1-A
Matrix: Water
Analysis Batch: 422392

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 421325

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		05/13/24 09:00	05/21/24 18:11	1
Arsenic	<0.530		2.00	0.530	ug/L		05/13/24 09:00	05/21/24 18:11	1
Barium	<0.660		2.00	0.660	ug/L		05/13/24 09:00	05/21/24 18:11	1
Beryllium	<0.330		1.00	0.330	ug/L		05/13/24 09:00	05/21/24 18:11	1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 310-421325/1-A
Matrix: Water
Analysis Batch: 422392

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 421325

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	<0.100		0.200	0.100	ug/L		05/13/24 09:00	05/21/24 18:11	1
Chromium	<1.20		5.00	1.20	ug/L		05/13/24 09:00	05/21/24 18:11	1
Cobalt	<0.170		0.500	0.170	ug/L		05/13/24 09:00	05/21/24 18:11	1
Copper	2.193	J	5.00	1.80	ug/L		05/13/24 09:00	05/21/24 18:11	1
Lead	<0.260		0.500	0.260	ug/L		05/13/24 09:00	05/21/24 18:11	1
Nickel	<2.10		5.00	2.10	ug/L		05/13/24 09:00	05/21/24 18:11	1
Selenium	<1.40		5.00	1.40	ug/L		05/13/24 09:00	05/21/24 18:11	1
Silver	<0.500		1.00	0.500	ug/L		05/13/24 09:00	05/21/24 18:11	1
Thallium	<0.570		1.00	0.570	ug/L		05/13/24 09:00	05/21/24 18:11	1
Vanadium	<1.10		5.00	1.10	ug/L		05/13/24 09:00	05/21/24 18:11	1
Zinc	<9.70		20.0	9.70	ug/L		05/13/24 09:00	05/21/24 18:11	1

Lab Sample ID: LCS 310-421325/2-A
Matrix: Water
Analysis Batch: 422392

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 421325

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	200	212.5		ug/L		106	80 - 120
Barium	100	113.4		ug/L		113	80 - 120
Beryllium	100	104.3		ug/L		104	80 - 120
Cadmium	100	106.6		ug/L		107	80 - 120
Chromium	100	99.59		ug/L		100	80 - 120
Cobalt	100	110.9		ug/L		111	80 - 120
Copper	200	225.2		ug/L		113	80 - 120
Lead	200	215.7		ug/L		108	80 - 120
Nickel	200	215.8		ug/L		108	80 - 120
Selenium	400	406.9		ug/L		102	80 - 120
Silver	100	113.1		ug/L		113	80 - 120
Thallium	100	118.1		ug/L		118	80 - 120
Vanadium	100	107.0		ug/L		107	80 - 120
Zinc	200	212.2		ug/L		106	80 - 120

Lab Sample ID: LCS 310-421325/2-A
Matrix: Water
Analysis Batch: 422521

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 421325

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	200	240.1		ug/L		120	80 - 120

Lab Sample ID: 310-280844-1 MS
Matrix: Ground Water
Analysis Batch: 422392

Client Sample ID: MW-319B
Prep Type: Total/NA
Prep Batch: 421325

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	<1.00		200	234.1		ug/L		117	75 - 125
Arsenic	<0.530		200	203.3		ug/L		102	75 - 125
Barium	223		100	325.2		ug/L		102	75 - 125
Beryllium	<0.330		100	103.6		ug/L		104	75 - 125
Cadmium	<0.100		100	100.8		ug/L		101	75 - 125

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: 310-280844-1 MS
Matrix: Ground Water
Analysis Batch: 422392

Client Sample ID: MW-319B
Prep Type: Total/NA
Prep Batch: 421325

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chromium	12.3		100	105.7		ug/L		93	75 - 125
Cobalt	<0.170		100	94.29		ug/L		94	75 - 125
Copper	2.54	J B	200	207.8		ug/L		103	75 - 125
Lead	<0.260		200	202.4		ug/L		101	75 - 125
Nickel	60.2		200	258.1		ug/L		99	75 - 125
Selenium	<1.40		400	396.6		ug/L		99	75 - 125
Silver	<0.500		100	96.79		ug/L		97	75 - 125
Thallium	<0.570		100	111.8		ug/L		112	75 - 125
Vanadium	<1.10		100	102.7		ug/L		103	75 - 125
Zinc	<9.70		200	202.3		ug/L		101	75 - 125

Lab Sample ID: 310-280844-1 MS
Matrix: Ground Water
Analysis Batch: 422521

Client Sample ID: MW-319B
Prep Type: Total/NA
Prep Batch: 421325

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	<1.00		200	235.1		ug/L		118	75 - 125

Lab Sample ID: 310-280844-1 MSD
Matrix: Ground Water
Analysis Batch: 422392

Client Sample ID: MW-319B
Prep Type: Total/NA
Prep Batch: 421325

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Antimony	<1.00		200	237.0		ug/L		118	75 - 125	1	20
Arsenic	<0.530		200	205.0		ug/L		102	75 - 125	1	20
Barium	223		100	329.2		ug/L		106	75 - 125	1	20
Beryllium	<0.330		100	104.7		ug/L		105	75 - 125	1	20
Cadmium	<0.100		100	102.2		ug/L		102	75 - 125	1	20
Chromium	12.3		100	107.1		ug/L		95	75 - 125	1	20
Cobalt	<0.170		100	95.28		ug/L		95	75 - 125	1	20
Copper	2.54	J B	200	209.5		ug/L		103	75 - 125	1	20
Lead	<0.260		200	208.4		ug/L		104	75 - 125	3	20
Nickel	60.2		200	261.5		ug/L		101	75 - 125	1	20
Selenium	<1.40		400	401.1		ug/L		100	75 - 125	1	20
Silver	<0.500		100	101.6		ug/L		102	75 - 125	5	20
Thallium	<0.570		100	113.6		ug/L		114	75 - 125	2	20
Vanadium	<1.10		100	103.3		ug/L		103	75 - 125	1	20
Zinc	<9.70		200	205.4		ug/L		103	75 - 125	1	20

Lab Sample ID: 310-280844-1 MSD
Matrix: Ground Water
Analysis Batch: 422521

Client Sample ID: MW-319B
Prep Type: Total/NA
Prep Batch: 421325

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Antimony	<1.00		200	241.3		ug/L		121	75 - 125	3	20

Client: AECOM
Job ID: 310-280844-1
Project/Site: Black Hawk County Landfill (IDNR)

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: MB 310-421386/1
Matrix: Water
Analysis Batch: 421386

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<3.70		5.00	3.70	mg/L			05/11/24 10:11	1

Lab Sample ID: LCS 310-421386/2
Matrix: Water
Analysis Batch: 421386

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	116.0		mg/L		116	75 - 116

QC Association Summary

Client: AECOM
Job ID: 310-280844-1
Project/Site: Black Hawk County Landfill (IDNR)

GC/MS VOA

Analysis Batch: 422006

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280844-1	MW-319B	Total/NA	Ground Water	8260D	
310-280844-2	OW-414B	Total/NA	Ground Water	8260D	
310-280844-3	OW-101B	Total/NA	Ground Water	8260D	
310-280844-4	Trip Blank	Total/NA	Water	8260D	
MB 310-422006/5	Method Blank	Total/NA	Water	8260D	
LCS 310-422006/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-422006/7	Lab Control Sample	Total/NA	Water	8260D	
310-280844-2 MS	OW-414B	Total/NA	Ground Water	8260D	
310-280844-2 MSD	OW-414B	Total/NA	Ground Water	8260D	

Metals

Prep Batch: 421325

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280844-1	MW-319B	Total/NA	Ground Water	3005A	
310-280844-2	OW-414B	Total/NA	Ground Water	3005A	
310-280844-3	OW-101B	Total/NA	Ground Water	3005A	
MB 310-421325/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-421325/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-280844-1 MS	MW-319B	Total/NA	Ground Water	3005A	
310-280844-1 MSD	MW-319B	Total/NA	Ground Water	3005A	

Analysis Batch: 422392

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280844-1	MW-319B	Total/NA	Ground Water	6020B	421325
310-280844-2	OW-414B	Total/NA	Ground Water	6020B	421325
310-280844-3	OW-101B	Total/NA	Ground Water	6020B	421325
MB 310-421325/1-A	Method Blank	Total/NA	Water	6020B	421325
LCS 310-421325/2-A	Lab Control Sample	Total/NA	Water	6020B	421325
310-280844-1 MS	MW-319B	Total/NA	Ground Water	6020B	421325
310-280844-1 MSD	MW-319B	Total/NA	Ground Water	6020B	421325

Analysis Batch: 422521

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 310-421325/2-A	Lab Control Sample	Total/NA	Water	6020B	421325
310-280844-1 MS	MW-319B	Total/NA	Ground Water	6020B	421325
310-280844-1 MSD	MW-319B	Total/NA	Ground Water	6020B	421325

General Chemistry

Analysis Batch: 421386

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280844-1	MW-319B	Total/NA	Ground Water	I-3765-85	
310-280844-2	OW-414B	Total/NA	Ground Water	I-3765-85	
310-280844-3	OW-101B	Total/NA	Ground Water	I-3765-85	
MB 310-421386/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-421386/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Field Service / Mobile Lab

Analysis Batch: 421742

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280844-1	MW-319B	Total/NA	Ground Water	Field Sampling	
310-280844-2	OW-414B	Total/NA	Ground Water	Field Sampling	
310-280844-3	OW-101B	Total/NA	Ground Water	Field Sampling	

Lab Chronicle

Client: AECOM
Job ID: 310-280844-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: MW-319B
Lab Sample ID: 310-280844-1
Date Collected: 05/08/24 11:00
Matrix: Ground Water
Date Received: 05/09/24 10:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	422006	WSE8	EET CF	05/18/24 19:43
Total/NA	Prep	3005A			421325	KM3E	EET CF	05/13/24 09:00
Total/NA	Analysis	6020B		1	422392	NFT2	EET CF	05/21/24 18:16
Total/NA	Analysis	I-3765-85		1	421386	D7CP	EET CF	05/11/24 10:11
Total/NA	Analysis	Field Sampling		1	421742	BJ0R	EET CF	05/08/24 11:00

Client Sample ID: OW-414B
Lab Sample ID: 310-280844-2
Date Collected: 05/08/24 13:00
Matrix: Ground Water
Date Received: 05/09/24 10:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	422006	WSE8	EET CF	05/18/24 20:04
Total/NA	Prep	3005A			421325	KM3E	EET CF	05/13/24 09:00
Total/NA	Analysis	6020B		1	422392	NFT2	EET CF	05/21/24 18:35
Total/NA	Analysis	I-3765-85		1	421386	D7CP	EET CF	05/11/24 10:11
Total/NA	Analysis	Field Sampling		1	421742	BJ0R	EET CF	05/08/24 13:00

Client Sample ID: OW-101B
Lab Sample ID: 310-280844-3
Date Collected: 05/08/24 10:00
Matrix: Ground Water
Date Received: 05/09/24 10:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	422006	WSE8	EET CF	05/18/24 20:26
Total/NA	Prep	3005A			421325	KM3E	EET CF	05/13/24 09:00
Total/NA	Analysis	6020B		1	422392	NFT2	EET CF	05/21/24 18:37
Total/NA	Analysis	I-3765-85		1	421386	D7CP	EET CF	05/11/24 10:11
Total/NA	Analysis	Field Sampling		1	421742	BJ0R	EET CF	05/08/24 10:00

Client Sample ID: Trip Blank
Lab Sample ID: 310-280844-4
Date Collected: 05/08/24 06:00
Matrix: Water
Date Received: 05/09/24 10:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	422006	WSE8	EET CF	05/18/24 16:49

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Accreditation/Certification Summary

Client: AECOM
Job ID: 310-280844-1
Project/Site: Black Hawk County Landfill (IDNR)

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8260D		Ground Water	m,p-Xylene
8260D		Ground Water	o-Xylene
8260D		Water	m,p-Xylene
8260D		Water	o-Xylene
Field Sampling		Ground Water	Field Turbidity

Method Summary

Client: AECOM
Job ID: 310-280844-1
Project/Site: Black Hawk County Landfill (IDNR)

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
Field Sampling	Field Sampling	EPA	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
5030B	Purge and Trap	SW846	EET CF

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

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310-280844 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: AECOM			
City/State: CITY Waterloo	STATE IA	Project: BHC FDNR	
Receipt Information			
Date/Time Received: 5/8 24	DATE	TIME 1040	Received By: TD
Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ Lab Field Services ☑ Client Drop-off ☐ Other:_____			
Condition of Cooler/Containers			
Sample(s) received in Cooler? ☑ Yes ☐ No		*If yes:* Cooler ID:	
Multiple Coolers? ☐ Yes ☑ No		*If yes:* Cooler # _____ of _____	
Cooler Custody Seals Present? ☐ Yes ☑ No		*If yes:* Cooler custody seals intact? ☐ Yes ☐ No	
Sample Custody Seals Present? ☐ Yes ☑ No		*If yes:* Sample custody seals intact? ☐ Yes ☐ No	
Trip Blank Present? ☑ Yes ☐ No		*If yes:* Which VOA samples are in cooler? ↓	
Temperature Record			
Coolant: ☑ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE			
Thermometer ID: X		Correction Factor (°C): 0.0	
• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C): 1.3		Corrected Temp (°C): 1.3	
• **Sample Container Temperature**			
Container(s) used:	CONTAINER 1	CONTAINER 2	
Uncorrected Temp (°C):			
Corrected Temp (°C):			
Exceptions Noted			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No			
2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No			
NOTE If yes, contact PM before proceeding If no, proceed with login			
Additional Comments			

Eurofins Cedar Falls
3019 Venture Way

Cedar Falls, IA 50613
phone 319.277 2401 fax 319.277 2425

Chain of Custody Record

eurofins Environment Testing America

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other IDNR

Eurofins Environment Testing America

Client Contact	Project Manager: Chris Oelkers	Site Contact:	Date: 5-9-24	COC No
AECOM	Email Christopher Oelkers@aecom com			1 of 3 COCs
501 Sycamore Street, Suite 222	Tel/Fax:319-296-6878	Lab Contact:	Carrier:	TALS Project #
Waterloo, IA 50703	Analysis Turnaround Time			Sampler
(319) 232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(xxx) xxx-xxxx FAX	TAT if different from Below ____			Walk-in Client.
Project Name Black Hawk Co IDNR	☑ 2 weeks			Lab Sampling
Site Black Hawk County Landfill	☐ 1 week			Job / SDG No
P O #	☐ 2 days			
	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	Appendix I, TSS	Appendix II, TSS	2,4-D	4,4'-DDD	beta-BHC	delta BHC	Endosulfan I	Endosulfan sulfate	Endrin aldehyde	Silvex	Sulfide							Sample Specific Notes
OW-220B			G	GW		N		X		X							X								
OW-221B			G	GW		N		X																	
OW-222B			G	GW		N		X																	
OW-223B			G	GW		N		X																	
OW-224B			G	GW		N		X																	
OW-225B			G	GW		N		X																	
OW-226B			G	GW		N		X										X							
OW-227B			G	GW		N		X										X							
MW-319B	5-8-24	1100	G	GW	5	N		X																	Turbidity - 6.36 NTU
MW-320B			G	GW		N		X																	
Equipment Blank-1			G	GW		N		X																	
MW-319B-FD			G	GW		N		X																	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for ____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No | Cooler Temp (°C) Obs'd ____ Corr'd. ____ | Therm ID No. ____

Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Ben Porter	Accom	5-9-24			5/9/24 1640
Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Relinquished by	Company	Date/Time	Received in Laboratory by	Company	Date/Time

5/23/2024

Eurofins Cedar Falls
3019 Venture Way

Cedar Falls, IA 50613
phone 319 277.2401 fax 319.277 2425

Chain of Custody Record

eurofins Environment Testing America

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other IDNR

Eurofins Environment Testing America

Client Contact	**Project Manager: Chris Oelkers**	COC No
AECOM	Email Christopher Oelkers@aecom.com	2 of 3 COCs
501 Sycamore Street, Suite 222	Tel/Fax:319-296-6878	TALS Project #
Waterloo, IA 50703	**Analysis Turnaround Time**	Sampler
(319) 232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS	**For Lab Use Only:**
(xxx) xxx-xxxx FAX	TAT if different from Below ____	Walk-in Client:
Project Name Black Hawk Co IDNR	☑ 2 weeks	Lab Sampling
Site Black Hawk County Landfill	☐ 1 week	
P O #	☐ 2 days	Job / SDG No
	☐ 1 day	

Site Contact: **Date:** 5-9-24
Lab Contact: **Carrier:**

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Appendix I, TSS	Appendix II, TSS	2,4-D	4,4'-DDD	beta-BHC	delta BHC	Endosulfan I	Endosulfan sulfate	Endrin aldehyde	Silvex	Sulfide	Sample Specific Notes
OW-401B			G	GW		N		X		X		X	X		X	X	X	X	
OW-402B			G	GW		N		X											
MW-409B			G	GW		N		X											
OW-410B			G	GW		N		X											
OW-411B			G	GW		N		X											
OW-412B			G	GW		N		X											
OW-413B			G	GW		N		X											
OW-414B	5-8-24	1300	G	GW	5	N		X											Turbidity - 1.01 NTU
MW-501B			G	GW		N		X											
MW-602B			G	GW		N		X											
MW-602B-FD			G	GW		N		X											

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for ____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No | Cooler Temp (°C) Obs'd.____ Corr'd.____ | Therm ID No .____

Relinquished by: Ben Porter	Company: 5-9-24	Date/Time	Received by:	Company:	Date/Time 5/9/24 1640
Relinquished by:	Company:	Date/Time	Received by:	Company:	Date/Time
Relinquished by:	Company:	Date/Time	Received in Laboratory by:	Company:	Date/Time

5/23/2024

Eurofins Cedar Falls
3019 Venture Way

Cedar Falls, IA 50613
phone 319 277.2401 fax 319 277.2425

Chain of Custody Record

eurofins Environment Testing America

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other IDNR

Eurofins Environment Testing America

Client Contact	Project Manager: Chris Oelkers	Site Contact:	Date: 5-9-24	COC No
AECOM	Email Christopher Oelkers@aecom.com	Lab Contact:	Carrier:	3 of 3 COCs
501 Sycamore Street, Suite 222	Tel/Fax:319-296-6878			TALS Project #
Waterloo, IA 50703	Analysis Turnaround Time			Sampler
(319) 232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(xxx) xxx-xxxx FAX	TAT if different from Below _____			Walk-in Client.
Project Name Black Hawk Co IDNR	☑ 2 weeks			Lab Sampling
Site Black Hawk County Landfill	☐ 1 week			Job / SDG No
P O #	☐ 2 days			
	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	Appendix I, TSS	Appendix II, TSS	2,4-D	4,4'-DDD	beta-BHC	delta BHC	Endosulfan I	Endosulfan sulfate	Endrin aldehyde	Silvex	Sulfide						Sample Specific Notes
OW-101B	5-8-24	1000	G	GW	5	N		X																Turbidity - 3.50 NTU
OW-105B			G	GW		N		X																
OW-113B			G	GW		N		X										X						
OW-114B			G	GW		N		X																
OW-205B			G	GW		N		X			X			X				X						
OW-209B			G	GW		N		X																
OW-212B			G	GW		N		X																
OW-213BR			G	GW		N		X																
OW-216BR			G	GW		N		X																
OW-219B			G	GW		N		X																
OW-219B-FD			G	GW		N		X																
Trip Blank	5-8-24	0600	G	W	2	N		X																

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No | Cooler Temp (°C) Obs'd _____ Corr'd. _____ | Therm ID No. _____

Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Ben Porter	Aecom	5-9-24			5/9/24 1040
Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Relinquished by	Company	Date/Time	Received in Laboratory by	Company	Date/Time

5/23/2024

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-280844-1

Login Number: 280844

List Number: 1

Creator: Homolar, Dana J

List Source: Eurofins Cedar Falls

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Chris Oelkers
AECOM
501 Sycamore Street
Suite #222
Waterloo, Iowa 50703

Generated 5/26/2024 8:18:58 PM

JOB DESCRIPTION

Black Hawk County Landfill (IDNR)

JOB NUMBER

310-281404-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



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Authorized for release by
Zach Bindert, Client Service Manager
Zach.Bindert@et.eurofinsus.com
(319)277-2401

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Job ID: 310-281404-1 — Eurofins Cedar Falls

Job Narrative
310-281404-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 5/16/2024 10:00 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.3°C.

GC/MS VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Field Service / Mobile Lab
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Sample Summary

Client: AECOM
Job ID: 310-281404-1
Project/Site: Black Hawk County Landfill (IDNR)

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-281404-1	OW-402B	Ground Water	05/15/24 15:00	05/16/24 10:00
310-281404-2	OW-411B	Ground Water	05/15/24 10:45	05/16/24 10:00
310-281404-3	OW-412B	Ground Water	05/15/24 11:45	05/16/24 10:00
310-281404-4	OW-413B	Ground Water	05/15/24 12:45	05/16/24 10:00
310-281404-5	Trip Blank	Water	05/15/24 06:00	05/16/24 10:00

Detection Summary

Client: AECOM
Job ID: 310-281404-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-402B — Lab Sample ID: 310-281404-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.521	J	1.00	0.210	ug/L	1		8260D	Total/NA
Barium	581		2.00	0.660	ug/L	1		6020B	Total/NA
Cobalt	2.02		0.500	0.170	ug/L	1		6020B	Total/NA
Nickel	30.4		5.00	2.10	ug/L	1		6020B	Total/NA
Field Turbidity	0.82				NTU	1		Field Sampling	Total/NA

Client Sample ID: OW-411B — Lab Sample ID: 310-281404-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	4.68	J	10.0	3.10	ug/L	1		8260D	Total/NA
Benzene	0.229	J	0.500	0.220	ug/L	1		8260D	Total/NA
Arsenic	4.07		2.00	0.530	ug/L	1		6020B	Total/NA
Barium	687		2.00	0.660	ug/L	1		6020B	Total/NA
Cobalt	1.41		0.500	0.170	ug/L	1		6020B	Total/NA
Nickel	28.5		5.00	2.10	ug/L	1		6020B	Total/NA
Total Suspended Solids	40.0		15.0	11.1	mg/L	1		I-3765-85	Total/NA
Field Turbidity	0.77				NTU	1		Field Sampling	Total/NA

Client Sample ID: OW-412B — Lab Sample ID: 310-281404-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	0.234	J	1.00	0.220	ug/L	1		8260D	Total/NA
1,2-Dichloropropane	0.356	J	1.00	0.270	ug/L	1		8260D	Total/NA
Acetone	5.51	J	10.0	3.10	ug/L	1		8260D	Total/NA
Benzene	0.296	J	0.500	0.220	ug/L	1		8260D	Total/NA
Chloroethane	0.905	J	4.00	0.790	ug/L	1		8260D	Total/NA
cis-1,2-Dichloroethene	11.8		1.00	0.210	ug/L	1		8260D	Total/NA
trans-1,2-Dichloroethene	0.289	J	1.00	0.270	ug/L	1		8260D	Total/NA
Vinyl chloride	0.812	J	1.00	0.180	ug/L	1		8260D	Total/NA
Arsenic	4.18		2.00	0.530	ug/L	1		6020B	Total/NA
Barium	1390		2.00	0.660	ug/L	1		6020B	Total/NA
Chromium	4.40	J	5.00	1.20	ug/L	1		6020B	Total/NA
Cobalt	1.03		0.500	0.170	ug/L	1		6020B	Total/NA
Lead	0.339	J	0.500	0.260	ug/L	1		6020B	Total/NA
Nickel	20.5		5.00	2.10	ug/L	1		6020B	Total/NA
Total Suspended Solids	9.00		7.50	5.55	mg/L	1		I-3765-85	Total/NA
Field Turbidity	74.33				NTU	1		Field Sampling	Total/NA

Client Sample ID: OW-413B — Lab Sample ID: 310-281404-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	0.231	J	1.00	0.220	ug/L	1		8260D	Total/NA
Benzene	1.17		0.500	0.220	ug/L	1		8260D	Total/NA
Chloroethane	1.10	J	4.00	0.790	ug/L	1		8260D	Total/NA
cis-1,2-Dichloroethene	0.701	J	1.00	0.210	ug/L	1		8260D	Total/NA
Arsenic	10.8		2.00	0.530	ug/L	1		6020B	Total/NA
Barium	632		2.00	0.660	ug/L	1		6020B	Total/NA
Chromium	6.15		5.00	1.20	ug/L	1		6020B	Total/NA
Cobalt	5.23		0.500	0.170	ug/L	1		6020B	Total/NA
Copper	3.27	J	5.00	1.80	ug/L	1		6020B	Total/NA
Lead	1.06		0.500	0.260	ug/L	1		6020B	Total/NA
Nickel	7.58		5.00	2.10	ug/L	1		6020B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: OW-413B (Continued)
Lab Sample ID: 310-281404-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vanadium	5.91		5.00	1.10	ug/L	1		6020B	Total/NA
Total Suspended Solids	128		15.0	11.1	mg/L	1		I-3765-85	Total/NA
Field Turbidity	81.81				NTU	1		Field Sampling	Total/NA

Client Sample ID: Trip Blank
Lab Sample ID: 310-281404-5

No Detections.

This Detection Summary does not include radiochemical test results.

Client: AECOM
Job ID: 310-281404-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-402B
Lab Sample ID: 310-281404-1
Date Collected: 05/15/24 15:00
Matrix: Ground Water
Date Received: 05/16/24 10:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/22/24 08:26	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/22/24 08:26	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/22/24 08:26	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/22/24 08:26	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/22/24 08:26	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/22/24 08:26	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/22/24 08:26	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/22/24 08:26	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/22/24 08:26	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/22/24 08:26	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/22/24 08:26	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/22/24 08:26	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/22/24 08:26	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/22/24 08:26	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/22/24 08:26	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/22/24 08:26	1
Acetone	<3.10		10.0	3.10	ug/L			05/22/24 08:26	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/22/24 08:26	1
Benzene	<0.220		0.500	0.220	ug/L			05/22/24 08:26	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/22/24 08:26	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/22/24 08:26	1
Bromoform	<0.780		5.00	0.780	ug/L			05/22/24 08:26	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/22/24 08:26	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/22/24 08:26	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/22/24 08:26	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/22/24 08:26	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/22/24 08:26	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/22/24 08:26	1
Chloroform	<1.30		3.00	1.30	ug/L			05/22/24 08:26	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/22/24 08:26	1
cis-1,2-Dichloroethene	**0.521**	**J**	1.00	0.210	ug/L			05/22/24 08:26	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/22/24 08:26	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/22/24 08:26	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/22/24 08:26	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/22/24 08:26	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/22/24 08:26	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/22/24 08:26	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/22/24 08:26	1
Styrene	<0.370		1.00	0.370	ug/L			05/22/24 08:26	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/22/24 08:26	1
Toluene	<0.430		1.00	0.430	ug/L			05/22/24 08:26	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/22/24 08:26	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/22/24 08:26	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/22/24 08:26	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/22/24 08:26	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/22/24 08:26	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/22/24 08:26	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/22/24 08:26	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/22/24 08:26	1

Client: AECOM
Job ID: 310-281404-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-402B
Lab Sample ID: 310-281404-1

Date Collected: 05/15/24 15:00
Matrix: Ground Water

Date Received: 05/16/24 10:00

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*101*		*73 - 130*		*05/22/24 08:26*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*05/22/24 08:26*	*1*
4-Bromofluorobenzene (Surr)	*105*		*80 - 120*		*05/22/24 08:26*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		05/17/24 09:30	05/21/24 14:19	1
Arsenic	<0.530		2.00	0.530	ug/L		05/17/24 09:30	05/20/24 20:11	1
Barium	**581**		2.00	0.660	ug/L		05/17/24 09:30	05/20/24 20:11	1
Beryllium	<0.330		1.00	0.330	ug/L		05/17/24 09:30	05/20/24 20:11	1
Cadmium	<0.100		0.200	0.100	ug/L		05/17/24 09:30	05/20/24 20:11	1
Chromium	<1.20		5.00	1.20	ug/L		05/17/24 09:30	05/20/24 20:11	1
Cobalt	**2.02**		0.500	0.170	ug/L		05/17/24 09:30	05/20/24 20:11	1
Copper	<1.80		5.00	1.80	ug/L		05/17/24 09:30	05/20/24 20:11	1
Lead	<0.260		0.500	0.260	ug/L		05/17/24 09:30	05/20/24 20:11	1
Nickel	**30.4**		5.00	2.10	ug/L		05/17/24 09:30	05/21/24 14:19	1
Selenium	<1.40		5.00	1.40	ug/L		05/17/24 09:30	05/20/24 20:11	1
Silver	<0.500		1.00	0.500	ug/L		05/17/24 09:30	05/20/24 20:11	1
Thallium	<0.570		1.00	0.570	ug/L		05/17/24 09:30	05/20/24 20:11	1
Vanadium	<1.10		5.00	1.10	ug/L		05/17/24 09:30	05/20/24 20:11	1
Zinc	<9.70		20.0	9.70	ug/L		05/17/24 09:30	05/20/24 20:11	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	<1.39		1.88	1.39	mg/L			05/20/24 14:19	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**0.82**				NTU			05/15/24 15:00	1

Client: AECOM
Job ID: 310-281404-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-411B
Lab Sample ID: 310-281404-2
Date Collected: 05/15/24 10:45
Matrix: Ground Water
Date Received: 05/16/24 10:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/22/24 08:47	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/22/24 08:47	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/22/24 08:47	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/22/24 08:47	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/22/24 08:47	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/22/24 08:47	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/22/24 08:47	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/22/24 08:47	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/22/24 08:47	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/22/24 08:47	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/22/24 08:47	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/22/24 08:47	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/22/24 08:47	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/22/24 08:47	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/22/24 08:47	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/22/24 08:47	1
Acetone	**4.68**	**J**	10.0	3.10	ug/L			05/22/24 08:47	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/22/24 08:47	1
Benzene	**0.229**	**J**	0.500	0.220	ug/L			05/22/24 08:47	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/22/24 08:47	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/22/24 08:47	1
Bromoform	<0.780		5.00	0.780	ug/L			05/22/24 08:47	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/22/24 08:47	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/22/24 08:47	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/22/24 08:47	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/22/24 08:47	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/22/24 08:47	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/22/24 08:47	1
Chloroform	<1.30		3.00	1.30	ug/L			05/22/24 08:47	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/22/24 08:47	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/22/24 08:47	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/22/24 08:47	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/22/24 08:47	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/22/24 08:47	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/22/24 08:47	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/22/24 08:47	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/22/24 08:47	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/22/24 08:47	1
Styrene	<0.370		1.00	0.370	ug/L			05/22/24 08:47	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/22/24 08:47	1
Toluene	<0.430		1.00	0.430	ug/L			05/22/24 08:47	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/22/24 08:47	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/22/24 08:47	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/22/24 08:47	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/22/24 08:47	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/22/24 08:47	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/22/24 08:47	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/22/24 08:47	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/22/24 08:47	1

Client: AECOM
Job ID: 310-281404-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-411B
Lab Sample ID: 310-281404-2

Date Collected: 05/15/24 10:45
Matrix: Ground Water

Date Received: 05/16/24 10:00

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*98*		*73 - 130*		*05/22/24 08:47*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*05/22/24 08:47*	*1*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*		*05/22/24 08:47*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		05/17/24 09:30	05/21/24 14:21	1
Arsenic	**4.07**		2.00	0.530	ug/L		05/17/24 09:30	05/20/24 20:14	1
Barium	**687**		2.00	0.660	ug/L		05/17/24 09:30	05/20/24 20:14	1
Beryllium	<0.330		1.00	0.330	ug/L		05/17/24 09:30	05/20/24 20:14	1
Cadmium	<0.100		0.200	0.100	ug/L		05/17/24 09:30	05/20/24 20:14	1
Chromium	<1.20		5.00	1.20	ug/L		05/17/24 09:30	05/20/24 20:14	1
Cobalt	**1.41**		0.500	0.170	ug/L		05/17/24 09:30	05/20/24 20:14	1
Copper	<1.80		5.00	1.80	ug/L		05/17/24 09:30	05/20/24 20:14	1
Lead	<0.260		0.500	0.260	ug/L		05/17/24 09:30	05/20/24 20:14	1
Nickel	**28.5**		5.00	2.10	ug/L		05/17/24 09:30	05/21/24 14:21	1
Selenium	<1.40		5.00	1.40	ug/L		05/17/24 09:30	05/20/24 20:14	1
Silver	<0.500		1.00	0.500	ug/L		05/17/24 09:30	05/20/24 20:14	1
Thallium	<0.570		1.00	0.570	ug/L		05/17/24 09:30	05/20/24 20:14	1
Vanadium	<1.10		5.00	1.10	ug/L		05/17/24 09:30	05/20/24 20:14	1
Zinc	<9.70		20.0	9.70	ug/L		05/17/24 09:30	05/20/24 20:14	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**40.0**		15.0	11.1	mg/L			05/20/24 10:17	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**0.77**				NTU			05/15/24 10:45	1

Client: AECOM
Job ID: 310-281404-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-412B
Lab Sample ID: 310-281404-3
Date Collected: 05/15/24 11:45
Matrix: Ground Water
Date Received: 05/16/24 10:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/22/24 09:09	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/22/24 09:09	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/22/24 09:09	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/22/24 09:09	1
1,1-Dichloroethane	**0.234**	**J**	1.00	0.220	ug/L			05/22/24 09:09	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/22/24 09:09	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/22/24 09:09	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/22/24 09:09	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/22/24 09:09	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/22/24 09:09	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/22/24 09:09	1
1,2-Dichloropropane	**0.356**	**J**	1.00	0.270	ug/L			05/22/24 09:09	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/22/24 09:09	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/22/24 09:09	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/22/24 09:09	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/22/24 09:09	1
Acetone	**5.51**	**J**	10.0	3.10	ug/L			05/22/24 09:09	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/22/24 09:09	1
Benzene	**0.296**	**J**	0.500	0.220	ug/L			05/22/24 09:09	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/22/24 09:09	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/22/24 09:09	1
Bromoform	<0.780		5.00	0.780	ug/L			05/22/24 09:09	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/22/24 09:09	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/22/24 09:09	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/22/24 09:09	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/22/24 09:09	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/22/24 09:09	1
Chloroethane	**0.905**	**J**	4.00	0.790	ug/L			05/22/24 09:09	1
Chloroform	<1.30		3.00	1.30	ug/L			05/22/24 09:09	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/22/24 09:09	1
cis-1,2-Dichloroethene	**11.8**		1.00	0.210	ug/L			05/22/24 09:09	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/22/24 09:09	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/22/24 09:09	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/22/24 09:09	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/22/24 09:09	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/22/24 09:09	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/22/24 09:09	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/22/24 09:09	1
Styrene	<0.370		1.00	0.370	ug/L			05/22/24 09:09	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/22/24 09:09	1
Toluene	<0.430		1.00	0.430	ug/L			05/22/24 09:09	1
trans-1,2-Dichloroethene	**0.289**	**J**	1.00	0.270	ug/L			05/22/24 09:09	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/22/24 09:09	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/22/24 09:09	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/22/24 09:09	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/22/24 09:09	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/22/24 09:09	1
Vinyl chloride	**0.812**	**J**	1.00	0.180	ug/L			05/22/24 09:09	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/22/24 09:09	1

Client: AECOM
Job ID: 310-281404-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-412B
Lab Sample ID: 310-281404-3

Date Collected: 05/15/24 11:45
Matrix: Ground Water

Date Received: 05/16/24 10:00

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*99*		*73 - 130*		*05/22/24 09:09*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*05/22/24 09:09*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*05/22/24 09:09*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		05/17/24 09:30	05/21/24 14:23	1
Arsenic	**4.18**		2.00	0.530	ug/L		05/17/24 09:30	05/20/24 20:16	1
Barium	**1390**		2.00	0.660	ug/L		05/17/24 09:30	05/20/24 20:16	1
Beryllium	<0.330		1.00	0.330	ug/L		05/17/24 09:30	05/20/24 20:16	1
Cadmium	<0.100		0.200	0.100	ug/L		05/17/24 09:30	05/20/24 20:16	1
Chromium	**4.40**	**J**	5.00	1.20	ug/L		05/17/24 09:30	05/20/24 20:16	1
Cobalt	**1.03**		0.500	0.170	ug/L		05/17/24 09:30	05/20/24 20:16	1
Copper	<1.80		5.00	1.80	ug/L		05/17/24 09:30	05/20/24 20:16	1
Lead	**0.339**	**J**	0.500	0.260	ug/L		05/17/24 09:30	05/20/24 20:16	1
Nickel	**20.5**		5.00	2.10	ug/L		05/17/24 09:30	05/21/24 14:23	1
Selenium	<1.40		5.00	1.40	ug/L		05/17/24 09:30	05/20/24 20:16	1
Silver	<0.500		1.00	0.500	ug/L		05/17/24 09:30	05/20/24 20:16	1
Thallium	<0.570		1.00	0.570	ug/L		05/17/24 09:30	05/20/24 20:16	1
Vanadium	<1.10		5.00	1.10	ug/L		05/17/24 09:30	05/20/24 20:16	1
Zinc	<9.70		20.0	9.70	ug/L		05/17/24 09:30	05/20/24 20:16	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**9.00**		7.50	5.55	mg/L			05/20/24 14:19	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**74.33**				NTU			05/15/24 11:45	1

Client: AECOM
Job ID: 310-281404-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-413B
Lab Sample ID: 310-281404-4
Date Collected: 05/15/24 12:45
Matrix: Ground Water
Date Received: 05/16/24 10:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/22/24 09:31	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/22/24 09:31	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/22/24 09:31	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/22/24 09:31	1
1,1-Dichloroethane	**0.231**	**J**	1.00	0.220	ug/L			05/22/24 09:31	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/22/24 09:31	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/22/24 09:31	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/22/24 09:31	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/22/24 09:31	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/22/24 09:31	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/22/24 09:31	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/22/24 09:31	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/22/24 09:31	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/22/24 09:31	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/22/24 09:31	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/22/24 09:31	1
Acetone	<3.10		10.0	3.10	ug/L			05/22/24 09:31	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/22/24 09:31	1
Benzene	**1.17**		0.500	0.220	ug/L			05/22/24 09:31	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/22/24 09:31	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/22/24 09:31	1
Bromoform	<0.780		5.00	0.780	ug/L			05/22/24 09:31	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/22/24 09:31	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/22/24 09:31	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/22/24 09:31	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/22/24 09:31	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/22/24 09:31	1
Chloroethane	**1.10**	**J**	4.00	0.790	ug/L			05/22/24 09:31	1
Chloroform	<1.30		3.00	1.30	ug/L			05/22/24 09:31	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/22/24 09:31	1
cis-1,2-Dichloroethene	**0.701**	**J**	1.00	0.210	ug/L			05/22/24 09:31	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/22/24 09:31	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/22/24 09:31	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/22/24 09:31	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/22/24 09:31	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/22/24 09:31	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/22/24 09:31	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/22/24 09:31	1
Styrene	<0.370		1.00	0.370	ug/L			05/22/24 09:31	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/22/24 09:31	1
Toluene	<0.430		1.00	0.430	ug/L			05/22/24 09:31	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/22/24 09:31	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/22/24 09:31	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/22/24 09:31	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/22/24 09:31	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/22/24 09:31	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/22/24 09:31	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/22/24 09:31	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/22/24 09:31	1

Client: AECOM
Job ID: 310-281404-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-413B
Lab Sample ID: 310-281404-4

Date Collected: 05/15/24 12:45
Matrix: Ground Water

Date Received: 05/16/24 10:00

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*97*		*73 - 130*		*05/22/24 09:31*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*05/22/24 09:31*	*1*
4-Bromofluorobenzene (Surr)	*106*		*80 - 120*		*05/22/24 09:31*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		05/17/24 09:30	05/21/24 14:25	1
Arsenic	**10.8**		2.00	0.530	ug/L		05/17/24 09:30	05/20/24 20:18	1
Barium	**632**		2.00	0.660	ug/L		05/17/24 09:30	05/20/24 20:18	1
Beryllium	<0.330		1.00	0.330	ug/L		05/17/24 09:30	05/20/24 20:18	1
Cadmium	<0.100		0.200	0.100	ug/L		05/17/24 09:30	05/20/24 20:18	1
Chromium	**6.15**		5.00	1.20	ug/L		05/17/24 09:30	05/20/24 20:18	1
Cobalt	**5.23**		0.500	0.170	ug/L		05/17/24 09:30	05/20/24 20:18	1
Copper	**3.27**	**J**	5.00	1.80	ug/L		05/17/24 09:30	05/20/24 20:18	1
Lead	**1.06**		0.500	0.260	ug/L		05/17/24 09:30	05/20/24 20:18	1
Nickel	**7.58**		5.00	2.10	ug/L		05/17/24 09:30	05/21/24 14:25	1
Selenium	<1.40		5.00	1.40	ug/L		05/17/24 09:30	05/20/24 20:18	1
Silver	<0.500		1.00	0.500	ug/L		05/17/24 09:30	05/20/24 20:18	1
Thallium	<0.570		1.00	0.570	ug/L		05/17/24 09:30	05/20/24 20:18	1
Vanadium	**5.91**		5.00	1.10	ug/L		05/17/24 09:30	05/20/24 20:18	1
Zinc	<9.70		20.0	9.70	ug/L		05/17/24 09:30	05/20/24 20:18	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**128**		15.0	11.1	mg/L			05/20/24 10:17	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**81.81**				NTU			05/15/24 12:45	1

Client: AECOM
Job ID: 310-281404-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Trip Blank
Lab Sample ID: 310-281404-5
Date Collected: 05/15/24 06:00
Matrix: Water
Date Received: 05/16/24 10:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/22/24 09:53	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/22/24 09:53	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/22/24 09:53	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/22/24 09:53	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/22/24 09:53	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/22/24 09:53	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/22/24 09:53	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/22/24 09:53	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/22/24 09:53	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/22/24 09:53	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/22/24 09:53	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/22/24 09:53	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/22/24 09:53	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/22/24 09:53	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/22/24 09:53	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/22/24 09:53	1
Acetone	<3.10		10.0	3.10	ug/L			05/22/24 09:53	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/22/24 09:53	1
Benzene	<0.220		0.500	0.220	ug/L			05/22/24 09:53	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/22/24 09:53	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/22/24 09:53	1
Bromoform	<0.780		5.00	0.780	ug/L			05/22/24 09:53	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/22/24 09:53	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/22/24 09:53	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/22/24 09:53	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/22/24 09:53	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/22/24 09:53	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/22/24 09:53	1
Chloroform	<1.30		3.00	1.30	ug/L			05/22/24 09:53	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/22/24 09:53	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/22/24 09:53	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/22/24 09:53	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/22/24 09:53	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/22/24 09:53	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/22/24 09:53	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/22/24 09:53	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/22/24 09:53	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/22/24 09:53	1
Styrene	<0.370		1.00	0.370	ug/L			05/22/24 09:53	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/22/24 09:53	1
Toluene	<0.430		1.00	0.430	ug/L			05/22/24 09:53	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/22/24 09:53	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/22/24 09:53	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/22/24 09:53	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/22/24 09:53	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/22/24 09:53	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/22/24 09:53	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/22/24 09:53	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/22/24 09:53	1

Client: AECOM
Job ID: 310-281404-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Trip Blank
Lab Sample ID: 310-281404-5
Date Collected: 05/15/24 06:00
Matrix: Water
Date Received: 05/16/24 10:00

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	99		73 - 130		05/22/24 09:53	1
Toluene-d8 (Surr)	99		80 - 120		05/22/24 09:53	1
4-Bromofluorobenzene (Surr)	105		80 - 120		05/22/24 09:53	1

Definitions/Glossary

Client: AECOM
Job ID: 310-281404-1
Project/Site: Black Hawk County Landfill (IDNR)

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Surrogate Summary

Client: AECOM
Job ID: 310-281404-1
Project/Site: Black Hawk County Landfill (IDNR)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Ground Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-281404-1	OW-402B	101	98	105
310-281404-1 MS	OW-402B	96	105	101
310-281404-1 MSD	OW-402B	93	105	101
310-281404-2	OW-411B	98	102	104
310-281404-3	OW-412B	99	100	101
310-281404-4	OW-413B	97	99	106

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-281404-5	Trip Blank	99	99	105
LCS 310-422316/6	Lab Control Sample	94	105	101
LCS 310-422316/7	Lab Control Sample	96	101	103
MB 310-422316/5	Method Blank	96	102	107

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 310-422316/5
Matrix: Water
Analysis Batch: 422316

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/22/24 04:26	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/22/24 04:26	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/22/24 04:26	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/22/24 04:26	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/22/24 04:26	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/22/24 04:26	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/22/24 04:26	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/22/24 04:26	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/22/24 04:26	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/22/24 04:26	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/22/24 04:26	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/22/24 04:26	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/22/24 04:26	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/22/24 04:26	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/22/24 04:26	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/22/24 04:26	1
Acetone	<3.10		10.0	3.10	ug/L			05/22/24 04:26	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/22/24 04:26	1
Benzene	<0.220		0.500	0.220	ug/L			05/22/24 04:26	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/22/24 04:26	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/22/24 04:26	1
Bromoform	<0.780		5.00	0.780	ug/L			05/22/24 04:26	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/22/24 04:26	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/22/24 04:26	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/22/24 04:26	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/22/24 04:26	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/22/24 04:26	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/22/24 04:26	1
Chloroform	<1.30		3.00	1.30	ug/L			05/22/24 04:26	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/22/24 04:26	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/22/24 04:26	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/22/24 04:26	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/22/24 04:26	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/22/24 04:26	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/22/24 04:26	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/22/24 04:26	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/22/24 04:26	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/22/24 04:26	1
Styrene	<0.370		1.00	0.370	ug/L			05/22/24 04:26	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/22/24 04:26	1
Toluene	<0.430		1.00	0.430	ug/L			05/22/24 04:26	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/22/24 04:26	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/22/24 04:26	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/22/24 04:26	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/22/24 04:26	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/22/24 04:26	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/22/24 04:26	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/22/24 04:26	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-422316/5
Matrix: Water
Analysis Batch: 422316

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/22/24 04:26	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*96*		*73 - 130*		*05/22/24 04:26*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*05/22/24 04:26*	*1*
4-Bromofluorobenzene (Surr)	*107*		*80 - 120*		*05/22/24 04:26*	*1*

Lab Sample ID: LCS 310-422316/6
Matrix: Water
Analysis Batch: 422316

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	20.0	18.95		ug/L		95	71 - 120
1,1,1-Trichloroethane	20.0	18.50		ug/L		93	73 - 129
1,1,2,2-Tetrachloroethane	20.0	19.90		ug/L		99	68 - 124
1,1,2-Trichloroethane	20.0	19.62		ug/L		98	73 - 123
1,1-Dichloroethane	20.0	19.38		ug/L		97	70 - 127
1,1-Dichloroethene	20.0	19.25		ug/L		96	63 - 132
1,2,3-Trichloropropane	20.0	19.00		ug/L		95	65 - 127
1,2-Dibromo-3-Chloropropane	20.0	20.85		ug/L		104	50 - 150
1,2-Dibromoethane (EDB)	20.0	18.58		ug/L		93	75 - 125
1,2-Dichlorobenzene	20.0	20.15		ug/L		101	74 - 120
1,2-Dichloroethane	20.0	18.13		ug/L		91	71 - 125
1,2-Dichloropropane	20.0	19.68		ug/L		98	73 - 124
1,4-Dichlorobenzene	20.0	19.20		ug/L		96	72 - 120
2-Butanone (MEK)	40.0	40.76		ug/L		102	50 - 150
2-Hexanone	40.0	43.91		ug/L		110	60 - 140
4-Methyl-2-pentanone (MIBK)	40.0	42.17		ug/L		105	60 - 139
Acetone	40.0	40.00		ug/L		100	50 - 150
Acrylonitrile	200	200.2		ug/L		100	50 - 150
Benzene	20.0	18.88		ug/L		94	72 - 124
Bromochloromethane	20.0	18.47		ug/L		92	73 - 130
Bromodichloromethane	20.0	17.97		ug/L		90	74 - 122
Bromoform	20.0	17.68		ug/L		88	61 - 122
Carbon disulfide	20.0	19.57		ug/L		98	59 - 135
Carbon tetrachloride	20.0	17.99		ug/L		90	67 - 132
Chlorobenzene	20.0	19.30		ug/L		96	76 - 120
Chlorodibromomethane	20.0	17.91		ug/L		90	71 - 121
Chloroform	20.0	17.92		ug/L		90	72 - 125
cis-1,2-Dichloroethene	20.0	18.22		ug/L		91	74 - 123
cis-1,3-Dichloropropene	20.0	19.48		ug/L		97	71 - 125
Dibromomethane	20.0	18.56		ug/L		93	74 - 125
Ethylbenzene	20.0	20.50		ug/L		103	74 - 122
Iodomethane	20.0	11.27		ug/L		56	10 - 150
Methylene Chloride	20.0	20.79		ug/L		104	50 - 150
Styrene	20.0	19.95		ug/L		100	74 - 121
Tetrachloroethene	20.0	18.74		ug/L		94	71 - 130
Toluene	20.0	18.76		ug/L		94	74 - 123

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-422316/6
Matrix: Water
Analysis Batch: 422316

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
trans-1,2-Dichloroethene	20.0	18.27		ug/L		91	70 - 126
trans-1,3-Dichloropropene	20.0	18.19		ug/L		91	69 - 123
trans-1,4-Dichloro-2-butene	20.0	18.03		ug/L		90	50 - 150
Trichloroethene	20.0	18.98		ug/L		95	72 - 126
Vinyl acetate	40.0	34.12		ug/L		85	50 - 150
Xylenes, Total	40.0	40.78		ug/L		102	73 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*94*		*73 - 130*
Toluene-d8 (Surr)	*105*		*80 - 120*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*

Lab Sample ID: LCS 310-422316/7
Matrix: Water
Analysis Batch: 422316

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	15.84		ug/L		79	23 - 150
Chloroethane	20.0	19.50		ug/L		97	54 - 136
Chloromethane	20.0	21.50		ug/L		108	38 - 150
Trichlorofluoromethane	20.0	18.78		ug/L		94	54 - 149
Vinyl chloride	20.0	20.77		ug/L		104	56 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*96*		*73 - 130*
Toluene-d8 (Surr)	*101*		*80 - 120*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*

Lab Sample ID: 310-281404-1 MS
Matrix: Ground Water
Analysis Batch: 422316

Client Sample ID: OW-402B
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	<0.380		25.0	23.08		ug/L		92	55 - 130
1,1,1-Trichloroethane	<0.190		25.0	19.94		ug/L		80	52 - 130
1,1,2,2-Tetrachloroethane	<0.470		25.0	25.18		ug/L		101	54 - 130
1,1,2-Trichloroethane	<0.450		25.0	24.24		ug/L		97	58 - 130
1,1-Dichloroethane	<0.220		25.0	21.99		ug/L		88	49 - 130
1,1-Dichloroethene	<0.560		25.0	21.65		ug/L		87	37 - 132
1,2,3-Trichloropropane	<0.590		25.0	24.25		ug/L		97	49 - 130
1,2-Dibromo-3-Chloropropane	<1.20		25.0	24.74		ug/L		99	38 - 150
1,2-Dibromoethane (EDB)	<0.340		25.0	22.41		ug/L		90	60 - 130
1,2-Dichlorobenzene	<0.370		25.0	23.61		ug/L		94	59 - 130
1,2-Dichloroethane	<0.390		25.0	20.95		ug/L		84	51 - 130
1,2-Dichloropropane	<0.270		25.0	22.81		ug/L		91	57 - 130
1,4-Dichlorobenzene	<0.230		25.0	22.89		ug/L		92	57 - 130
2-Butanone (MEK)	<2.10		50.0	47.65		ug/L		95	38 - 150
2-Hexanone	<2.00		50.0	49.59		ug/L		99	46 - 140

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 310-281404-1 MS
Matrix: Ground Water
Analysis Batch: 422316

Client Sample ID: OW-402B
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
4-Methyl-2-pentanone (MIBK)	<2.10		50.0	50.28		ug/L		101	47 - 139
Acetone	<3.10		50.0	46.07		ug/L		92	31 - 150
Acrylonitrile	<2.20		250	240.9		ug/L		96	40 - 150
Benzene	<0.220		25.0	22.68		ug/L		91	46 - 130
Bromochloromethane	<0.540		25.0	22.02		ug/L		88	57 - 130
Bromodichloromethane	<0.390		25.0	21.55		ug/L		86	57 - 130
Bromoform	<0.780		25.0	22.24		ug/L		89	44 - 130
Carbon disulfide	<0.450		25.0	23.31		ug/L		93	38 - 135
Carbon tetrachloride	<0.650		25.0	20.09		ug/L		80	45 - 132
Chlorobenzene	<0.400		25.0	23.40		ug/L		94	59 - 130
Chlorodibromomethane	<0.750		25.0	22.04		ug/L		88	54 - 130
Chloroform	<1.30		25.0	21.42		ug/L		86	51 - 130
cis-1,2-Dichloroethene	0.521	J	25.0	22.23		ug/L		87	45 - 130
cis-1,3-Dichloropropene	<0.250		25.0	21.96		ug/L		88	53 - 130
Dibromomethane	<0.330		25.0	21.97		ug/L		88	59 - 130
Ethylbenzene	<0.310		25.0	24.34		ug/L		97	45 - 130
Iodomethane	<7.00		25.0	11.77		ug/L		47	10 - 150
Methylene Chloride	<1.70		25.0	24.23		ug/L		97	37 - 150
Styrene	<0.370		25.0	23.85		ug/L		95	47 - 130
Tetrachloroethene	<0.480		25.0	21.06		ug/L		84	47 - 130
Toluene	<0.430		25.0	22.80		ug/L		91	51 - 130
trans-1,2-Dichloroethene	<0.270		25.0	21.48		ug/L		86	48 - 130
trans-1,3-Dichloropropene	<0.560		25.0	21.80		ug/L		87	50 - 130
trans-1,4-Dichloro-2-butene	<1.10		25.0	21.50		ug/L		86	26 - 150
Trichloroethene	<0.430		25.0	22.19		ug/L		89	51 - 130
Vinyl acetate	<2.50		50.0	38.39		ug/L		77	29 - 150
Xylenes, Total	<0.400		50.0	48.13		ug/L		96	43 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*96*		*73 - 130*
Toluene-d8 (Surr)	*105*		*80 - 120*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*

Lab Sample ID: 310-281404-1 MSD
Matrix: Ground Water
Analysis Batch: 422316

Client Sample ID: OW-402B
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	<0.380		25.0	21.92		ug/L		88	55 - 130	5	20
1,1,1-Trichloroethane	<0.190		25.0	19.12		ug/L		76	52 - 130	4	20
1,1,2,2-Tetrachloroethane	<0.470		25.0	23.70		ug/L		95	54 - 130	6	20
1,1,2-Trichloroethane	<0.450		25.0	22.77		ug/L		91	58 - 130	6	20
1,1-Dichloroethane	<0.220		25.0	20.34		ug/L		81	49 - 130	8	20
1,1-Dichloroethene	<0.560		25.0	19.65		ug/L		79	37 - 132	10	26
1,2,3-Trichloropropane	<0.590		25.0	23.17		ug/L		93	49 - 130	5	26
1,2-Dibromo-3-Chloropropane	<1.20		25.0	24.13		ug/L		97	38 - 150	2	20
1,2-Dibromoethane (EDB)	<0.340		25.0	21.60		ug/L		86	60 - 130	4	20
1,2-Dichlorobenzene	<0.370		25.0	23.40		ug/L		94	59 - 130	1	20

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 310-281404-1 MSD
Matrix: Ground Water
Analysis Batch: 422316

Client Sample ID: OW-402B
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2-Dichloroethane	<0.390		25.0	19.64		ug/L		79	51 - 130	6	20
1,2-Dichloropropane	<0.270		25.0	21.74		ug/L		87	57 - 130	5	20
1,4-Dichlorobenzene	<0.230		25.0	22.21		ug/L		89	57 - 130	3	20
2-Butanone (MEK)	<2.10		50.0	43.61		ug/L		87	38 - 150	9	20
2-Hexanone	<2.00		50.0	47.46		ug/L		95	46 - 140	4	20
4-Methyl-2-pentanone (MIBK)	<2.10		50.0	48.90		ug/L		98	47 - 139	3	20
Acetone	<3.10		50.0	45.98		ug/L		92	31 - 150	0	29
Acrylonitrile	<2.20		250	229.6		ug/L		92	40 - 150	5	20
Benzene	<0.220		25.0	20.82		ug/L		83	46 - 130	9	20
Bromochloromethane	<0.540		25.0	20.07		ug/L		80	57 - 130	9	20
Bromodichloromethane	<0.390		25.0	20.16		ug/L		81	57 - 130	7	20
Bromoform	<0.780		25.0	20.84		ug/L		83	44 - 130	6	20
Carbon disulfide	<0.450		25.0	20.68		ug/L		83	38 - 135	12	30
Carbon tetrachloride	<0.650		25.0	18.63		ug/L		75	45 - 132	8	20
Chlorobenzene	<0.400		25.0	21.85		ug/L		87	59 - 130	7	20
Chlorodibromomethane	<0.750		25.0	20.84		ug/L		83	54 - 130	6	20
Chloroform	<1.30		25.0	19.55		ug/L		78	51 - 130	9	20
cis-1,2-Dichloroethene	0.521	J	25.0	20.44		ug/L		80	45 - 130	8	20
cis-1,3-Dichloropropene	<0.250		25.0	21.08		ug/L		84	53 - 130	4	20
Dibromomethane	<0.330		25.0	20.77		ug/L		83	59 - 130	6	20
Ethylbenzene	<0.310		25.0	22.60		ug/L		90	45 - 130	7	20
Iodomethane	<7.00		25.0	13.55		ug/L		54	10 - 150	14	35
Methylene Chloride	<1.70		25.0	22.34		ug/L		89	37 - 150	8	24
Styrene	<0.370		25.0	22.15		ug/L		89	47 - 130	7	20
Tetrachloroethene	<0.480		25.0	19.37		ug/L		77	47 - 130	8	20
Toluene	<0.430		25.0	20.88		ug/L		84	51 - 130	9	20
trans-1,2-Dichloroethene	<0.270		25.0	19.57		ug/L		78	48 - 130	9	22
trans-1,3-Dichloropropene	<0.560		25.0	20.29		ug/L		81	50 - 130	7	20
trans-1,4-Dichloro-2-butene	<1.10		25.0	20.43		ug/L		82	26 - 150	5	23
Trichloroethene	<0.430		25.0	20.42		ug/L		82	51 - 130	8	20
Vinyl acetate	<2.50		50.0	38.63		ug/L		77	29 - 150	1	23
Xylenes, Total	<0.400		50.0	45.09		ug/L		90	43 - 130	7	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*93*		*73 - 130*
Toluene-d8 (Surr)	*105*		*80 - 120*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-421951/1-A
Matrix: Water
Analysis Batch: 422276

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 421951

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.530		2.00	0.530	ug/L		05/17/24 09:30	05/20/24 19:32	1
Barium	<0.660		2.00	0.660	ug/L		05/17/24 09:30	05/20/24 19:32	1
Beryllium	<0.330		1.00	0.330	ug/L		05/17/24 09:30	05/20/24 19:32	1
Cadmium	<0.100		0.200	0.100	ug/L		05/17/24 09:30	05/20/24 19:32	1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 310-421951/1-A
Matrix: Water
Analysis Batch: 422276

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 421951

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	<1.20		5.00	1.20	ug/L		05/17/24 09:30	05/20/24 19:32	1
Copper	<1.80		5.00	1.80	ug/L		05/17/24 09:30	05/20/24 19:32	1
Lead	<0.260		0.500	0.260	ug/L		05/17/24 09:30	05/20/24 19:32	1
Selenium	<1.40		5.00	1.40	ug/L		05/17/24 09:30	05/20/24 19:32	1
Silver	<0.500		1.00	0.500	ug/L		05/17/24 09:30	05/20/24 19:32	1
Thallium	<0.570		1.00	0.570	ug/L		05/17/24 09:30	05/20/24 19:32	1
Vanadium	<1.10		5.00	1.10	ug/L		05/17/24 09:30	05/20/24 19:32	1
Zinc	<9.70		20.0	9.70	ug/L		05/17/24 09:30	05/20/24 19:32	1

Lab Sample ID: MB 310-421951/1-A
Matrix: Water
Analysis Batch: 422392

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 421951

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		05/17/24 09:30	05/21/24 14:08	1
Cobalt	<0.170		0.500	0.170	ug/L		05/17/24 09:30	05/21/24 14:08	1
Nickel	<2.10		5.00	2.10	ug/L		05/17/24 09:30	05/21/24 14:08	1

Lab Sample ID: LCS 310-421951/2-A
Matrix: Water
Analysis Batch: 422276

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 421951

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	200	205.0		ug/L		102	80 - 120
Barium	100	105.6		ug/L		106	80 - 120
Beryllium	100	102.7		ug/L		103	80 - 120
Cadmium	100	99.59		ug/L		100	80 - 120
Chromium	100	96.19		ug/L		96	80 - 120
Cobalt	100	111.1		ug/L		111	80 - 120
Copper	200	214.3		ug/L		107	80 - 120
Lead	200	212.3		ug/L		106	80 - 120
Selenium	400	400.4		ug/L		100	80 - 120
Silver	100	116.5		ug/L		117	80 - 120
Thallium	100	115.8		ug/L		116	80 - 120
Vanadium	100	97.02		ug/L		97	80 - 120
Zinc	200	203.3		ug/L		102	80 - 120

Lab Sample ID: LCS 310-421951/2-A
Matrix: Water
Analysis Batch: 422392

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 421951

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	200	228.1		ug/L		114	80 - 120
Nickel	200	204.7		ug/L		102	80 - 120

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: 310-281404-4 DU
Matrix: Ground Water
Analysis Batch: 422276

Client Sample ID: OW-413B
Prep Type: Total/NA
Prep Batch: 421951

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Arsenic	10.8		11.95		ug/L		10	20
Barium	632		637.4		ug/L		0.9	20
Beryllium	<0.330		<0.330		ug/L		NC	20
Cadmium	<0.100		<0.100		ug/L		NC	20
Chromium	6.15		7.507		ug/L		20	20
Cobalt	5.23		5.466		ug/L		4	20
Copper	3.27	J	3.563	J	ug/L		9	20
Lead	1.06		1.144		ug/L		7	20
Selenium	<1.40		<1.40		ug/L		NC	20
Silver	<0.500		<0.500		ug/L		NC	20
Thallium	<0.570		<0.570		ug/L		NC	20
Vanadium	5.91		7.094		ug/L		18	20
Zinc	<9.70		<9.70		ug/L		NC	20

Lab Sample ID: 310-281404-4 DU
Matrix: Ground Water
Analysis Batch: 422392

Client Sample ID: OW-413B
Prep Type: Total/NA
Prep Batch: 421951

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Antimony	<1.00		<1.00		ug/L		NC	20
Nickel	7.58		9.296		ug/L		20	20

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: MB 310-422173/1
Matrix: Water
Analysis Batch: 422173

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<3.70		5.00	3.70	mg/L			05/20/24 10:17	1

Lab Sample ID: LCS 310-422173/2
Matrix: Water
Analysis Batch: 422173

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	98.00		mg/L		98	81 - 116

Lab Sample ID: MB 310-422230/1
Matrix: Water
Analysis Batch: 422230

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<3.70		5.00	3.70	mg/L			05/20/24 14:19	1

Client: AECOM
Job ID: 310-281404-1
Project/Site: Black Hawk County Landfill (IDNR)

Method: I-3765-85 - Residue, Non-filterable (TSS) (Continued)

Lab Sample ID: LCS 310-422230/2
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 422230

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Suspended Solids			100	103.0		mg/L		103	81 - 116		

GC/MS VOA

Analysis Batch: 422316

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-281404-1	OW-402B	Total/NA	Ground Water	8260D	
310-281404-2	OW-411B	Total/NA	Ground Water	8260D	
310-281404-3	OW-412B	Total/NA	Ground Water	8260D	
310-281404-4	OW-413B	Total/NA	Ground Water	8260D	
310-281404-5	Trip Blank	Total/NA	Water	8260D	
MB 310-422316/5	Method Blank	Total/NA	Water	8260D	
LCS 310-422316/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-422316/7	Lab Control Sample	Total/NA	Water	8260D	
310-281404-1 MS	OW-402B	Total/NA	Ground Water	8260D	
310-281404-1 MSD	OW-402B	Total/NA	Ground Water	8260D	

Metals

Prep Batch: 421951

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-281404-1	OW-402B	Total/NA	Ground Water	3005A	
310-281404-2	OW-411B	Total/NA	Ground Water	3005A	
310-281404-3	OW-412B	Total/NA	Ground Water	3005A	
310-281404-4	OW-413B	Total/NA	Ground Water	3005A	
MB 310-421951/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-421951/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-281404-4 DU	OW-413B	Total/NA	Ground Water	3005A	

Analysis Batch: 422276

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-281404-1	OW-402B	Total/NA	Ground Water	6020B	421951
310-281404-2	OW-411B	Total/NA	Ground Water	6020B	421951
310-281404-3	OW-412B	Total/NA	Ground Water	6020B	421951
310-281404-4	OW-413B	Total/NA	Ground Water	6020B	421951
MB 310-421951/1-A	Method Blank	Total/NA	Water	6020B	421951
LCS 310-421951/2-A	Lab Control Sample	Total/NA	Water	6020B	421951
310-281404-4 DU	OW-413B	Total/NA	Ground Water	6020B	421951

Analysis Batch: 422392

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-281404-1	OW-402B	Total/NA	Ground Water	6020B	421951
310-281404-2	OW-411B	Total/NA	Ground Water	6020B	421951
310-281404-3	OW-412B	Total/NA	Ground Water	6020B	421951
310-281404-4	OW-413B	Total/NA	Ground Water	6020B	421951
MB 310-421951/1-A	Method Blank	Total/NA	Water	6020B	421951
LCS 310-421951/2-A	Lab Control Sample	Total/NA	Water	6020B	421951
310-281404-4 DU	OW-413B	Total/NA	Ground Water	6020B	421951

General Chemistry

Analysis Batch: 422173

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-281404-2	OW-411B	Total/NA	Ground Water	I-3765-85	
310-281404-4	OW-413B	Total/NA	Ground Water	I-3765-85	
MB 310-422173/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-422173/2	Lab Control Sample	Total/NA	Water	I-3765-85	

QC Association Summary

Client: AECOM
Job ID: 310-281404-1
Project/Site: Black Hawk County Landfill (IDNR)

General Chemistry

Analysis Batch: 422230

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-281404-1	OW-402B	Total/NA	Ground Water	I-3765-85	
310-281404-3	OW-412B	Total/NA	Ground Water	I-3765-85	
MB 310-422230/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-422230/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Field Service / Mobile Lab

Analysis Batch: 422183

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-281404-1	OW-402B	Total/NA	Ground Water	Field Sampling	
310-281404-2	OW-411B	Total/NA	Ground Water	Field Sampling	
310-281404-3	OW-412B	Total/NA	Ground Water	Field Sampling	
310-281404-4	OW-413B	Total/NA	Ground Water	Field Sampling	

Lab Chronicle

Client: AECOM
Job ID: 310-281404-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-402B
Lab Sample ID: 310-281404-1
Date Collected: 05/15/24 15:00
Matrix: Ground Water
Date Received: 05/16/24 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	422316	WSE8	EET CF	05/22/24 08:26
Total/NA	Prep	3005A			421951	KM3E	EET CF	05/17/24 09:30
Total/NA	Analysis	6020B		1	422276	NFT2	EET CF	05/20/24 20:11
Total/NA	Prep	3005A			421951	KM3E	EET CF	05/17/24 09:30
Total/NA	Analysis	6020B		1	422392	NFT2	EET CF	05/21/24 14:19
Total/NA	Analysis	I-3765-85		1	422230	HE7K	EET CF	05/20/24 14:19
Total/NA	Analysis	Field Sampling		1	422183	BJ0R	EET CF	05/15/24 15:00

Client Sample ID: OW-411B
Lab Sample ID: 310-281404-2
Date Collected: 05/15/24 10:45
Matrix: Ground Water
Date Received: 05/16/24 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	422316	WSE8	EET CF	05/22/24 08:47
Total/NA	Prep	3005A			421951	KM3E	EET CF	05/17/24 09:30
Total/NA	Analysis	6020B		1	422276	NFT2	EET CF	05/20/24 20:14
Total/NA	Prep	3005A			421951	KM3E	EET CF	05/17/24 09:30
Total/NA	Analysis	6020B		1	422392	NFT2	EET CF	05/21/24 14:21
Total/NA	Analysis	I-3765-85		1	422173	HE7K	EET CF	05/20/24 10:17
Total/NA	Analysis	Field Sampling		1	422183	BJ0R	EET CF	05/15/24 10:45

Client Sample ID: OW-412B
Lab Sample ID: 310-281404-3
Date Collected: 05/15/24 11:45
Matrix: Ground Water
Date Received: 05/16/24 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	422316	WSE8	EET CF	05/22/24 09:09
Total/NA	Prep	3005A			421951	KM3E	EET CF	05/17/24 09:30
Total/NA	Analysis	6020B		1	422276	NFT2	EET CF	05/20/24 20:16
Total/NA	Prep	3005A			421951	KM3E	EET CF	05/17/24 09:30
Total/NA	Analysis	6020B		1	422392	NFT2	EET CF	05/21/24 14:23
Total/NA	Analysis	I-3765-85		1	422230	HE7K	EET CF	05/20/24 14:19
Total/NA	Analysis	Field Sampling		1	422183	BJ0R	EET CF	05/15/24 11:45

Client Sample ID: OW-413B
Lab Sample ID: 310-281404-4
Date Collected: 05/15/24 12:45
Matrix: Ground Water
Date Received: 05/16/24 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	422316	WSE8	EET CF	05/22/24 09:31
Total/NA	Prep	3005A			421951	KM3E	EET CF	05/17/24 09:30
Total/NA	Analysis	6020B		1	422276	NFT2	EET CF	05/20/24 20:18
Total/NA	Prep	3005A			421951	KM3E	EET CF	05/17/24 09:30
Total/NA	Analysis	6020B		1	422392	NFT2	EET CF	05/21/24 14:25

Lab Chronicle

Client: AECOM
Job ID: 310-281404-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-413B
Lab Sample ID: 310-281404-4

Date Collected: 05/15/24 12:45
Matrix: Ground Water
Date Received: 05/16/24 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	I-3765-85		1	422173	HE7K	EET CF	05/20/24 10:17
Total/NA	Analysis	Field Sampling		1	422183	BJ0R	EET CF	05/15/24 12:45

Client Sample ID: Trip Blank
Lab Sample ID: 310-281404-5

Date Collected: 05/15/24 06:00
Matrix: Water
Date Received: 05/16/24 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	422316	WSE8	EET CF	05/22/24 09:53

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Accreditation/Certification Summary

Client: AECOM
Job ID: 310-281404-1
Project/Site: Black Hawk County Landfill (IDNR)

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8260D		Ground Water	m,p-Xylene
8260D		Ground Water	o-Xylene
8260D		Water	m,p-Xylene
8260D		Water	o-Xylene
Field Sampling		Ground Water	Field Turbidity

Method Summary

Client: AECOM
Job ID: 310-281404-1
Project/Site: Black Hawk County Landfill (IDNR)

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
Field Sampling	Field Sampling	EPA	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
5030B	Purge and Trap	SW846	EET CF

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

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310-281404 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: AECOM

City/State: CITY Waterloo STATE IA Project: BHC IDW

Receipt Information

Date/Time Received: DATE 5/16/24 TIME 1000 Received By: TO

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ Lab Field Services ☒ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☒ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☐ Yes ☒ No *If yes:* Cooler # _____ of _____

Cooler Custody Seals Present? ☐ Yes ☒ No *If yes:* Cooler custody seals intact? ☐ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☒ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☒ Yes ☐ No *If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: R Correction Factor (°C): 0.0

Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): Corrected Temp (°C):

Sample Container Temperature

	CONTAINER 1	CONTAINER 2
Container(s) used:	250 HDPE	
Uncorrected Temp (°C):	3.3	
Corrected Temp (°C):	3.3	

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE: If yes, contact PM before proceeding If no, proceed with login

Additional Comments

Eurofins Cedar Falls
3019 Venture Way

Cedar Falls, IA 50613
phone 319 277.2401 fax 319.277.2425

Chain of Custody Record

eurofins
Environment Testing America

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other IDNR

Eurofins Environment Testing America

Client Contact	**Project Manager: Chris Oelkers**	COC No
AECOM	Email Christopher Oelkers@aecom.com	**Site Contact:** / **Date:** 5-16-24	1 of 1 COCs
501 Sycamore Street, Suite 222	**Tel/Fax:319-296-6878**	**Lab Contact:** / **Carrier:**	TALS Project #
Waterloo, IA 50703	**Analysis Turnaround Time** ☑ CALENDAR DAYS ☐ WORKING DAYS		Sampler
(319) 232-6531 Phone	TAT if different from Below ☑ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day		**For Lab Use Only:** Walk-in Client: / Lab Sampling
(xxx) xxx-xxxx FAX			
Project Name Black Hawk Co IDNR			Job / SDG No
Site Black Hawk County Landfill			
P O #			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Appendix I, TSS	Appendix II, TSS	2,4-D	4,4'-DDD	beta-BHC	delta BHC	Endosulfan I	Endosulfan sulfate	Endrin aldehyde	Silvex	Sulfide	Sample Specific Notes
OW-401B			G	GW		N		X		X		X	X		X	X	X	X	
OW-402B	5-15-24	1500	G	GW	5	N		X											Turbidity - 0.82 NTU
MW-409B			G	GW		N		X											
OW-410B			G	GW		N		X											
OW-411B	5-15-24	1045	G	GW	5	N		X											Turbidity - 0.77 NTU
OW-412B	5-15-24	1145	G	GW	5	N		X											Turbidity - 47.33 NTU
OW-413B	5-15-24	1245	G	GW	5	N		X											Turbidity - 81.81 NTU
OW-414B			G	GW		N		X											
MW-501B			G	GW		N		X											
MW-602B			G	GW		N		X											
MW-602B-FD			G	GW		N		X											
Trip Blank	5-15-24	0600	G	W	2	N		X											

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No	Cooler Temp (°C) Obs'd _____ Corr'd. _____	Therm ID No. _____
Relinquished by: Ben Porter	Company: Aecom	Date/Time: 5-16-24	Received by:	Company:	Date/Time: 5/16/24 1030
Relinquished by:	Company:	Date/Time	Received by:	Company:	Date/Time
Relinquished by:	Company:	Date/Time	Received in Laboratory by:	Company:	Date/Time

5/26/2024

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-281404-1

Login Number: 281404

List Source: Eurofins Cedar Falls

List Number: 1

Creator: Homolar, Dana J

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Chris Oelkers
AECOM
501 Sycamore Street
Suite #222
Waterloo, Iowa 50703

Generated 5/30/2024 2:25:43 PM

JOB DESCRIPTION

Black Hawk County Landfill (IDNR)

JOB NUMBER

310-281290-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



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5/30/2024 2:25:43 PM

Authorized for release by
Zach Bindert, Client Service Manager
Zach.Bindert@et.eurofinsus.com
(319)277-2401

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Job Narrative
310-281290-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 5/15/2024 9:30 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 7.4°C.

GC/MS VOA
Method 8260D: The continuing calibration verification (CCV) associated with batch 310-422205 recovered above the upper control limit for Vinyl Chloride (22.2 %D). The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated sample is impacted: (CCV 310-422205/4).

Method 8260D: The method blank for analytical batch 310-422205 contained Vinyl Chloride above the method detection limit. This target analyte concentration was less than the reporting limit (RL) in the method blank; therefore, re-extraction and/or re-analysis of samples was not performed.

Method 8260D: The continuing calibration verification (CCV) associated with batch 310-422207 recovered above the upper control limit for 4-Methyl-2-pentanone (MIBK) (20.5%D) . The laboratory control sample associated with this CCV was within CCV criteria for the affected analytes; therefore, the data have been reported. The associated sample is impacted: (CCV 310-422207/3).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Pesticides
Method 8081B: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 310-422219. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

Method 8081B: The continuing calibration verification (CCV) associated with batch 310-422812 recovered above the upper control limit for Endrin aldehyde. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
Method 6020B: The reference method requires samples to be preserved to a pH of <2. The following sample was received with insufficient preservation at a pH of >2: OW-401B (310-281290-6). The sample(s) was preserved to the appropriate pH in the laboratory.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Field Service / Mobile Lab
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Sample Summary

Client: AECOM
Job ID: 310-281290-1
Project/Site: Black Hawk County Landfill (IDNR)

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-281290-1	MW-603B	Groundwater	05/14/24 14:00	05/15/24 09:30
310-281290-2	GUW2-1	Groundwater	05/14/24 13:30	05/15/24 09:30
310-281290-3	GUW2-1-FD	Groundwater	05/14/24 13:30	05/15/24 09:30
310-281290-4	OW-114B	Groundwater	05/14/24 12:00	05/15/24 09:30
310-281290-5	OW-216BR	Groundwater	05/14/24 13:00	05/15/24 09:30
310-281290-6	OW-401B	Groundwater	05/14/24 10:30	05/15/24 09:30
310-281290-7	Trip Blank	Water	05/14/24 00:00	05/15/24 09:30

Detection Summary

Client: AECOM
Job ID: 310-281290-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: MW-603B — Lab Sample ID: 310-281290-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.633	J	2.00	0.530	ug/L	1		6020B	Total/NA
Barium	38.6		2.00	0.660	ug/L	1		6020B	Total/NA
Field Turbidity	1.86				NTU	1		Field Sampling	Total/NA

Client Sample ID: GUW2-1 — Lab Sample ID: 310-281290-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	10.2		2.00	0.530	ug/L	1		6020B	Total/NA
Barium	246		2.00	0.660	ug/L	1		6020B	Total/NA
Cobalt	2.08		0.500	0.170	ug/L	1		6020B	Total/NA
Total Suspended Solids	25.0		7.50	5.55	mg/L	1		I-3765-85	Total/NA
Field Turbidity	9.74				NTU	1		Field Sampling	Total/NA

Client Sample ID: GUW2-1-FD — Lab Sample ID: 310-281290-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	0.224	J	1.00	0.180	ug/L	1		8260D	Total/NA
Arsenic	10.4		2.00	0.530	ug/L	1		6020B	Total/NA
Barium	247		2.00	0.660	ug/L	1		6020B	Total/NA
Cobalt	2.11		0.500	0.170	ug/L	1		6020B	Total/NA
Total Suspended Solids	26.5		7.50	5.55	mg/L	1		I-3765-85	Total/NA

Client Sample ID: OW-114B — Lab Sample ID: 310-281290-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	55.8		2.00	0.660	ug/L	1		6020B	Total/NA
Chromium	1.93	J	5.00	1.20	ug/L	1		6020B	Total/NA
Cobalt	0.830		0.500	0.170	ug/L	1		6020B	Total/NA
Copper	2.93	J	5.00	1.80	ug/L	1		6020B	Total/NA
Nickel	13.0		5.00	2.10	ug/L	1		6020B	Total/NA
Total Suspended Solids	1.88		1.88	1.39	mg/L	1		I-3765-85	Total/NA
Field Turbidity	19.11				NTU	1		Field Sampling	Total/NA

Client Sample ID: OW-216BR — Lab Sample ID: 310-281290-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	222		2.00	0.660	ug/L	1		6020B	Total/NA
Total Suspended Solids	2.88		1.88	1.39	mg/L	1		I-3765-85	Total/NA
Field Turbidity	3.71				NTU	1		Field Sampling	Total/NA

Client Sample ID: OW-401B — Lab Sample ID: 310-281290-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dichlorobenzene	1.22		1.00	0.230	ug/L	1		8260D	Total/NA
Acetone	9.57	J	10.0	3.10	ug/L	1		8260D	Total/NA
Benzene	3.79		0.500	0.220	ug/L	1		8260D	Total/NA
Chlorobenzene	0.473	J	1.00	0.400	ug/L	1		8260D	Total/NA
Chloroethane	0.998	J	4.00	0.790	ug/L	1		8260D	Total/NA
Arsenic	5.67		2.00	0.530	ug/L	1		6020B	Total/NA
Barium	1710		2.00	0.660	ug/L	1		6020B	Total/NA
Chromium	1.34	J	5.00	1.20	ug/L	1		6020B	Total/NA
Cobalt	2.50		0.500	0.170	ug/L	1		6020B	Total/NA
Nickel	47.0		5.00	2.10	ug/L	1		6020B	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: AECOM
Job ID: 310-281290-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-401B (Continued)
Lab Sample ID: 310-281290-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vanadium	2.55	J	5.00	1.10	ug/L	1		6020B	Total/NA
Total Suspended Solids	76.0		15.0	11.1	mg/L	1		I-3765-85	Total/NA
Field Turbidity	3.37				NTU	1		Field Sampling	Total/NA

Client Sample ID: Trip Blank
Lab Sample ID: 310-281290-7

No Detections.

This Detection Summary does not include radiochemical test results.

Client: AECOM
Job ID: 310-281290-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: MW-603B
Lab Sample ID: 310-281290-1
Date Collected: 05/14/24 14:00
Matrix: Groundwater
Date Received: 05/15/24 09:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/21/24 06:25	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/21/24 06:25	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/21/24 06:25	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/21/24 06:25	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/21/24 06:25	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/21/24 06:25	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/21/24 06:25	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/21/24 06:25	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/21/24 06:25	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/21/24 06:25	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/21/24 06:25	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/21/24 06:25	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/21/24 06:25	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/21/24 06:25	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/21/24 06:25	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/21/24 06:25	1
Acetone	<3.10		10.0	3.10	ug/L			05/21/24 06:25	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/21/24 06:25	1
Benzene	<0.220		0.500	0.220	ug/L			05/21/24 06:25	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/21/24 06:25	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/21/24 06:25	1
Bromoform	<0.780		5.00	0.780	ug/L			05/21/24 06:25	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/21/24 06:25	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/21/24 06:25	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/21/24 06:25	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/21/24 06:25	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/21/24 06:25	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/21/24 06:25	1
Chloroform	<1.30		3.00	1.30	ug/L			05/21/24 06:25	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/21/24 06:25	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/21/24 06:25	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/21/24 06:25	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/21/24 06:25	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/21/24 06:25	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/21/24 06:25	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/21/24 06:25	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/21/24 06:25	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/21/24 06:25	1
Styrene	<0.370		1.00	0.370	ug/L			05/21/24 06:25	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/21/24 06:25	1
Toluene	<0.430		1.00	0.430	ug/L			05/21/24 06:25	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/21/24 06:25	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/21/24 06:25	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/21/24 06:25	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/21/24 06:25	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/21/24 06:25	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/21/24 06:25	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/21/24 06:25	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/21/24 06:25	1

Client: AECOM
Job ID: 310-281290-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: MW-603B
Lab Sample ID: 310-281290-1
Date Collected: 05/14/24 14:00
Matrix: Groundwater
Date Received: 05/15/24 09:30

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*115*		*73 - 130*		*05/21/24 06:25*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*05/21/24 06:25*	*1*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*05/21/24 06:25*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		05/17/24 09:30	05/24/24 20:43	1
Arsenic	**0.633**	**J**	2.00	0.530	ug/L		05/17/24 09:30	05/24/24 20:43	1
Barium	**38.6**		2.00	0.660	ug/L		05/17/24 09:30	05/24/24 20:43	1
Beryllium	<0.330		1.00	0.330	ug/L		05/17/24 09:30	05/24/24 20:43	1
Cadmium	<0.100		0.200	0.100	ug/L		05/17/24 09:30	05/24/24 20:43	1
Chromium	<1.20		5.00	1.20	ug/L		05/17/24 09:30	05/24/24 20:43	1
Cobalt	<0.170		0.500	0.170	ug/L		05/17/24 09:30	05/24/24 20:43	1
Copper	<1.80		5.00	1.80	ug/L		05/17/24 09:30	05/24/24 20:43	1
Lead	<0.260		0.500	0.260	ug/L		05/17/24 09:30	05/24/24 20:43	1
Nickel	<2.10		5.00	2.10	ug/L		05/17/24 09:30	05/29/24 21:19	1
Selenium	<1.40		5.00	1.40	ug/L		05/17/24 09:30	05/24/24 20:43	1
Silver	<0.500		1.00	0.500	ug/L		05/17/24 09:30	05/29/24 21:19	1
Thallium	<0.570		1.00	0.570	ug/L		05/17/24 09:30	05/24/24 20:43	1
Vanadium	<1.10		5.00	1.10	ug/L		05/17/24 09:30	05/24/24 20:43	1
Zinc	<9.70		20.0	9.70	ug/L		05/17/24 09:30	05/24/24 20:43	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	<1.39		1.88	1.39	mg/L			05/17/24 08:46	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**1.86**				NTU			05/14/24 14:00	1

Client: AECOM
Job ID: 310-281290-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: GUW2-1
Lab Sample ID: 310-281290-2
Date Collected: 05/14/24 13:30
Matrix: Groundwater
Date Received: 05/15/24 09:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/21/24 06:48	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/21/24 06:48	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/21/24 06:48	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/21/24 06:48	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/21/24 06:48	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/21/24 06:48	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/21/24 06:48	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/21/24 06:48	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/21/24 06:48	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/21/24 06:48	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/21/24 06:48	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/21/24 06:48	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/21/24 06:48	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/21/24 06:48	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/21/24 06:48	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/21/24 06:48	1
Acetone	<3.10		10.0	3.10	ug/L			05/21/24 06:48	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/21/24 06:48	1
Benzene	<0.220		0.500	0.220	ug/L			05/21/24 06:48	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/21/24 06:48	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/21/24 06:48	1
Bromoform	<0.780		5.00	0.780	ug/L			05/21/24 06:48	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/21/24 06:48	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/21/24 06:48	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/21/24 06:48	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/21/24 06:48	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/21/24 06:48	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/21/24 06:48	1
Chloroform	<1.30		3.00	1.30	ug/L			05/21/24 06:48	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/21/24 06:48	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/21/24 06:48	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/21/24 06:48	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/21/24 06:48	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/21/24 06:48	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/21/24 06:48	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/21/24 06:48	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/21/24 06:48	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/21/24 06:48	1
Styrene	<0.370		1.00	0.370	ug/L			05/21/24 06:48	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/21/24 06:48	1
Toluene	<0.430		1.00	0.430	ug/L			05/21/24 06:48	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/21/24 06:48	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/21/24 06:48	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/21/24 06:48	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/21/24 06:48	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/21/24 06:48	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/21/24 06:48	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/21/24 06:48	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/21/24 06:48	1

Client: AECOM
Job ID: 310-281290-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: GUW2-1
Lab Sample ID: 310-281290-2

Date Collected: 05/14/24 13:30
Matrix: Groundwater
Date Received: 05/15/24 09:30

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*113*		*73 - 130*		*05/21/24 06:48*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*05/21/24 06:48*	*1*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*		*05/21/24 06:48*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		05/17/24 09:30	05/24/24 20:45	1
Arsenic	**10.2**		2.00	0.530	ug/L		05/17/24 09:30	05/24/24 20:45	1
Barium	**246**		2.00	0.660	ug/L		05/17/24 09:30	05/24/24 20:45	1
Beryllium	<0.330		1.00	0.330	ug/L		05/17/24 09:30	05/24/24 20:45	1
Cadmium	<0.100		0.200	0.100	ug/L		05/17/24 09:30	05/24/24 20:45	1
Chromium	<1.20		5.00	1.20	ug/L		05/17/24 09:30	05/24/24 20:45	1
Cobalt	**2.08**		0.500	0.170	ug/L		05/17/24 09:30	05/24/24 20:45	1
Copper	<1.80		5.00	1.80	ug/L		05/17/24 09:30	05/24/24 20:45	1
Lead	<0.260		0.500	0.260	ug/L		05/17/24 09:30	05/24/24 20:45	1
Nickel	<2.10		5.00	2.10	ug/L		05/17/24 09:30	05/29/24 21:22	1
Selenium	<1.40		5.00	1.40	ug/L		05/17/24 09:30	05/24/24 20:45	1
Silver	<0.500		1.00	0.500	ug/L		05/17/24 09:30	05/29/24 21:22	1
Thallium	<0.570		1.00	0.570	ug/L		05/17/24 09:30	05/24/24 20:45	1
Vanadium	<1.10		5.00	1.10	ug/L		05/17/24 09:30	05/24/24 20:45	1
Zinc	<9.70		20.0	9.70	ug/L		05/17/24 09:30	05/24/24 20:45	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**25.0**		7.50	5.55	mg/L			05/17/24 09:34	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**9.74**				NTU			05/14/24 13:30	1

Client: AECOM
Job ID: 310-281290-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: GUW2-1-FD
Lab Sample ID: 310-281290-3
Date Collected: 05/14/24 13:30
Matrix: Groundwater
Date Received: 05/15/24 09:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/21/24 07:11	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/21/24 07:11	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/21/24 07:11	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/21/24 07:11	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/21/24 07:11	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/21/24 07:11	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/21/24 07:11	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/21/24 07:11	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/21/24 07:11	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/21/24 07:11	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/21/24 07:11	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/21/24 07:11	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/21/24 07:11	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/21/24 07:11	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/21/24 07:11	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/21/24 07:11	1
Acetone	<3.10		10.0	3.10	ug/L			05/21/24 07:11	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/21/24 07:11	1
Benzene	<0.220		0.500	0.220	ug/L			05/21/24 07:11	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/21/24 07:11	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/21/24 07:11	1
Bromoform	<0.780		5.00	0.780	ug/L			05/21/24 07:11	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/21/24 07:11	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/21/24 07:11	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/21/24 07:11	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/21/24 07:11	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/21/24 07:11	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/21/24 07:11	1
Chloroform	<1.30		3.00	1.30	ug/L			05/21/24 07:11	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/21/24 07:11	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/21/24 07:11	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/21/24 07:11	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/21/24 07:11	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/21/24 07:11	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/21/24 07:11	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/21/24 07:11	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/21/24 07:11	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/21/24 07:11	1
Styrene	<0.370		1.00	0.370	ug/L			05/21/24 07:11	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/21/24 07:11	1
Toluene	<0.430		1.00	0.430	ug/L			05/21/24 07:11	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/21/24 07:11	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/21/24 07:11	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/21/24 07:11	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/21/24 07:11	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/21/24 07:11	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/21/24 07:11	1
Vinyl chloride	**0.224**	**J**	1.00	0.180	ug/L			05/23/24 23:44	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/21/24 07:11	1

Client: AECOM
Job ID: 310-281290-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: GUW2-1-FD
Lab Sample ID: 310-281290-3

Date Collected: 05/14/24 13:30
Matrix: Groundwater
Date Received: 05/15/24 09:30

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*116*		*73 - 130*		*05/21/24 07:11*	*1*
Dibromofluoromethane (Surr)	*112*		*73 - 130*		*05/23/24 23:44*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*05/21/24 07:11*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*05/23/24 23:44*	*1*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*05/21/24 07:11*	*1*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*05/23/24 23:44*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		05/17/24 09:30	05/24/24 20:47	1
Arsenic	**10.4**		2.00	0.530	ug/L		05/17/24 09:30	05/24/24 20:47	1
Barium	**247**		2.00	0.660	ug/L		05/17/24 09:30	05/24/24 20:47	1
Beryllium	<0.330		1.00	0.330	ug/L		05/17/24 09:30	05/24/24 20:47	1
Cadmium	<0.100		0.200	0.100	ug/L		05/17/24 09:30	05/24/24 20:47	1
Chromium	<1.20		5.00	1.20	ug/L		05/17/24 09:30	05/24/24 20:47	1
Cobalt	**2.11**		0.500	0.170	ug/L		05/17/24 09:30	05/24/24 20:47	1
Copper	<1.80		5.00	1.80	ug/L		05/17/24 09:30	05/24/24 20:47	1
Lead	<0.260		0.500	0.260	ug/L		05/17/24 09:30	05/24/24 20:47	1
Nickel	<2.10		5.00	2.10	ug/L		05/17/24 09:30	05/29/24 21:24	1
Selenium	<1.40		5.00	1.40	ug/L		05/17/24 09:30	05/24/24 20:47	1
Silver	<0.500		1.00	0.500	ug/L		05/17/24 09:30	05/29/24 21:24	1
Thallium	<0.570		1.00	0.570	ug/L		05/17/24 09:30	05/24/24 20:47	1
Vanadium	<1.10		5.00	1.10	ug/L		05/17/24 09:30	05/24/24 20:47	1
Zinc	<9.70		20.0	9.70	ug/L		05/17/24 09:30	05/24/24 20:47	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**26.5**		7.50	5.55	mg/L			05/17/24 08:46	1

Client: AECOM
Job ID: 310-281290-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-114B
Lab Sample ID: 310-281290-4
Date Collected: 05/14/24 12:00
Matrix: Groundwater
Date Received: 05/15/24 09:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/21/24 07:34	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/21/24 07:34	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/21/24 07:34	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/21/24 07:34	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/21/24 07:34	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/21/24 07:34	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/21/24 07:34	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/21/24 07:34	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/21/24 07:34	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/21/24 07:34	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/21/24 07:34	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/21/24 07:34	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/21/24 07:34	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/21/24 07:34	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/21/24 07:34	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/21/24 07:34	1
Acetone	<3.10		10.0	3.10	ug/L			05/21/24 07:34	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/21/24 07:34	1
Benzene	<0.220		0.500	0.220	ug/L			05/21/24 07:34	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/21/24 07:34	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/21/24 07:34	1
Bromoform	<0.780		5.00	0.780	ug/L			05/21/24 07:34	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/21/24 07:34	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/21/24 07:34	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/21/24 07:34	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/21/24 07:34	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/21/24 07:34	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/21/24 07:34	1
Chloroform	<1.30		3.00	1.30	ug/L			05/21/24 07:34	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/21/24 07:34	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/21/24 07:34	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/21/24 07:34	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/21/24 07:34	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/21/24 07:34	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/21/24 07:34	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/21/24 07:34	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/21/24 07:34	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/21/24 07:34	1
Styrene	<0.370		1.00	0.370	ug/L			05/21/24 07:34	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/21/24 07:34	1
Toluene	<0.430		1.00	0.430	ug/L			05/21/24 07:34	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/21/24 07:34	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/21/24 07:34	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/21/24 07:34	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/21/24 07:34	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/21/24 07:34	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/21/24 07:34	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/21/24 07:34	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/21/24 07:34	1

Client: AECOM
Project/Site: Black Hawk County Landfill (IDNR)

Job ID: 310-281290-1

Client Sample ID: OW-114B

Date Collected: 05/14/24 12:00
Date Received: 05/15/24 09:30

Lab Sample ID: 310-281290-4

Matrix: Groundwater

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*113*		*73 - 130*		*05/21/24 07:34*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*05/21/24 07:34*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*05/21/24 07:34*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		05/17/24 09:30	05/24/24 20:50	1
Arsenic	<0.530		2.00	0.530	ug/L		05/17/24 09:30	05/24/24 20:50	1
Barium	**55.8**		2.00	0.660	ug/L		05/17/24 09:30	05/24/24 20:50	1
Beryllium	<0.330		1.00	0.330	ug/L		05/17/24 09:30	05/24/24 20:50	1
Cadmium	<0.100		0.200	0.100	ug/L		05/17/24 09:30	05/24/24 20:50	1
Chromium	**1.93**	**J**	5.00	1.20	ug/L		05/17/24 09:30	05/24/24 20:50	1
Cobalt	**0.830**		0.500	0.170	ug/L		05/17/24 09:30	05/24/24 20:50	1
Copper	**2.93**	**J**	5.00	1.80	ug/L		05/17/24 09:30	05/24/24 20:50	1
Lead	<0.260		0.500	0.260	ug/L		05/17/24 09:30	05/24/24 20:50	1
Nickel	**13.0**		5.00	2.10	ug/L		05/17/24 09:30	05/29/24 21:26	1
Selenium	<1.40		5.00	1.40	ug/L		05/17/24 09:30	05/24/24 20:50	1
Silver	<0.500		1.00	0.500	ug/L		05/17/24 09:30	05/29/24 21:26	1
Thallium	<0.570		1.00	0.570	ug/L		05/17/24 09:30	05/24/24 20:50	1
Vanadium	<1.10		5.00	1.10	ug/L		05/17/24 09:30	05/24/24 20:50	1
Zinc	<9.70		20.0	9.70	ug/L		05/17/24 09:30	05/24/24 20:50	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**1.88**		1.88	1.39	mg/L			05/17/24 08:46	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**19.11**				NTU			05/14/24 12:00	1

Client: AECOM
Job ID: 310-281290-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-216BR
Lab Sample ID: 310-281290-5
Date Collected: 05/14/24 13:00
Matrix: Groundwater
Date Received: 05/15/24 09:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/21/24 07:57	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/21/24 07:57	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/21/24 07:57	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/21/24 07:57	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/21/24 07:57	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/21/24 07:57	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/21/24 07:57	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/21/24 07:57	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/21/24 07:57	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/21/24 07:57	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/21/24 07:57	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/21/24 07:57	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/21/24 07:57	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/21/24 07:57	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/21/24 07:57	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/21/24 07:57	1
Acetone	<3.10		10.0	3.10	ug/L			05/21/24 07:57	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/21/24 07:57	1
Benzene	<0.220		0.500	0.220	ug/L			05/21/24 07:57	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/21/24 07:57	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/21/24 07:57	1
Bromoform	<0.780		5.00	0.780	ug/L			05/21/24 07:57	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/21/24 07:57	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/21/24 07:57	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/21/24 07:57	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/21/24 07:57	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/21/24 07:57	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/21/24 07:57	1
Chloroform	<1.30		3.00	1.30	ug/L			05/21/24 07:57	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/21/24 07:57	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/21/24 07:57	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/21/24 07:57	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/21/24 07:57	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/21/24 07:57	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/21/24 07:57	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/21/24 07:57	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/21/24 07:57	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/21/24 07:57	1
Styrene	<0.370		1.00	0.370	ug/L			05/21/24 07:57	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/21/24 07:57	1
Toluene	<0.430		1.00	0.430	ug/L			05/21/24 07:57	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/21/24 07:57	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/21/24 07:57	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/21/24 07:57	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/21/24 07:57	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/21/24 07:57	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/21/24 07:57	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/21/24 07:57	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/21/24 07:57	1

Client: AECOM
Job ID: 310-281290-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-216BR
Lab Sample ID: 310-281290-5

Date Collected: 05/14/24 13:00
Matrix: Groundwater
Date Received: 05/15/24 09:30

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*112*		*73 - 130*		*05/21/24 07:57*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*05/21/24 07:57*	*1*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*05/21/24 07:57*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		05/17/24 09:30	05/24/24 20:52	1
Arsenic	<0.530		2.00	0.530	ug/L		05/17/24 09:30	05/24/24 20:52	1
Barium	**222**		2.00	0.660	ug/L		05/17/24 09:30	05/24/24 20:52	1
Beryllium	<0.330		1.00	0.330	ug/L		05/17/24 09:30	05/24/24 20:52	1
Cadmium	<0.100		0.200	0.100	ug/L		05/17/24 09:30	05/24/24 20:52	1
Chromium	<1.20		5.00	1.20	ug/L		05/17/24 09:30	05/24/24 20:52	1
Cobalt	<0.170		0.500	0.170	ug/L		05/17/24 09:30	05/24/24 20:52	1
Copper	<1.80		5.00	1.80	ug/L		05/17/24 09:30	05/24/24 20:52	1
Lead	<0.260		0.500	0.260	ug/L		05/17/24 09:30	05/24/24 20:52	1
Nickel	<2.10		5.00	2.10	ug/L		05/17/24 09:30	05/29/24 21:37	1
Selenium	<1.40		5.00	1.40	ug/L		05/17/24 09:30	05/24/24 20:52	1
Silver	<0.500		1.00	0.500	ug/L		05/17/24 09:30	05/29/24 21:37	1
Thallium	<0.570		1.00	0.570	ug/L		05/17/24 09:30	05/24/24 20:52	1
Vanadium	<1.10		5.00	1.10	ug/L		05/17/24 09:30	05/24/24 20:52	1
Zinc	<9.70		20.0	9.70	ug/L		05/17/24 09:30	05/24/24 20:52	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**2.88**		1.88	1.39	mg/L			05/17/24 08:46	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**3.71**				NTU			05/14/24 13:00	1

Client: AECOM
Job ID: 310-281290-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-401B
Lab Sample ID: 310-281290-6
Date Collected: 05/14/24 10:30
Matrix: Groundwater
Date Received: 05/15/24 09:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/21/24 08:19	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/21/24 08:19	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/21/24 08:19	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/21/24 08:19	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/21/24 08:19	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/21/24 08:19	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/21/24 08:19	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/21/24 08:19	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/21/24 08:19	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/21/24 08:19	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/21/24 08:19	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/21/24 08:19	1
1,4-Dichlorobenzene	**1.22**		1.00	0.230	ug/L			05/21/24 08:19	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/21/24 08:19	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/21/24 08:19	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/21/24 08:19	1
Acetone	**9.57**	**J**	10.0	3.10	ug/L			05/21/24 08:19	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/21/24 08:19	1
Benzene	**3.79**		0.500	0.220	ug/L			05/21/24 08:19	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/21/24 08:19	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/21/24 08:19	1
Bromoform	<0.780		5.00	0.780	ug/L			05/21/24 08:19	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/21/24 08:19	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/21/24 08:19	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/21/24 08:19	1
Chlorobenzene	**0.473**	**J**	1.00	0.400	ug/L			05/21/24 08:19	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/21/24 08:19	1
Chloroethane	**0.998**	**J**	4.00	0.790	ug/L			05/21/24 08:19	1
Chloroform	<1.30		3.00	1.30	ug/L			05/21/24 08:19	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/21/24 08:19	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/21/24 08:19	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/21/24 08:19	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/21/24 08:19	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/21/24 08:19	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/21/24 08:19	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/21/24 08:19	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/21/24 08:19	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/21/24 08:19	1
Styrene	<0.370		1.00	0.370	ug/L			05/21/24 08:19	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/21/24 08:19	1
Toluene	<0.430		1.00	0.430	ug/L			05/21/24 08:19	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/21/24 08:19	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/21/24 08:19	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/21/24 08:19	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/21/24 08:19	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/21/24 08:19	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/21/24 08:19	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/21/24 08:19	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/21/24 08:19	1

Client: AECOM
Job ID: 310-281290-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-401B
Lab Sample ID: 310-281290-6

Date Collected: 05/14/24 10:30
Matrix: Groundwater
Date Received: 05/15/24 09:30

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*109*		*73 - 130*		*05/21/24 08:19*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*05/21/24 08:19*	*1*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*05/21/24 08:19*	*1*

Method: SW846 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
alpha-BHC	<0.0315		0.0696	0.0315	ug/L		05/21/24 08:00	05/28/24 15:42	1
Endrin aldehyde	<0.0315		0.0696	0.0315	ug/L		05/21/24 08:00	05/28/24 15:42	1
Endosulfan sulfate	<0.0326		0.0696	0.0326	ug/L		05/21/24 08:00	05/28/24 15:42	1
beta-BHC	<0.0402		0.0696	0.0402	ug/L		05/21/24 08:00	05/28/24 15:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*73*		*10 - 136*	*05/21/24 08:00*	*05/28/24 15:42*	*1*
Tetrachloro-m-xylene (Surr)	*59*		*10 - 130*	*05/21/24 08:00*	*05/28/24 15:42*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		05/17/24 09:30	05/24/24 20:54	1
Arsenic	**5.67**		2.00	0.530	ug/L		05/17/24 09:30	05/24/24 20:54	1
Barium	**1710**		2.00	0.660	ug/L		05/17/24 09:30	05/24/24 20:54	1
Beryllium	<0.330		1.00	0.330	ug/L		05/17/24 09:30	05/24/24 20:54	1
Cadmium	<0.100		0.200	0.100	ug/L		05/17/24 09:30	05/24/24 20:54	1
Chromium	**1.34**	**J**	5.00	1.20	ug/L		05/17/24 09:30	05/24/24 20:54	1
Cobalt	**2.50**		0.500	0.170	ug/L		05/17/24 09:30	05/24/24 20:54	1
Copper	<1.80		5.00	1.80	ug/L		05/17/24 09:30	05/24/24 20:54	1
Lead	<0.260		0.500	0.260	ug/L		05/17/24 09:30	05/24/24 20:54	1
Nickel	**47.0**		5.00	2.10	ug/L		05/17/24 09:30	05/29/24 21:39	1
Selenium	<1.40		5.00	1.40	ug/L		05/17/24 09:30	05/24/24 20:54	1
Silver	<0.500		1.00	0.500	ug/L		05/17/24 09:30	05/29/24 21:39	1
Thallium	<0.570		1.00	0.570	ug/L		05/17/24 09:30	05/24/24 20:54	1
Vanadium	**2.55**	**J**	5.00	1.10	ug/L		05/17/24 09:30	05/24/24 20:54	1
Zinc	<9.70		20.0	9.70	ug/L		05/17/24 09:30	05/24/24 20:54	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide (SW846 9034)	<1.41		3.00	1.41	mg/L		05/20/24 07:41	05/20/24 09:22	1
Total Suspended Solids (USGS I-3765-85)	**76.0**		15.0	11.1	mg/L			05/17/24 08:46	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**3.37**				NTU			05/14/24 10:30	1

Client: AECOM
Job ID: 310-281290-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Trip Blank
Lab Sample ID: 310-281290-7
Date Collected: 05/14/24 00:00
Matrix: Water
Date Received: 05/15/24 09:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/21/24 12:29	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/21/24 12:29	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/21/24 12:29	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/21/24 12:29	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/21/24 12:29	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/21/24 12:29	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/21/24 12:29	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/21/24 12:29	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/21/24 12:29	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/21/24 12:29	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/21/24 12:29	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/21/24 12:29	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/21/24 12:29	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/21/24 12:29	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/21/24 12:29	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/21/24 12:29	1
Acetone	<3.10		10.0	3.10	ug/L			05/21/24 12:29	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/21/24 12:29	1
Benzene	<0.220		0.500	0.220	ug/L			05/21/24 12:29	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/21/24 12:29	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/21/24 12:29	1
Bromoform	<0.780		5.00	0.780	ug/L			05/21/24 12:29	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/21/24 12:29	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/21/24 12:29	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/21/24 12:29	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/21/24 12:29	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/21/24 12:29	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/21/24 12:29	1
Chloroform	<1.30		3.00	1.30	ug/L			05/21/24 12:29	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/21/24 12:29	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/21/24 12:29	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/21/24 12:29	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/21/24 12:29	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/21/24 12:29	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/21/24 12:29	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/21/24 12:29	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/21/24 12:29	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/21/24 12:29	1
Styrene	<0.370		1.00	0.370	ug/L			05/21/24 12:29	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/21/24 12:29	1
Toluene	<0.430		1.00	0.430	ug/L			05/21/24 12:29	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/21/24 12:29	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/21/24 12:29	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/21/24 12:29	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/21/24 12:29	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/21/24 12:29	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/21/24 12:29	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/21/24 12:29	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/21/24 12:29	1

Client: AECOM
Job ID: 310-281290-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Trip Blank
Lab Sample ID: 310-281290-7
Date Collected: 05/14/24 00:00
Matrix: Water
Date Received: 05/15/24 09:30

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	111		73 - 130		05/21/24 12:29	1
Toluene-d8 (Surr)	97		80 - 120		05/21/24 12:29	1
4-Bromofluorobenzene (Surr)	99		80 - 120		05/21/24 12:29	1

Definitions/Glossary

Client: AECOM
Job ID: 310-281290-1
Project/Site: Black Hawk County Landfill (IDNR)

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Surrogate Summary

Client: AECOM
Job ID: 310-281290-1
Project/Site: Black Hawk County Landfill (IDNR)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Groundwater — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-281290-1	MW-603B	115	98	99
310-281290-2	GUW2-1	113	98	100
310-281290-3	GUW2-1-FD	116	96	99
310-281290-3	GUW2-1-FD	112	96	99
310-281290-4	OW-114B	113	97	101
310-281290-5	OW-216BR	112	98	99
310-281290-6	OW-401B	109	97	99

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-281290-7	Trip Blank	111	97	99
LCS 310-422205/6	Lab Control Sample	99	101	101
LCS 310-422205/7	Lab Control Sample	115	96	100
LCS 310-422207/6	Lab Control Sample	99	101	100
LCS 310-422207/7	Lab Control Sample	113	97	102
LCS 310-422561/6	Lab Control Sample	98	101	102
LCS 310-422561/7	Lab Control Sample	111	97	100
MB 310-422205/5	Method Blank	113	98	102
MB 310-422207/5	Method Blank	113	98	100
MB 310-422561/5	Method Blank	111	96	98

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Groundwater — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		DCB1	TCX1
Lab Sample ID	Client Sample ID	(10-136)	(10-130)
310-281290-6	OW-401B	73	59

Surrogate Legend

DCB = DCB Decachlorobiphenyl (Surr)
TCX = Tetrachloro-m-xylene (Surr)

Surrogate Summary

Client: AECOM
Job ID: 310-281290-1
Project/Site: Black Hawk County Landfill (IDNR)

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)									
		DCB1	TCX1								
Lab Sample ID	Client Sample ID	(10-136)	(10-130)								
LCS 310-422219/4-A	Lab Control Sample	75	77								
LCSD 310-422219/5-A	Lab Control Sample Dup	52	66								
MB 310-422219/1-A	Method Blank	73	68								

Surrogate Legend

DCB = DCB Decachlorobiphenyl (Surr)

TCX = Tetrachloro-m-xylene (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 310-422205/5
Matrix: Water
Analysis Batch: 422205

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/21/24 00:21	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/21/24 00:21	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/21/24 00:21	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/21/24 00:21	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/21/24 00:21	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/21/24 00:21	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/21/24 00:21	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/21/24 00:21	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/21/24 00:21	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/21/24 00:21	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/21/24 00:21	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/21/24 00:21	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/21/24 00:21	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/21/24 00:21	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/21/24 00:21	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/21/24 00:21	1
Acetone	<3.10		10.0	3.10	ug/L			05/21/24 00:21	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/21/24 00:21	1
Benzene	<0.220		0.500	0.220	ug/L			05/21/24 00:21	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/21/24 00:21	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/21/24 00:21	1
Bromoform	<0.780		5.00	0.780	ug/L			05/21/24 00:21	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/21/24 00:21	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/21/24 00:21	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/21/24 00:21	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/21/24 00:21	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/21/24 00:21	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/21/24 00:21	1
Chloroform	<1.30		3.00	1.30	ug/L			05/21/24 00:21	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/21/24 00:21	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/21/24 00:21	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/21/24 00:21	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/21/24 00:21	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/21/24 00:21	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/21/24 00:21	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/21/24 00:21	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/21/24 00:21	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/21/24 00:21	1
Styrene	<0.370		1.00	0.370	ug/L			05/21/24 00:21	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/21/24 00:21	1
Toluene	<0.430		1.00	0.430	ug/L			05/21/24 00:21	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/21/24 00:21	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/21/24 00:21	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/21/24 00:21	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/21/24 00:21	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/21/24 00:21	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/21/24 00:21	1
Vinyl chloride	0.2884	J	1.00	0.180	ug/L			05/21/24 00:21	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-422205/5
Matrix: Water
Analysis Batch: 422205

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/21/24 00:21	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*113*		*73 - 130*		*05/21/24 00:21*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*05/21/24 00:21*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*		*05/21/24 00:21*	*1*

Lab Sample ID: LCS 310-422205/6
Matrix: Water
Analysis Batch: 422205

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	20.0	21.65		ug/L		108	71 - 120
1,1,1-Trichloroethane	20.0	22.06		ug/L		110	73 - 129
1,1,2,2-Tetrachloroethane	20.0	20.35		ug/L		102	68 - 124
1,1,2-Trichloroethane	20.0	22.66		ug/L		113	73 - 123
1,1-Dichloroethane	20.0	21.15		ug/L		106	70 - 127
1,1-Dichloroethene	20.0	20.64		ug/L		103	63 - 132
1,2,3-Trichloropropane	20.0	21.33		ug/L		107	65 - 127
1,2-Dibromo-3-Chloropropane	20.0	21.10		ug/L		106	50 - 150
1,2-Dibromoethane (EDB)	20.0	22.65		ug/L		113	75 - 125
1,2-Dichlorobenzene	20.0	21.32		ug/L		107	74 - 120
1,2-Dichloroethane	20.0	22.09		ug/L		110	71 - 125
1,2-Dichloropropane	20.0	23.09		ug/L		115	73 - 124
1,4-Dichlorobenzene	20.0	21.34		ug/L		107	72 - 120
2-Butanone (MEK)	40.0	44.07		ug/L		110	50 - 150
2-Hexanone	40.0	44.46		ug/L		111	60 - 140
4-Methyl-2-pentanone (MIBK)	40.0	44.99		ug/L		112	60 - 139
Acetone	40.0	43.03		ug/L		108	50 - 150
Acrylonitrile	200	218.3		ug/L		109	50 - 150
Benzene	20.0	21.74		ug/L		109	72 - 124
Bromochloromethane	20.0	21.34		ug/L		107	73 - 130
Bromodichloromethane	20.0	21.50		ug/L		107	74 - 122
Bromoform	20.0	20.61		ug/L		103	61 - 122
Carbon disulfide	20.0	20.69		ug/L		103	59 - 135
Carbon tetrachloride	20.0	23.39		ug/L		117	67 - 132
Chlorobenzene	20.0	21.34		ug/L		107	76 - 120
Chlorodibromomethane	20.0	22.17		ug/L		111	71 - 121
Chloroform	20.0	21.38		ug/L		107	72 - 125
cis-1,2-Dichloroethene	20.0	20.73		ug/L		104	74 - 123
cis-1,3-Dichloropropene	20.0	22.50		ug/L		113	71 - 125
Dibromomethane	20.0	21.32		ug/L		107	74 - 125
Ethylbenzene	20.0	21.58		ug/L		108	74 - 122
Iodomethane	20.0	21.99		ug/L		110	10 - 150
Methylene Chloride	20.0	20.28		ug/L		101	50 - 150
Styrene	20.0	21.68		ug/L		108	74 - 121
Tetrachloroethene	20.0	22.08		ug/L		110	71 - 130
Toluene	20.0	20.94		ug/L		105	74 - 123

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-422205/6
Matrix: Water
Analysis Batch: 422205

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
trans-1,2-Dichloroethene	20.0	21.18		ug/L		106	70 - 126
trans-1,3-Dichloropropene	20.0	21.25		ug/L		106	69 - 123
trans-1,4-Dichloro-2-butene	20.0	21.57		ug/L		108	50 - 150
Trichloroethene	20.0	21.98		ug/L		110	72 - 126
Vinyl acetate	40.0	41.84		ug/L		105	50 - 150
Xylenes, Total	40.0	43.39		ug/L		108	73 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*99*		*73 - 130*
Toluene-d8 (Surr)	*101*		*80 - 120*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*

Lab Sample ID: LCS 310-422205/7
Matrix: Water
Analysis Batch: 422205

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	20.54		ug/L		103	23 - 150
Chloroethane	20.0	22.95		ug/L		115	54 - 136
Chloromethane	20.0	24.41		ug/L		122	38 - 150
Trichlorofluoromethane	20.0	23.61		ug/L		118	54 - 149
Vinyl chloride	20.0	24.27		ug/L		121	56 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*115*		*73 - 130*
Toluene-d8 (Surr)	*96*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*

Lab Sample ID: MB 310-422207/5
Matrix: Water
Analysis Batch: 422207

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/21/24 11:21	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/21/24 11:21	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/21/24 11:21	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/21/24 11:21	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/21/24 11:21	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/21/24 11:21	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/21/24 11:21	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/21/24 11:21	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/21/24 11:21	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/21/24 11:21	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/21/24 11:21	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/21/24 11:21	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/21/24 11:21	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/21/24 11:21	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/21/24 11:21	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-422207/5
Matrix: Water
Analysis Batch: 422207

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/21/24 11:21	1
Acetone	<3.10		10.0	3.10	ug/L			05/21/24 11:21	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/21/24 11:21	1
Benzene	<0.220		0.500	0.220	ug/L			05/21/24 11:21	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/21/24 11:21	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/21/24 11:21	1
Bromoform	<0.780		5.00	0.780	ug/L			05/21/24 11:21	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/21/24 11:21	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/21/24 11:21	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/21/24 11:21	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/21/24 11:21	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/21/24 11:21	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/21/24 11:21	1
Chloroform	<1.30		3.00	1.30	ug/L			05/21/24 11:21	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/21/24 11:21	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/21/24 11:21	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/21/24 11:21	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/21/24 11:21	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/21/24 11:21	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/21/24 11:21	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/21/24 11:21	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/21/24 11:21	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/21/24 11:21	1
Styrene	<0.370		1.00	0.370	ug/L			05/21/24 11:21	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/21/24 11:21	1
Toluene	<0.430		1.00	0.430	ug/L			05/21/24 11:21	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/21/24 11:21	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/21/24 11:21	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/21/24 11:21	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/21/24 11:21	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/21/24 11:21	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/21/24 11:21	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/21/24 11:21	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/21/24 11:21	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*113*		*73 - 130*		*05/21/24 11:21*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*05/21/24 11:21*	*1*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*		*05/21/24 11:21*	*1*

Lab Sample ID: LCS 310-422207/6
Matrix: Water
Analysis Batch: 422207

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	20.0	20.28		ug/L		101	71 - 120
1,1,1-Trichloroethane	20.0	20.28		ug/L		101	73 - 129
1,1,2,2-Tetrachloroethane	20.0	21.00		ug/L		105	68 - 124

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-422207/6
Matrix: Water
Analysis Batch: 422207

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,2-Trichloroethane	20.0	21.61		ug/L		108	73 - 123
1,1-Dichloroethane	20.0	19.37		ug/L		97	70 - 127
1,1-Dichloroethene	20.0	18.99		ug/L		95	63 - 132
1,2,3-Trichloropropane	20.0	21.14		ug/L		106	65 - 127
1,2-Dibromo-3-Chloropropane	20.0	21.36		ug/L		107	50 - 150
1,2-Dibromoethane (EDB)	20.0	22.05		ug/L		110	75 - 125
1,2-Dichlorobenzene	20.0	20.34		ug/L		102	74 - 120
1,2-Dichloroethane	20.0	21.20		ug/L		106	71 - 125
1,2-Dichloropropane	20.0	21.47		ug/L		107	73 - 124
1,4-Dichlorobenzene	20.0	19.96		ug/L		100	72 - 120
2-Butanone (MEK)	40.0	45.87		ug/L		115	50 - 150
2-Hexanone	40.0	46.52		ug/L		116	60 - 140
4-Methyl-2-pentanone (MIBK)	40.0	46.05		ug/L		115	60 - 139
Acetone	40.0	43.50		ug/L		109	50 - 150
Acrylonitrile	200	220.9		ug/L		110	50 - 150
Benzene	20.0	20.34		ug/L		102	72 - 124
Bromochloromethane	20.0	20.25		ug/L		101	73 - 130
Bromodichloromethane	20.0	20.15		ug/L		101	74 - 122
Bromoform	20.0	20.22		ug/L		101	61 - 122
Carbon disulfide	20.0	18.86		ug/L		94	59 - 135
Carbon tetrachloride	20.0	21.44		ug/L		107	67 - 132
Chlorobenzene	20.0	20.01		ug/L		100	76 - 120
Chlorodibromomethane	20.0	20.93		ug/L		105	71 - 121
Chloroform	20.0	19.96		ug/L		100	72 - 125
cis-1,2-Dichloroethene	20.0	19.04		ug/L		95	74 - 123
cis-1,3-Dichloropropene	20.0	20.78		ug/L		104	71 - 125
Dibromomethane	20.0	20.56		ug/L		103	74 - 125
Ethylbenzene	20.0	20.37		ug/L		102	74 - 122
Iodomethane	20.0	19.31		ug/L		97	10 - 150
Methylene Chloride	20.0	19.17		ug/L		96	50 - 150
Styrene	20.0	20.44		ug/L		102	74 - 121
Tetrachloroethene	20.0	20.16		ug/L		101	71 - 130
Toluene	20.0	19.34		ug/L		97	74 - 123
trans-1,2-Dichloroethene	20.0	19.25		ug/L		96	70 - 126
trans-1,3-Dichloropropene	20.0	19.97		ug/L		100	69 - 123
trans-1,4-Dichloro-2-butene	20.0	19.62		ug/L		98	50 - 150
Trichloroethene	20.0	20.58		ug/L		103	72 - 126
Vinyl acetate	40.0	40.45		ug/L		101	50 - 150
Xylenes, Total	40.0	40.46		ug/L		101	73 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*99*		*73 - 130*
Toluene-d8 (Surr)	*101*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-422207/7
Matrix: Water
Analysis Batch: 422207

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Bromomethane			20.0	19.56		ug/L		98	23 - 150		
Chloroethane			20.0	21.21		ug/L		106	54 - 136		
Chloromethane			20.0	22.23		ug/L		111	38 - 150		
Trichlorofluoromethane			20.0	21.81		ug/L		109	54 - 149		
Vinyl chloride			20.0	22.32		ug/L		112	56 - 140		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*113*		*73 - 130*
Toluene-d8 (Surr)	*97*		*80 - 120*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*

Lab Sample ID: MB 310-422561/5
Matrix: Water
Analysis Batch: 422561

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/23/24 18:25	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/23/24 18:25	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/23/24 18:25	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/23/24 18:25	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/23/24 18:25	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/23/24 18:25	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/23/24 18:25	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/23/24 18:25	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/23/24 18:25	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/23/24 18:25	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/23/24 18:25	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/23/24 18:25	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/23/24 18:25	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/23/24 18:25	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/23/24 18:25	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/23/24 18:25	1
Acetone	<3.10		10.0	3.10	ug/L			05/23/24 18:25	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/23/24 18:25	1
Benzene	<0.220		0.500	0.220	ug/L			05/23/24 18:25	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/23/24 18:25	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/23/24 18:25	1
Bromoform	<0.780		5.00	0.780	ug/L			05/23/24 18:25	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/23/24 18:25	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/23/24 18:25	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/23/24 18:25	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/23/24 18:25	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/23/24 18:25	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/23/24 18:25	1
Chloroform	<1.30		3.00	1.30	ug/L			05/23/24 18:25	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/23/24 18:25	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/23/24 18:25	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/23/24 18:25	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-422561/5
Matrix: Water
Analysis Batch: 422561

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibromomethane	<0.330		1.00	0.330	ug/L			05/23/24 18:25	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/23/24 18:25	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/23/24 18:25	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/23/24 18:25	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/23/24 18:25	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/23/24 18:25	1
Styrene	<0.370		1.00	0.370	ug/L			05/23/24 18:25	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/23/24 18:25	1
Toluene	<0.430		1.00	0.430	ug/L			05/23/24 18:25	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/23/24 18:25	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/23/24 18:25	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/23/24 18:25	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/23/24 18:25	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/23/24 18:25	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/23/24 18:25	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/23/24 18:25	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/23/24 18:25	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*111*		*73 - 130*		*05/23/24 18:25*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*05/23/24 18:25*	*1*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*05/23/24 18:25*	*1*

Lab Sample ID: LCS 310-422561/6
Matrix: Water
Analysis Batch: 422561

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	20.0	21.78		ug/L		109	71 - 120
1,1,1-Trichloroethane	20.0	21.83		ug/L		109	73 - 129
1,1,2,2-Tetrachloroethane	20.0	21.69		ug/L		108	68 - 124
1,1,2-Trichloroethane	20.0	23.11		ug/L		116	73 - 123
1,1-Dichloroethane	20.0	20.86		ug/L		104	70 - 127
1,1-Dichloroethene	20.0	19.89		ug/L		99	63 - 132
1,2,3-Trichloropropane	20.0	22.30		ug/L		112	65 - 127
1,2-Dibromo-3-Chloropropane	20.0	21.29		ug/L		106	50 - 150
1,2-Dibromoethane (EDB)	20.0	22.91		ug/L		115	75 - 125
1,2-Dichlorobenzene	20.0	21.81		ug/L		109	74 - 120
1,2-Dichloroethane	20.0	22.06		ug/L		110	71 - 125
1,2-Dichloropropane	20.0	23.19		ug/L		116	73 - 124
1,4-Dichlorobenzene	20.0	21.71		ug/L		109	72 - 120
2-Butanone (MEK)	40.0	47.82		ug/L		120	50 - 150
2-Hexanone	40.0	48.75		ug/L		122	60 - 140
4-Methyl-2-pentanone (MIBK)	40.0	48.31		ug/L		121	60 - 139
Acetone	40.0	45.00		ug/L		113	50 - 150
Acrylonitrile	200	226.9		ug/L		113	50 - 150
Benzene	20.0	21.92		ug/L		110	72 - 124
Bromochloromethane	20.0	20.80		ug/L		104	73 - 130

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-422561/6
Matrix: Water
Analysis Batch: 422561

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromodichloromethane	20.0	21.25		ug/L		106	74 - 122
Bromoform	20.0	21.35		ug/L		107	61 - 122
Carbon disulfide	20.0	20.28		ug/L		101	59 - 135
Carbon tetrachloride	20.0	23.80		ug/L		119	67 - 132
Chlorobenzene	20.0	22.06		ug/L		110	76 - 120
Chlorodibromomethane	20.0	22.24		ug/L		111	71 - 121
Chloroform	20.0	20.53		ug/L		103	72 - 125
cis-1,2-Dichloroethene	20.0	20.95		ug/L		105	74 - 123
cis-1,3-Dichloropropene	20.0	23.01		ug/L		115	71 - 125
Dibromomethane	20.0	21.00		ug/L		105	74 - 125
Ethylbenzene	20.0	22.08		ug/L		110	74 - 122
Iodomethane	20.0	17.93		ug/L		90	10 - 150
Methylene Chloride	20.0	20.00		ug/L		100	50 - 150
Styrene	20.0	22.33		ug/L		112	74 - 121
Tetrachloroethene	20.0	22.11		ug/L		111	71 - 130
Toluene	20.0	21.33		ug/L		107	74 - 123
trans-1,2-Dichloroethene	20.0	21.15		ug/L		106	70 - 126
trans-1,3-Dichloropropene	20.0	21.71		ug/L		109	69 - 123
trans-1,4-Dichloro-2-butene	20.0	21.25		ug/L		106	50 - 150
Trichloroethene	20.0	22.02		ug/L		110	72 - 126
Vinyl acetate	40.0	43.07		ug/L		108	50 - 150
Xylenes, Total	40.0	43.42		ug/L		109	73 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*98*		*73 - 130*
Toluene-d8 (Surr)	*101*		*80 - 120*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*

Lab Sample ID: LCS 310-422561/7
Matrix: Water
Analysis Batch: 422561

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	19.08		ug/L		95	23 - 150
Chloroethane	20.0	22.25		ug/L		111	54 - 136
Chloromethane	20.0	22.76		ug/L		114	38 - 150
Trichlorofluoromethane	20.0	23.05		ug/L		115	54 - 149
Vinyl chloride	20.0	23.24		ug/L		116	56 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*111*		*73 - 130*
Toluene-d8 (Surr)	*97*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*

Method: 8081B - Organochlorine Pesticides (GC)

Lab Sample ID: MB 310-422219/1-A
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 422812
Prep Batch: 422219

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
alpha-BHC	<0.0290		0.0640	0.0290	ug/L		05/21/24 08:00	05/28/24 13:10	1
Endrin aldehyde	<0.0290		0.0640	0.0290	ug/L		05/21/24 08:00	05/28/24 13:10	1
Endosulfan sulfate	<0.0300		0.0640	0.0300	ug/L		05/21/24 08:00	05/28/24 13:10	1
beta-BHC	<0.0370		0.0640	0.0370	ug/L		05/21/24 08:00	05/28/24 13:10	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*73*		*10 - 136*	*05/21/24 08:00*	*05/28/24 13:10*	*1*
Tetrachloro-m-xylene (Surr)	*68*		*10 - 130*	*05/21/24 08:00*	*05/28/24 13:10*	*1*

Lab Sample ID: LCS 310-422219/4-A
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 422812
Prep Batch: 422219

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
alpha-BHC			1.00	0.6847		ug/L		68	36 - 127		
Endrin aldehyde			1.00	0.7810		ug/L		78	32 - 137		
Endosulfan sulfate			1.00	0.7480		ug/L		75	36 - 147		
beta-BHC			1.00	0.6860		ug/L		69	37 - 136		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl (Surr)	*75*		*10 - 136*
Tetrachloro-m-xylene (Surr)	*77*		*10 - 130*

Lab Sample ID: LCSD 310-422219/5-A
Client Sample ID: Lab Control Sample Dup
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 422812
Prep Batch: 422219

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
alpha-BHC			1.00	0.5967		ug/L		60	36 - 127	14	35
Endrin aldehyde			1.00	0.6930		ug/L		69	32 - 137	12	35
Endosulfan sulfate			1.00	0.6602		ug/L		66	36 - 147	12	35
beta-BHC			1.00	0.6092		ug/L		61	37 - 136	14	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
DCB Decachlorobiphenyl (Surr)	*52*		*10 - 136*
Tetrachloro-m-xylene (Surr)	*66*		*10 - 130*

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-421948/1-A
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 422792
Prep Batch: 421948

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		05/17/24 09:30	05/24/24 19:45	1
Arsenic	<0.530		2.00	0.530	ug/L		05/17/24 09:30	05/24/24 19:45	1
Barium	<0.660		2.00	0.660	ug/L		05/17/24 09:30	05/24/24 19:45	1
Beryllium	<0.330		1.00	0.330	ug/L		05/17/24 09:30	05/24/24 19:45	1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 310-421948/1-A
Matrix: Water
Analysis Batch: 422792

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 421948

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	<0.100		0.200	0.100	ug/L		05/17/24 09:30	05/24/24 19:45	1
Chromium	<1.20		5.00	1.20	ug/L		05/17/24 09:30	05/24/24 19:45	1
Cobalt	<0.170		0.500	0.170	ug/L		05/17/24 09:30	05/24/24 19:45	1
Copper	<1.80		5.00	1.80	ug/L		05/17/24 09:30	05/24/24 19:45	1
Lead	<0.260		0.500	0.260	ug/L		05/17/24 09:30	05/24/24 19:45	1
Selenium	<1.40		5.00	1.40	ug/L		05/17/24 09:30	05/24/24 19:45	1
Thallium	<0.570		1.00	0.570	ug/L		05/17/24 09:30	05/24/24 19:45	1
Vanadium	<1.10		5.00	1.10	ug/L		05/17/24 09:30	05/24/24 19:45	1
Zinc	<9.70		20.0	9.70	ug/L		05/17/24 09:30	05/24/24 19:45	1

Lab Sample ID: MB 310-421948/1-A
Matrix: Water
Analysis Batch: 423059

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 421948

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nickel	<2.10		5.00	2.10	ug/L		05/17/24 09:30	05/29/24 20:55	1
Silver	<0.500		1.00	0.500	ug/L		05/17/24 09:30	05/29/24 20:55	1

Lab Sample ID: LCS 310-421948/2-A
Matrix: Water
Analysis Batch: 422792

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 421948

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	200	201.3		ug/L		101	80 - 120
Arsenic	200	207.5		ug/L		104	80 - 120
Barium	100	106.0		ug/L		106	80 - 120
Beryllium	100	95.44		ug/L		95	80 - 120
Cadmium	100	100.5		ug/L		100	80 - 120
Chromium	100	96.12		ug/L		96	80 - 120
Cobalt	100	99.24		ug/L		99	80 - 120
Copper	200	199.7		ug/L		100	80 - 120
Lead	200	210.3		ug/L		105	80 - 120
Nickel	200	212.0		ug/L		106	80 - 120
Selenium	400	399.5		ug/L		100	80 - 120
Thallium	100	110.6		ug/L		111	80 - 120
Vanadium	100	102.4		ug/L		102	80 - 120
Zinc	200	183.2		ug/L		92	80 - 120

Lab Sample ID: LCS 310-421948/2-A
Matrix: Water
Analysis Batch: 423059

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 421948

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Silver	100	113.5		ug/L		113	80 - 120

Method: 9034 - Sulfide, Acid soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 240-613583/1-A
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 613623
Prep Batch: 613583

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.41		3.00	1.41	mg/L		05/20/24 07:41	05/20/24 09:22	1

Lab Sample ID: LCS 240-613583/2-A
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 613623
Prep Batch: 613583

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfide	9.07	8.000		mg/L		88	70 - 120

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: MB 310-421986/1
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 421986

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<3.70		5.00	3.70	mg/L			05/17/24 08:46	1

Lab Sample ID: LCS 310-421986/2
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 421986

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	89.00		mg/L		89	81 - 116

Lab Sample ID: MB 310-422005/1
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 422005

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<3.70		5.00	3.70	mg/L			05/17/24 09:34	1

Lab Sample ID: LCS 310-422005/2
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 422005

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	94.00		mg/L		94	81 - 116

GC/MS VOA

Analysis Batch: 422205

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-281290-1	MW-603B	Total/NA	Groundwater	8260D	
310-281290-2	GUW2-1	Total/NA	Groundwater	8260D	
310-281290-3	GUW2-1-FD	Total/NA	Groundwater	8260D	
310-281290-4	OW-114B	Total/NA	Groundwater	8260D	
310-281290-5	OW-216BR	Total/NA	Groundwater	8260D	
310-281290-6	OW-401B	Total/NA	Groundwater	8260D	
MB 310-422205/5	Method Blank	Total/NA	Water	8260D	
LCS 310-422205/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-422205/7	Lab Control Sample	Total/NA	Water	8260D	

Analysis Batch: 422207

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-281290-7	Trip Blank	Total/NA	Water	8260D	
MB 310-422207/5	Method Blank	Total/NA	Water	8260D	
LCS 310-422207/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-422207/7	Lab Control Sample	Total/NA	Water	8260D	

Analysis Batch: 422561

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-281290-3	GUW2-1-FD	Total/NA	Groundwater	8260D	
MB 310-422561/5	Method Blank	Total/NA	Water	8260D	
LCS 310-422561/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-422561/7	Lab Control Sample	Total/NA	Water	8260D	

GC Semi VOA

Prep Batch: 422219

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-281290-6	OW-401B	Total/NA	Groundwater	3510C	
MB 310-422219/1-A	Method Blank	Total/NA	Water	3510C	
LCS 310-422219/4-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 310-422219/5-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 422812

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-281290-6	OW-401B	Total/NA	Groundwater	8081B	422219
MB 310-422219/1-A	Method Blank	Total/NA	Water	8081B	422219
LCS 310-422219/4-A	Lab Control Sample	Total/NA	Water	8081B	422219
LCSD 310-422219/5-A	Lab Control Sample Dup	Total/NA	Water	8081B	422219

Metals

Prep Batch: 421948

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-281290-1	MW-603B	Total/NA	Groundwater	3005A	
310-281290-2	GUW2-1	Total/NA	Groundwater	3005A	
310-281290-3	GUW2-1-FD	Total/NA	Groundwater	3005A	
310-281290-4	OW-114B	Total/NA	Groundwater	3005A	
310-281290-5	OW-216BR	Total/NA	Groundwater	3005A	
310-281290-6	OW-401B	Total/NA	Groundwater	3005A	
MB 310-421948/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-421948/2-A	Lab Control Sample	Total/NA	Water	3005A	

Metals

Analysis Batch: 422792

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-281290-1	MW-603B	Total/NA	Groundwater	6020B	421948
310-281290-2	GUW2-1	Total/NA	Groundwater	6020B	421948
310-281290-3	GUW2-1-FD	Total/NA	Groundwater	6020B	421948
310-281290-4	OW-114B	Total/NA	Groundwater	6020B	421948
310-281290-5	OW-216BR	Total/NA	Groundwater	6020B	421948
310-281290-6	OW-401B	Total/NA	Groundwater	6020B	421948
MB 310-421948/1-A	Method Blank	Total/NA	Water	6020B	421948
LCS 310-421948/2-A	Lab Control Sample	Total/NA	Water	6020B	421948

Analysis Batch: 423059

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-281290-1	MW-603B	Total/NA	Groundwater	6020B	421948
310-281290-2	GUW2-1	Total/NA	Groundwater	6020B	421948
310-281290-3	GUW2-1-FD	Total/NA	Groundwater	6020B	421948
310-281290-4	OW-114B	Total/NA	Groundwater	6020B	421948
310-281290-5	OW-216BR	Total/NA	Groundwater	6020B	421948
310-281290-6	OW-401B	Total/NA	Groundwater	6020B	421948
MB 310-421948/1-A	Method Blank	Total/NA	Water	6020B	421948
LCS 310-421948/2-A	Lab Control Sample	Total/NA	Water	6020B	421948

General Chemistry

Analysis Batch: 421986

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-281290-1	MW-603B	Total/NA	Groundwater	I-3765-85	
310-281290-3	GUW2-1-FD	Total/NA	Groundwater	I-3765-85	
310-281290-4	OW-114B	Total/NA	Groundwater	I-3765-85	
310-281290-5	OW-216BR	Total/NA	Groundwater	I-3765-85	
310-281290-6	OW-401B	Total/NA	Groundwater	I-3765-85	
MB 310-421986/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-421986/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Analysis Batch: 422005

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-281290-2	GUW2-1	Total/NA	Groundwater	I-3765-85	
MB 310-422005/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-422005/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Prep Batch: 613583

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-281290-6	OW-401B	Total/NA	Groundwater	9030B	
MB 240-613583/1-A	Method Blank	Total/NA	Water	9030B	
LCS 240-613583/2-A	Lab Control Sample	Total/NA	Water	9030B	

Analysis Batch: 613623

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-281290-6	OW-401B	Total/NA	Groundwater	9034	613583
MB 240-613583/1-A	Method Blank	Total/NA	Water	9034	613583
LCS 240-613583/2-A	Lab Control Sample	Total/NA	Water	9034	613583

QC Association Summary

Client: AECOM
Job ID: 310-281290-1
Project/Site: Black Hawk County Landfill (IDNR)

Field Service / Mobile Lab

Analysis Batch: 422183

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-281290-1	MW-603B	Total/NA	Groundwater	Field Sampling	
310-281290-2	GUW2-1	Total/NA	Groundwater	Field Sampling	
310-281290-4	OW-114B	Total/NA	Groundwater	Field Sampling	
310-281290-5	OW-216BR	Total/NA	Groundwater	Field Sampling	
310-281290-6	OW-401B	Total/NA	Groundwater	Field Sampling	

Lab Chronicle

Client: AECOM
Job ID: 310-281290-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: MW-603B
Lab Sample ID: 310-281290-1
Date Collected: 05/14/24 14:00
Matrix: Groundwater
Date Received: 05/15/24 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	422205	D2YP	EET CF	05/21/24 06:25
Total/NA	Prep	3005A			421948	KM3E	EET CF	05/17/24 09:30
Total/NA	Analysis	6020B		1	422792	NFT2	EET CF	05/24/24 20:43
Total/NA	Prep	3005A			421948	KM3E	EET CF	05/17/24 09:30
Total/NA	Analysis	6020B		1	423059	NFT2	EET CF	05/29/24 21:19
Total/NA	Analysis	I-3765-85		1	421986	HE7K	EET CF	05/17/24 08:46
Total/NA	Analysis	Field Sampling		1	422183	BJ0R	EET CF	05/14/24 14:00

Client Sample ID: GUW2-1
Lab Sample ID: 310-281290-2
Date Collected: 05/14/24 13:30
Matrix: Groundwater
Date Received: 05/15/24 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	422205	D2YP	EET CF	05/21/24 06:48
Total/NA	Prep	3005A			421948	KM3E	EET CF	05/17/24 09:30
Total/NA	Analysis	6020B		1	422792	NFT2	EET CF	05/24/24 20:45
Total/NA	Prep	3005A			421948	KM3E	EET CF	05/17/24 09:30
Total/NA	Analysis	6020B		1	423059	NFT2	EET CF	05/29/24 21:22
Total/NA	Analysis	I-3765-85		1	422005	HE7K	EET CF	05/17/24 09:34
Total/NA	Analysis	Field Sampling		1	422183	BJ0R	EET CF	05/14/24 13:30

Client Sample ID: GUW2-1-FD
Lab Sample ID: 310-281290-3
Date Collected: 05/14/24 13:30
Matrix: Groundwater
Date Received: 05/15/24 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	422205	D2YP	EET CF	05/21/24 07:11
Total/NA	Analysis	8260D		1	422561	FE5V	EET CF	05/23/24 23:44
Total/NA	Prep	3005A			421948	KM3E	EET CF	05/17/24 09:30
Total/NA	Analysis	6020B		1	422792	NFT2	EET CF	05/24/24 20:47
Total/NA	Prep	3005A			421948	KM3E	EET CF	05/17/24 09:30
Total/NA	Analysis	6020B		1	423059	NFT2	EET CF	05/29/24 21:24
Total/NA	Analysis	I-3765-85		1	421986	HE7K	EET CF	05/17/24 08:46

Client Sample ID: OW-114B
Lab Sample ID: 310-281290-4
Date Collected: 05/14/24 12:00
Matrix: Groundwater
Date Received: 05/15/24 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	422205	D2YP	EET CF	05/21/24 07:34
Total/NA	Prep	3005A			421948	KM3E	EET CF	05/17/24 09:30
Total/NA	Analysis	6020B		1	422792	NFT2	EET CF	05/24/24 20:50
Total/NA	Prep	3005A			421948	KM3E	EET CF	05/17/24 09:30
Total/NA	Analysis	6020B		1	423059	NFT2	EET CF	05/29/24 21:26

Lab Chronicle

Client: AECOM
Job ID: 310-281290-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-114B
Lab Sample ID: 310-281290-4
Date Collected: 05/14/24 12:00
Matrix: Groundwater
Date Received: 05/15/24 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	I-3765-85		1	421986	HE7K	EET CF	05/17/24 08:46
Total/NA	Analysis	Field Sampling		1	422183	BJ0R	EET CF	05/14/24 12:00

Client Sample ID: OW-216BR
Lab Sample ID: 310-281290-5
Date Collected: 05/14/24 13:00
Matrix: Groundwater
Date Received: 05/15/24 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	422205	D2YP	EET CF	05/21/24 07:57
Total/NA	Prep	3005A			421948	KM3E	EET CF	05/17/24 09:30
Total/NA	Analysis	6020B		1	422792	NFT2	EET CF	05/24/24 20:52
Total/NA	Prep	3005A			421948	KM3E	EET CF	05/17/24 09:30
Total/NA	Analysis	6020B		1	423059	NFT2	EET CF	05/29/24 21:37
Total/NA	Analysis	I-3765-85		1	421986	HE7K	EET CF	05/17/24 08:46
Total/NA	Analysis	Field Sampling		1	422183	BJ0R	EET CF	05/14/24 13:00

Client Sample ID: OW-401B
Lab Sample ID: 310-281290-6
Date Collected: 05/14/24 10:30
Matrix: Groundwater
Date Received: 05/15/24 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	422205	D2YP	EET CF	05/21/24 08:19
Total/NA	Prep	3510C			422219	C3AA	EET CF	05/21/24 08:00
Total/NA	Analysis	8081B		1	422812	BW2O	EET CF	05/28/24 15:42
Total/NA	Prep	3005A			421948	KM3E	EET CF	05/17/24 09:30
Total/NA	Analysis	6020B		1	422792	NFT2	EET CF	05/24/24 20:54
Total/NA	Prep	3005A			421948	KM3E	EET CF	05/17/24 09:30
Total/NA	Analysis	6020B		1	423059	NFT2	EET CF	05/29/24 21:39
Total/NA	Prep	9030B			613583	BLW	EET CLE	05/20/24 07:41
Total/NA	Analysis	9034		1	613623	BLW	EET CLE	05/20/24 09:22
Total/NA	Analysis	I-3765-85		1	421986	HE7K	EET CF	05/17/24 08:46
Total/NA	Analysis	Field Sampling		1	422183	BJ0R	EET CF	05/14/24 10:30

Client Sample ID: Trip Blank
Lab Sample ID: 310-281290-7
Date Collected: 05/14/24 00:00
Matrix: Water
Date Received: 05/15/24 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	422207	D2YP	EET CF	05/21/24 12:29

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Accreditation/Certification Summary

Client: AECOM
Job ID: 310-281290-1
Project/Site: Black Hawk County Landfill (IDNR)

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8260D		Groundwater	m,p-Xylene
8260D		Groundwater	o-Xylene
8260D		Water	m,p-Xylene
8260D		Water	o-Xylene
Field Sampling		Groundwater	Field Turbidity

Laboratory: Eurofins Cleveland

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-28-25
Georgia	State	4062	02-27-25
Illinois	NELAP	200004	07-31-24
Iowa	State	421	06-01-25
Kentucky (UST)	State	112225	02-27-25
Kentucky (WW)	State	KY98016	12-30-24
Minnesota	NELAP	039-999-348	12-31-24
New Jersey	NELAP	OH001	06-30-24
New York	NELAP	10975	04-02-25
Ohio VAP	State	ORELAP 4062	02-27-25
Oregon	NELAP	4062	02-27-25
Pennsylvania	NELAP	68-00340	08-31-24
Texas	NELAP	T104704517-22-19	08-31-24
USDA	US Federal Programs	P330-18-00281	01-05-27
Virginia	NELAP	460175	09-14-24
West Virginia DEP	State	210	12-31-24

Method Summary

Client: AECOM
Job ID: 310-281290-1
Project/Site: Black Hawk County Landfill (IDNR)

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CF
8081B	Organochlorine Pesticides (GC)	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
9034	Sulfide, Acid soluble and Insoluble (Titrimetric)	SW846	EET CLE
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
Field Sampling	Field Sampling	EPA	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET CF
5030B	Purge and Trap	SW846	EET CF
9030B	Sulfide, Distillation (Acid Soluble and Insoluble)	SW846	EET CLE

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

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310-281290 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: AECOM			
City/State: CITY Detroit/MI	STATE MI	Project: BHCo FDNR	
Receipt Information			
Date/Time Received:	DATE 5/15/24	TIME 0730	Received By:

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☐ Lab Courier ☐ Lab Field Services ☑ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers			
Sample(s) received in Cooler?	☑ Yes	☐ No	*If yes:* Cooler ID:
Multiple Coolers?	☐ Yes	☑ No	*If yes:* Cooler # _____ of _____
Cooler Custody Seals Present?	☐ Yes	☑ No	*If yes:* Cooler custody seals intact? ☐ Yes ☐ No
Sample Custody Seals Present?	☐ Yes	☑ No	*If yes:* Sample custody seals intact? ☐ Yes ☐ No
Trip Blank Present?	☑ Yes	☐ No	*If yes:* Which VOA samples are in cooler? ↓

Temperature Record					
Coolant:	☑ Wet ice	☐ Blue ice	☐ Dry ice	☐ Other:_____	☐ NONE
Thermometer ID: R			Correction Factor (°C): 0		

• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 7.4	Corrected Temp (°C): 7.4

• Sample Container Temperature

	CONTAINER 1	CONTAINER 2
Container(s) used:	1 5 NS	1 5 NS
Uncorrected Temp (°C):	5.9	5.1
Corrected Temp (°C):	5.9	5.1

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE: If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

Eurofins Cedar Falls
3019 Venture Way

Cedar Falls, IA 50613
phone 319 277.2401 fax 319.277 2425

Chain of Custody Record

eurofins Environment Testing America

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other IDNR

Eurofins Environment Testing America

Client Contact	**Project Manager: Chris Oelkers**		COC No
AECOM	Email Christopher Oelkers@aecom com	**Site Contact:**	**Date:** 5-15-24	1 of 3 COCs
501 Sycamore Street, Suite 222	**Tel/Fax:319-296-6878**	**Lab Contact:**	**Carrier:**	TALS Project #
Waterloo, IA 50703	**Analysis Turnaround Time** ☑ CALENDAR DAYS ☐ WORKING DAYS			Sampler
(319) 232-6531 Phone	TAT if different from Below ☑ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day			**For Lab Use Only:** Walk-in Client: Lab Sampling
(xxx) xxx-xxxx FAX				
Project Name Black Hawk Co IDNR				Job / SDG No
Site Black Hawk County Landfill				
P O #				

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	Appendix I, TSS	Appendix II, TSS	2,4-D	4,4'-DDD	beta-BHC	delta BHC	Endosulfan I	Endosulfan sulfate	Endrin aldehyde	Silvex	Sulfide	Sample Specific Notes
MW-603B	5-14-24	1400	G	GW	5	N		X											Turbidity - 1.86 NTU
MW-604B			G	GW		N		X											
MW-709B			G	GW		N		X											
MW-710B			G	GW		N		X											
MW-711B			G	GW		N		X											
MW-712B			G	GW		N		X											
GUE-1			G	GW		N		X											
GUE-2			G	GW		N		X											
GUW1-1			G	GW		N		X											
GUW2-1	5-14-24	1330	G	GW	5	N		X											Turbidity - 9.74 NTU
Equipment Blank-2			G	GW		N		X											
GUW2-1-FD	5-14-24	1330	G	GW	5	N		X											

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No		Cooler Temp (°C): Obs'd._____ Corr'd._____		Therm ID No._____
Relinquished by: Ben Porter	Company: Aecom	Date/Time: 5-15-24	Received by:	Company:	Date/Time: 5/15/24 0930
Relinquished by:	Company:	Date/Time	Received by:	Company:	Date/Time
Relinquished by:	Company:	Date/Time	Received in Laboratory by:	Company:	Date/Time

5/30/2024

Eurofins Cedar Falls
3019 Venture Way

Cedar Falls, IA 50613
phone 319.277.2401 fax 319.277 2425

Chain of Custody Record

eurofins Environment Testing America

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other IDNR

Eurofins Environment Testing America

Client Contact	**Project Manager: Chris Oelkers**		COC No
AECOM	Email Christopher Oelkers@aecom com	**Site Contact:**	**Date:** 5-15-24 — 2 of 3 COCs
501 Sycamore Street, Suite 222	**Tel/Fax:319-296-6878**	**Lab Contact:**	**Carrier:** — TALS Project #
Waterloo, IA 50703	**Analysis Turnaround Time** ☑ CALENDAR DAYS ☐ WORKING DAYS		Sampler
(319) 232-6531 Phone	TAT if different from Below ☑ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day		**For Lab Use Only:** Walk-in Client / Lab Sampling
(xxx) xxx-xxxx FAX			
Project Name Black Hawk Co IDNR			Job / SDG No
Site Black Hawk County Landfill			
P O #			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Appendix I, TSS	Appendix II, TSS	2,4-D	4,4'-DDD	beta-BHC	delta BHC	Endosulfan I	Endosulfan sulfate	Endrin aldehyde	Silvex	Sulfide					Sample Specific Notes
OW-101B			G	GW		N		X															
OW-105B			G	GW		N		X															
OW-113B			G	GW		N		X										X					
OW-114B	5-14-24	1200	G	GW	5	N		X															Turbidity - 19.1 NTU
OW-205B			G	GW		N		X			X			X				X					
OW-209B			G	GW		N		X															
OW-212B			G	GW		N		X															
OW-213BR			G	GW		N		X															
OW-216BR	5-14-24	1300	G	GW	5	N		X															Turbidity - 3.71 NTU
OW-219B			G	GW		N		X															
OW-219B-FD			G	GW		N		X															

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No		Cooler Temp (°C) Obs'd. _____ Corr'd _____		Therm ID No. _____
Relinquished by: Ben Porter	Company: Aecom	Date/Time: 5-15-24	Received by:	Company:	Date/Time: 5/24 0930
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time
Relinquished by:	Company:	Date/Time	Received in Laboratory by:	Company:	Date/Time

Page 49 of 51

5/30/2024

Eurofins Cedar Falls
3019 Venture Way

Cedar Falls, IA 50613
phone 319 277.2401 fax 319.277 2425

Chain of Custody Record

eurofins Environment Testing America

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other IDNR

Eurofins Environment Testing America

Client Contact	**Project Manager: Chris Oelkers**	COC No
AECOM	Email Christopher Oelkers@aecom com	3 of 3 COCs
501 Sycamore Street, Suite 222	**Tel/Fax:319-296-6878**	TALS Project #
Waterloo, IA 50703	**Analysis Turnaround Time**	Sampler
(319) 232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS	**For Lab Use Only:**
(xxx) xxx-xxxx FAX	TAT if different from Below ____	Walk-in Client:
Project Name Black Hawk Co IDNR	☑ 2 weeks	Lab Sampling
Site Black Hawk County Landfill	☐ 1 week	Job / SDG No
P O #	☐ 2 days	
	☐ 1 day	
Site Contact:	**Date:** 5-15-24	
Lab Contact:	**Carrier:**	

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Appendix I, TSS	Appendix II, TSS	2,4-D	4,4'-DDD	beta-BHC	delta BHC	Endosulfan I	Endosulfan sulfate	Endrin aldehyde	Silvex	Sulfide	Sample Specific Notes
OW-401B	5-14-24	1030	G	GW	10	N		X		X		X	X		X	X	X	X	Turbidity – 3.37 NTU
OW-402B			G	GW		N		X											
MW-409B			G	GW		N		X											
OW-410B			G	GW		N		X											
OW-411B			G	GW		N		X											
OW-412B			G	GW		N		X											
OW-413B			G	GW		N		X											
OW-414B			G	GW		N		X											
MW-501B			G	GW		N		X											
MW-602B			G	GW		N		X											
MW-602B-FD			G	GW		N		X											
Trip Blank	5-14-24	0600	G	W	2	N		X											

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for ____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No | Cooler Temp (°C) Obs'd. ____ Corr'd ____ | Therm ID No. ____

Relinquished by: Ben Porter	Company: Aecom	Date/Time: 5-15-24	Received by:	Company:	Date/Time: 5/15/24 0910
Relinquished by:	Company:	Date/Time	Received by:	Company:	Date/Time
Relinquished by:	Company:	Date/Time	Received in Laboratory by:	Company:	Date/Time

5/30/2024

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone: 319-277-2401 Fax: 319-277-2425

0.2/1.7

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Bindert, Zach T	Carrier Tracking No(s):	COC No: 310-72467.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Zach.Bindert@et.eurofinsus.com	State of Origin: Iowa	Page: Page 1 of 1
Company: Eurofins Environment Testing North Centr		Accreditations Required (See note): State - Iowa; State Program - Iowa		Job #: 310-281290-1
Address: 180 S. Van Buren Avenue, ,	Due Date Requested: 5/29/2024			
City: Barberton	TAT Requested (days):			
State, Zip: OH, 44203				
Phone: 330-497-9396(Tel) 330-497-0772(Fax)	PO #:			
Email:	WO #:			
Project Name: Black Hawk County Landfill (IDNR)	Project #: 31017149			
Site: 310 - Black Hawk County (IDNR)	SSOW#:			

Analysis Requested

Preservation Codes: -

Other:

G005

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9034_Calc/9030B Sulfide	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
OW-401B (310-281290-6)	5/14/24	10:30 Central		Water			X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing North Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing North Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing North Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing North Central, LLC.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	5/15/24 1610		JESSICA RIGDON	5-16-24 1030	ETNC
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Eurofins – Cleveland Sample Receipt Form/Narrative Login # :
Barberton Facility

Client Eurofins-CF Site Name
Cooler Received on 5-16-24 Opened on 5-16-24
FedEx. 1st Grd (Exp) UPS FAS Waypoint Client Drop Off Eurofins Courier Other
Cooler unpacked by: ONQ
Receipt After-hours Drop-off Date/Time Storage Location
Eurofins Cooler # EC Foam Box Client Cooler Box Other
Packing material used. Bubble Wrap Foam Plastic Bag (None) Other
COOLANT: (Wet Ice) Blue Ice Dry Ice Water None

1 Cooler temperature upon receipt ☐ See Multiple Cooler Form
IR GUN # 19 (CF +1.5 °C) Observed Cooler Temp 0.2 °C Corrected Cooler Temp. 1.7 °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1	(Yes)	No
-Were the seals on the outside of the cooler(s) signed & dated?	(Yes)	No NA
-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)?	Yes	(No)
-Were tamper/custody seals intact and uncompromised?	(Yes)	No NA
3 Shippers' packing slip attached to the cooler(s)?	(Yes)	No
4. Did custody papers accompany the sample(s)?	(Yes)	No
5 Were the custody papers relinquished & signed in the appropriate place?	(Yes)	No
6 Was/were the person(s) who collected the samples clearly identified on the COC?	Yes	(No)
7 Did all bottles arrive in good condition (Unbroken)?	(Yes)	No
8 Could all bottle labels (ID/Date/Time) be reconciled with the COC?	(Yes)	No
9 For each sample, does the COC specify preservatives (Y/N)? # of containers (Y/N), and sample type of grab/comp(Y/N)?	(Y)	(Y) (N)
10 Were correct bottle(s) used for the test(s) indicated?	(Yes)	No
11 Sufficient quantity received to perform indicated analyses?	(Yes)	No
12. Are these work share samples and all listed on the COC?	(Yes)	No
If yes, Questions 13-17 have been checked at the originating laboratory		
13 Were all *preserved sample(s) at the correct pH upon receipt?*	Yes	No NA pH Strip Lot# HC439975
14 Were VOAs on the COC?	Yes	No
15 Were air bubbles >6 mm in any VOA vials? ● ← Larger than this	Yes	No NA
16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot #	Yes	No
17 Was a LL Hg or Me Hg trip blank present?	Yes	No

Tests that are not checked for pH by Receiving
VOAs
Oil and Grease
TOC

Contacted PM Date by via Verbal Voice Mail Other

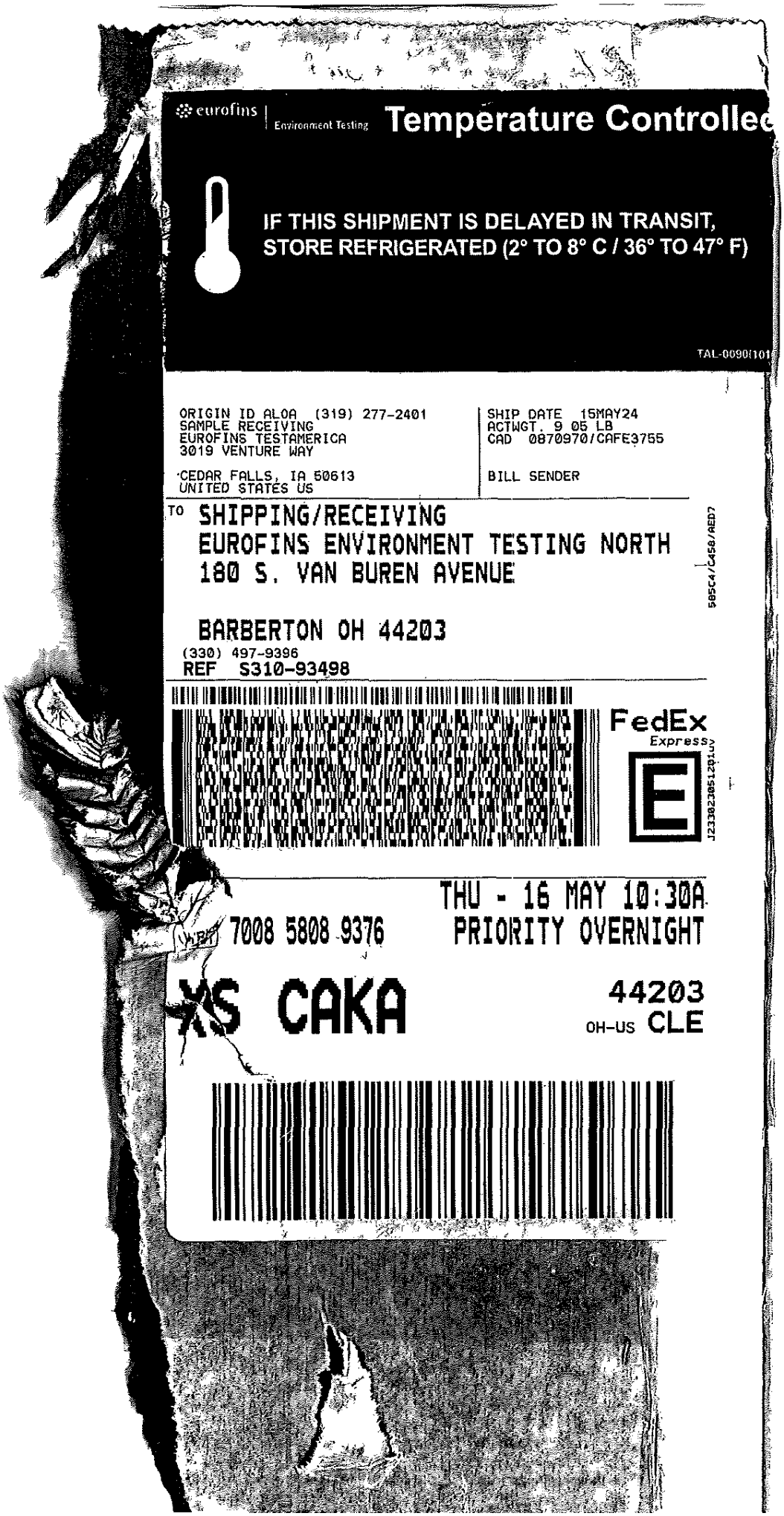
Concerning

18. *CHAIN OF CUSTODY & SAMPLE DISCREPANCIES* ☐ *additional next page* | *Samples processed by:*

19 SAMPLE CONDITION
Sample(s) were received after the recommended holding time had expired.
Sample(s) were received in a broken container
Sample(s) were received with bubble >6 mm in diameter (Notify PM)

20 SAMPLE PRESERVATION
Sample(s) were further preserved in the laboratory
Time preserved Preservative(s) added/Lot number(s)

VOA Sample Preservation - Date/Time VOAs Frozen



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Temperature Controlled

IF THIS SHIPMENT IS DELAYED IN TRANSIT,
STORE REFRIGERATED (2° TO 8° C / 36° TO 47° F)

TAL-0090(101

ORIGIN ID ALOA (319) 277-2401
SAMPLE RECEIVING
EUROFINS TESTAMERICA
3019 VENTURE WAY

CEDAR FALLS, IA 50613
UNITED STATES US

SHIP DATE 15MAY24
ACTWGT 9 05 LB
CAD 0870970/CAFE3755

BILL SENDER

TO SHIPPING/RECEIVING
EUROFINS ENVIRONMENT TESTING NORTH
180 S. VAN BUREN AVENUE

BARBERTON OH 44203
(330) 497-9396
REF S310-93498

585C4/C458/AED7

FedEx Express

J233023051201uv

THU - 16 MAY 10:30A
PRIORITY OVERNIGHT

7008 5808 9376

XS CAKA

44203
OH-US CLE

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone: 319-277-2401 Fax: 319-277-2425

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Bindert, Zach T	Carrier Tracking No(s):	COC No: 310-72464.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Zach.Bindert@et.eurofinsus.com	State of Origin: Iowa	Page: Page 1 of 1
Company: Eurofins Lancaster Laboratories Environm		Accreditations Required (See note): State - Iowa; State Program - Iowa		Job #: 310-281290-1
Address: 2425 New Holland Pike, ,	Due Date Requested: 5/29/2024			
City: Lancaster	TAT Requested (days):			
State, Zip: PA, 17601				
Phone: 717-656-2300(Tel)	PO #:			
Email:	WO #:			
Project Name: Black Hawk County Landfill (IDNR)	Project #: 31017149			
Site: 310 - Black Hawk County (IDNR)	SSOW#:			

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8151A/8151A_AP (MOD) 2,4-D and Silvex	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
OW-401B (310-281290-6)	5/14/24	10:30 Central		Water			X	2	

Analysis Requested

Preservation Codes:
-

Other:

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing North Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing North Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing North Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing North Central, LLC.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
		5/15/24 1550				
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 5/16/24 09:55	Company ECLGT

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: R:6.4 C:6.1

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-281290-1

Login Number: 281290

List Number: 1

Creator: Bennett, Samantha

List Source: Eurofins Cedar Falls

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

ANALYTICAL REPORT

PREPARED FOR

Attn: Chris Oelkers
AECOM
501 Sycamore Street
Suite #222
Waterloo, Iowa 50703

Generated 5/31/2024 2:09:20 PM

JOB DESCRIPTION

Black Hawk County Landfill (IDNR)
Spring 2024

JOB NUMBER

310-281866-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

myEOL

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



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5/31/2024 2:09:20 PM

Authorized for release by
Zach Bindert, Client Service Manager
Zach.Bindert@et.eurofinsus.com
(319)277-2401

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Job ID: 310-281866-1 — Eurofins Cedar Falls

Job Narrative
310-281866-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 5/23/2024 8:55 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.4°C.

GC/MS VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Field Service / Mobile Lab
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Sample Summary

Client: AECOM
Job ID: 310-281866-1
Project/Site: Black Hawk County Landfill (IDNR)

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-281866-1	P-215CR	Water	05/22/24 16:00	05/23/24 08:55
310-281866-2	P-216CR	Water	05/22/24 14:00	05/23/24 08:55
310-281866-3	P-402A	Water	05/22/24 12:30	05/23/24 08:55
310-281866-4	P-402C	Water	05/22/24 11:00	05/23/24 08:55
310-281866-5	P-604C	Water	05/22/24 08:30	05/23/24 08:55
310-281866-6	P-703C	Water	05/22/24 09:45	05/23/24 08:55
310-281866-7	Trip Blank	Water	05/22/24 00:00	05/23/24 08:55

Detection Summary

Client: AECOM
Job ID: 310-281866-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: P-215CR — Lab Sample ID: 310-281866-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone (MEK)	3.28	J	10.0	2.10	ug/L	1		8260D	Total/NA
Acetone	6.75	J	10.0	3.10	ug/L	1		8260D	Total/NA
Antimony	1.70	J	2.00	1.00	ug/L	1		6020B	Total/NA
Arsenic	0.599	J	2.00	0.530	ug/L	1		6020B	Total/NA
Barium	72.3		2.00	0.660	ug/L	1		6020B	Total/NA
Cobalt	0.484	J	0.500	0.170	ug/L	1		6020B	Total/NA
Copper	2.24	J	5.00	1.80	ug/L	1		6020B	Total/NA
Total Suspended Solids	15.5		1.88	1.39	mg/L	1		I-3765-85	Total/NA
Field Turbidity	13.62				NTU	1		Field Sampling	Total/NA

Client Sample ID: P-216CR — Lab Sample ID: 310-281866-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Antimony	1.12	J	2.00	1.00	ug/L	1		6020B	Total/NA
Barium	26.8		2.00	0.660	ug/L	1		6020B	Total/NA
Cobalt	0.403	J	0.500	0.170	ug/L	1		6020B	Total/NA
Copper	2.97	J	5.00	1.80	ug/L	1		6020B	Total/NA
Nickel	2.42	J	5.00	2.10	ug/L	1		6020B	Total/NA
Total Suspended Solids	5.00		1.88	1.39	mg/L	1		I-3765-85	Total/NA
Field Turbidity	12.82				NTU	1		Field Sampling	Total/NA

Client Sample ID: P-402A — Lab Sample ID: 310-281866-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Antimony	2.51		2.00	1.00	ug/L	1		6020B	Total/NA
Barium	4.08		2.00	0.660	ug/L	1		6020B	Total/NA
Chromium	4.42	J	5.00	1.20	ug/L	1		6020B	Total/NA
Cobalt	0.172	J	0.500	0.170	ug/L	1		6020B	Total/NA
Nickel	7.73		5.00	2.10	ug/L	1		6020B	Total/NA
Vanadium	1.36	J	5.00	1.10	ug/L	1		6020B	Total/NA
Zinc	27.6		20.0	9.70	ug/L	1		6020B	Total/NA
Total Suspended Solids	2.63		1.88	1.39	mg/L	1		I-3765-85	Total/NA
Field Turbidity	1.02				NTU	1		Field Sampling	Total/NA

Client Sample ID: P-402C — Lab Sample ID: 310-281866-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	70.3		2.00	0.660	ug/L	1		6020B	Total/NA
Cobalt	0.380	J	0.500	0.170	ug/L	1		6020B	Total/NA
Copper	2.33	J	5.00	1.80	ug/L	1		6020B	Total/NA
Nickel	2.31	J	5.00	2.10	ug/L	1		6020B	Total/NA
Field Turbidity	0.70				NTU	1		Field Sampling	Total/NA

Client Sample ID: P-604C — Lab Sample ID: 310-281866-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,2-Dichloroethane	0.417	J	1.00	0.390	ug/L	1		8260D	Total/NA
2-Butanone (MEK)	2.68	J	10.0	2.10	ug/L	1		8260D	Total/NA
Acetone	716		10.0	3.10	ug/L	1		8260D	Total/NA
Benzene	1.40		0.500	0.220	ug/L	1		8260D	Total/NA
Arsenic	1.55	J	2.00	0.530	ug/L	1		6020B	Total/NA
Barium	23.0		2.00	0.660	ug/L	1		6020B	Total/NA
Cadmium	0.229		0.200	0.100	ug/L	1		6020B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: P-604C (Continued)
Lab Sample ID: 310-281866-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chromium	4.99	J	5.00	1.20	ug/L	1		6020B	Total/NA
Cobalt	29.4		0.500	0.170	ug/L	1		6020B	Total/NA
Copper	5.82		5.00	1.80	ug/L	1		6020B	Total/NA
Lead	0.574		0.500	0.260	ug/L	1		6020B	Total/NA
Nickel	81.5		5.00	2.10	ug/L	1		6020B	Total/NA
Zinc	10.5	J	20.0	9.70	ug/L	1		6020B	Total/NA
Total Suspended Solids	80.0		15.0	11.1	mg/L	1		I-3765-85	Total/NA
Field Turbidity	59.32				NTU	1		Field Sampling	Total/NA

Client Sample ID: P-703C
Lab Sample ID: 310-281866-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	1.24	J	2.00	0.530	ug/L	1		6020B	Total/NA
Barium	84.8		2.00	0.660	ug/L	1		6020B	Total/NA
Cobalt	0.531		0.500	0.170	ug/L	1		6020B	Total/NA
Total Suspended Solids	2.00		1.88	1.39	mg/L	1		I-3765-85	Total/NA
Field Turbidity	1.24				NTU	1		Field Sampling	Total/NA

Client Sample ID: Trip Blank
Lab Sample ID: 310-281866-7

No Detections.

This Detection Summary does not include radiochemical test results.

Client: AECOM
Job ID: 310-281866-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: P-215CR
Lab Sample ID: 310-281866-1
Date Collected: 05/22/24 16:00
Matrix: Water
Date Received: 05/23/24 08:55

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/25/24 07:59	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/25/24 07:59	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/25/24 07:59	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/25/24 07:59	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/25/24 07:59	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/25/24 07:59	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/25/24 07:59	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/25/24 07:59	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/25/24 07:59	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/25/24 07:59	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/25/24 07:59	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/25/24 07:59	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/25/24 07:59	1
2-Butanone (MEK)	**3.28**	**J**	10.0	2.10	ug/L			05/25/24 07:59	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/25/24 07:59	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/25/24 07:59	1
Acetone	**6.75**	**J**	10.0	3.10	ug/L			05/25/24 07:59	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/25/24 07:59	1
Benzene	<0.220		0.500	0.220	ug/L			05/25/24 07:59	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/25/24 07:59	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/25/24 07:59	1
Bromoform	<0.780		5.00	0.780	ug/L			05/25/24 07:59	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/25/24 07:59	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/25/24 07:59	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/25/24 07:59	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/25/24 07:59	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/25/24 07:59	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/25/24 07:59	1
Chloroform	<1.30		3.00	1.30	ug/L			05/25/24 07:59	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/25/24 07:59	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/25/24 07:59	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/25/24 07:59	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/25/24 07:59	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/25/24 07:59	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/25/24 07:59	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/25/24 07:59	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/25/24 07:59	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/25/24 07:59	1
Styrene	<0.370		1.00	0.370	ug/L			05/25/24 07:59	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/25/24 07:59	1
Toluene	<0.430		1.00	0.430	ug/L			05/25/24 07:59	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/25/24 07:59	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/25/24 07:59	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/25/24 07:59	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/25/24 07:59	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/25/24 07:59	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/25/24 07:59	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/25/24 07:59	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/25/24 07:59	1

Client: AECOM
Job ID: 310-281866-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: P-215CR
Lab Sample ID: 310-281866-1

Date Collected: 05/22/24 16:00
Matrix: Water

Date Received: 05/23/24 08:55

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*99*		*73 - 130*		*05/25/24 07:59*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*05/25/24 07:59*	*1*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*		*05/25/24 07:59*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**1.70**	**J**	2.00	1.00	ug/L		05/24/24 09:45	05/30/24 23:50	1
Arsenic	**0.599**	**J**	2.00	0.530	ug/L		05/24/24 09:45	05/30/24 23:50	1
Barium	**72.3**		2.00	0.660	ug/L		05/24/24 09:45	05/30/24 23:50	1
Beryllium	<0.330		1.00	0.330	ug/L		05/24/24 09:45	05/30/24 23:50	1
Cadmium	<0.100		0.200	0.100	ug/L		05/24/24 09:45	05/30/24 23:50	1
Chromium	<1.20		5.00	1.20	ug/L		05/24/24 09:45	05/30/24 23:50	1
Cobalt	**0.484**	**J**	0.500	0.170	ug/L		05/24/24 09:45	05/30/24 23:50	1
Copper	**2.24**	**J**	5.00	1.80	ug/L		05/24/24 09:45	05/30/24 23:50	1
Lead	<0.260		0.500	0.260	ug/L		05/24/24 09:45	05/30/24 23:50	1
Nickel	<2.10		5.00	2.10	ug/L		05/24/24 09:45	05/30/24 23:50	1
Selenium	<1.40		5.00	1.40	ug/L		05/24/24 09:45	05/30/24 23:50	1
Silver	<0.500		1.00	0.500	ug/L		05/24/24 09:45	05/30/24 23:50	1
Thallium	<0.570		1.00	0.570	ug/L		05/24/24 09:45	05/30/24 23:50	1
Vanadium	<1.10		5.00	1.10	ug/L		05/24/24 09:45	05/30/24 23:50	1
Zinc	<9.70		20.0	9.70	ug/L		05/24/24 09:45	05/30/24 23:50	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**15.5**		1.88	1.39	mg/L			05/23/24 12:51	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**13.62**				NTU			05/22/24 16:00	1

Client: AECOM
Job ID: 310-281866-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: P-216CR
Lab Sample ID: 310-281866-2
Date Collected: 05/22/24 14:00
Matrix: Water
Date Received: 05/23/24 08:55

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/25/24 08:20	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/25/24 08:20	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/25/24 08:20	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/25/24 08:20	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/25/24 08:20	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/25/24 08:20	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/25/24 08:20	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/25/24 08:20	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/25/24 08:20	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/25/24 08:20	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/25/24 08:20	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/25/24 08:20	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/25/24 08:20	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/25/24 08:20	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/25/24 08:20	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/25/24 08:20	1
Acetone	<3.10		10.0	3.10	ug/L			05/25/24 08:20	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/25/24 08:20	1
Benzene	<0.220		0.500	0.220	ug/L			05/25/24 08:20	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/25/24 08:20	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/25/24 08:20	1
Bromoform	<0.780		5.00	0.780	ug/L			05/25/24 08:20	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/25/24 08:20	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/25/24 08:20	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/25/24 08:20	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/25/24 08:20	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/25/24 08:20	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/25/24 08:20	1
Chloroform	<1.30		3.00	1.30	ug/L			05/25/24 08:20	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/25/24 08:20	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/25/24 08:20	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/25/24 08:20	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/25/24 08:20	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/25/24 08:20	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/25/24 08:20	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/25/24 08:20	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/25/24 08:20	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/25/24 08:20	1
Styrene	<0.370		1.00	0.370	ug/L			05/25/24 08:20	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/25/24 08:20	1
Toluene	<0.430		1.00	0.430	ug/L			05/25/24 08:20	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/25/24 08:20	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/25/24 08:20	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/25/24 08:20	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/25/24 08:20	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/25/24 08:20	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/25/24 08:20	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/25/24 08:20	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/25/24 08:20	1

Client: AECOM
Job ID: 310-281866-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: P-216CR
Lab Sample ID: 310-281866-2

Date Collected: 05/22/24 14:00
Matrix: Water

Date Received: 05/23/24 08:55

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	*101*		*73 - 130*		*05/25/24 08:20*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*05/25/24 08:20*	*1*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*		*05/25/24 08:20*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**1.12**	**J**	2.00	1.00	ug/L		05/24/24 09:45	05/30/24 23:54	1
Arsenic	<0.530		2.00	0.530	ug/L		05/24/24 09:45	05/30/24 23:54	1
Barium	**26.8**		2.00	0.660	ug/L		05/24/24 09:45	05/30/24 23:54	1
Beryllium	<0.330		1.00	0.330	ug/L		05/24/24 09:45	05/30/24 23:54	1
Cadmium	<0.100		0.200	0.100	ug/L		05/24/24 09:45	05/30/24 23:54	1
Chromium	<1.20		5.00	1.20	ug/L		05/24/24 09:45	05/30/24 23:54	1
Cobalt	**0.403**	**J**	0.500	0.170	ug/L		05/24/24 09:45	05/30/24 23:54	1
Copper	**2.97**	**J**	5.00	1.80	ug/L		05/24/24 09:45	05/30/24 23:54	1
Lead	<0.260		0.500	0.260	ug/L		05/24/24 09:45	05/30/24 23:54	1
Nickel	**2.42**	**J**	5.00	2.10	ug/L		05/24/24 09:45	05/30/24 23:54	1
Selenium	<1.40		5.00	1.40	ug/L		05/24/24 09:45	05/30/24 23:54	1
Silver	<0.500		1.00	0.500	ug/L		05/24/24 09:45	05/30/24 23:54	1
Thallium	<0.570		1.00	0.570	ug/L		05/24/24 09:45	05/30/24 23:54	1
Vanadium	<1.10		5.00	1.10	ug/L		05/24/24 09:45	05/30/24 23:54	1
Zinc	<9.70		20.0	9.70	ug/L		05/24/24 09:45	05/30/24 23:54	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**5.00**		1.88	1.39	mg/L			05/23/24 12:51	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**12.82**				NTU			05/22/24 14:00	1

Client: AECOM
Job ID: 310-281866-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: P-402A
Lab Sample ID: 310-281866-3
Date Collected: 05/22/24 12:30
Matrix: Water
Date Received: 05/23/24 08:55

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/25/24 08:42	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/25/24 08:42	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/25/24 08:42	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/25/24 08:42	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/25/24 08:42	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/25/24 08:42	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/25/24 08:42	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/25/24 08:42	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/25/24 08:42	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/25/24 08:42	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/25/24 08:42	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/25/24 08:42	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/25/24 08:42	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/25/24 08:42	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/25/24 08:42	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/25/24 08:42	1
Acetone	<3.10		10.0	3.10	ug/L			05/25/24 08:42	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/25/24 08:42	1
Benzene	<0.220		0.500	0.220	ug/L			05/25/24 08:42	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/25/24 08:42	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/25/24 08:42	1
Bromoform	<0.780		5.00	0.780	ug/L			05/25/24 08:42	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/25/24 08:42	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/25/24 08:42	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/25/24 08:42	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/25/24 08:42	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/25/24 08:42	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/25/24 08:42	1
Chloroform	<1.30		3.00	1.30	ug/L			05/25/24 08:42	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/25/24 08:42	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/25/24 08:42	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/25/24 08:42	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/25/24 08:42	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/25/24 08:42	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/25/24 08:42	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/25/24 08:42	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/25/24 08:42	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/25/24 08:42	1
Styrene	<0.370		1.00	0.370	ug/L			05/25/24 08:42	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/25/24 08:42	1
Toluene	<0.430		1.00	0.430	ug/L			05/25/24 08:42	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/25/24 08:42	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/25/24 08:42	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/25/24 08:42	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/25/24 08:42	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/25/24 08:42	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/25/24 08:42	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/25/24 08:42	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/25/24 08:42	1

Client: AECOM
Job ID: 310-281866-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: P-402A
Date Collected: 05/22/24 12:30
Date Received: 05/23/24 08:55

Lab Sample ID: 310-281866-3
Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*101*		*73 - 130*		*05/25/24 08:42*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*05/25/24 08:42*	*1*
4-Bromofluorobenzene (Surr)	*107*		*80 - 120*		*05/25/24 08:42*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**2.51**		2.00	1.00	ug/L		05/24/24 09:45	05/30/24 23:57	1
Arsenic	<0.530		2.00	0.530	ug/L		05/24/24 09:45	05/30/24 23:57	1
Barium	**4.08**		2.00	0.660	ug/L		05/24/24 09:45	05/30/24 23:57	1
Beryllium	<0.330		1.00	0.330	ug/L		05/24/24 09:45	05/30/24 23:57	1
Cadmium	<0.100		0.200	0.100	ug/L		05/24/24 09:45	05/30/24 23:57	1
Chromium	**4.42**	**J**	5.00	1.20	ug/L		05/24/24 09:45	05/30/24 23:57	1
Cobalt	**0.172**	**J**	0.500	0.170	ug/L		05/24/24 09:45	05/30/24 23:57	1
Copper	<1.80		5.00	1.80	ug/L		05/24/24 09:45	05/30/24 23:57	1
Lead	<0.260		0.500	0.260	ug/L		05/24/24 09:45	05/30/24 23:57	1
Nickel	**7.73**		5.00	2.10	ug/L		05/24/24 09:45	05/30/24 23:57	1
Selenium	<1.40		5.00	1.40	ug/L		05/24/24 09:45	05/30/24 23:57	1
Silver	<0.500		1.00	0.500	ug/L		05/24/24 09:45	05/30/24 23:57	1
Thallium	<0.570		1.00	0.570	ug/L		05/24/24 09:45	05/30/24 23:57	1
Vanadium	**1.36**	**J**	5.00	1.10	ug/L		05/24/24 09:45	05/30/24 23:57	1
Zinc	**27.6**		20.0	9.70	ug/L		05/24/24 09:45	05/30/24 23:57	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**2.63**		1.88	1.39	mg/L			05/23/24 12:51	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**1.02**				NTU			05/22/24 12:30	1

Client: AECOM
Job ID: 310-281866-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: P-402C
Lab Sample ID: 310-281866-4
Date Collected: 05/22/24 11:00
Matrix: Water
Date Received: 05/23/24 08:55

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/25/24 09:04	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/25/24 09:04	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/25/24 09:04	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/25/24 09:04	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/25/24 09:04	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/25/24 09:04	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/25/24 09:04	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/25/24 09:04	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/25/24 09:04	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/25/24 09:04	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/25/24 09:04	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/25/24 09:04	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/25/24 09:04	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/25/24 09:04	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/25/24 09:04	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/25/24 09:04	1
Acetone	<3.10		10.0	3.10	ug/L			05/25/24 09:04	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/25/24 09:04	1
Benzene	<0.220		0.500	0.220	ug/L			05/25/24 09:04	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/25/24 09:04	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/25/24 09:04	1
Bromoform	<0.780		5.00	0.780	ug/L			05/25/24 09:04	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/25/24 09:04	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/25/24 09:04	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/25/24 09:04	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/25/24 09:04	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/25/24 09:04	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/25/24 09:04	1
Chloroform	<1.30		3.00	1.30	ug/L			05/25/24 09:04	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/25/24 09:04	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/25/24 09:04	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/25/24 09:04	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/25/24 09:04	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/25/24 09:04	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/25/24 09:04	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/25/24 09:04	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/25/24 09:04	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/25/24 09:04	1
Styrene	<0.370		1.00	0.370	ug/L			05/25/24 09:04	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/25/24 09:04	1
Toluene	<0.430		1.00	0.430	ug/L			05/25/24 09:04	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/25/24 09:04	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/25/24 09:04	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/25/24 09:04	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/25/24 09:04	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/25/24 09:04	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/25/24 09:04	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/25/24 09:04	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/25/24 09:04	1

Client: AECOM
Job ID: 310-281866-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: P-402C
Lab Sample ID: 310-281866-4

Date Collected: 05/22/24 11:00
Matrix: Water

Date Received: 05/23/24 08:55

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*102*		*73 - 130*		*05/25/24 09:04*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*05/25/24 09:04*	*1*
4-Bromofluorobenzene (Surr)	*107*		*80 - 120*		*05/25/24 09:04*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		05/24/24 09:45	05/31/24 00:01	1
Arsenic	<0.530		2.00	0.530	ug/L		05/24/24 09:45	05/31/24 00:01	1
Barium	**70.3**		2.00	0.660	ug/L		05/24/24 09:45	05/31/24 00:01	1
Beryllium	<0.330		1.00	0.330	ug/L		05/24/24 09:45	05/31/24 00:01	1
Cadmium	<0.100		0.200	0.100	ug/L		05/24/24 09:45	05/31/24 00:01	1
Chromium	<1.20		5.00	1.20	ug/L		05/24/24 09:45	05/31/24 00:01	1
Cobalt	**0.380**	**J**	0.500	0.170	ug/L		05/24/24 09:45	05/31/24 00:01	1
Copper	**2.33**	**J**	5.00	1.80	ug/L		05/24/24 09:45	05/31/24 00:01	1
Lead	<0.260		0.500	0.260	ug/L		05/24/24 09:45	05/31/24 00:01	1
Nickel	**2.31**	**J**	5.00	2.10	ug/L		05/24/24 09:45	05/31/24 00:01	1
Selenium	<1.40		5.00	1.40	ug/L		05/24/24 09:45	05/31/24 00:01	1
Silver	<0.500		1.00	0.500	ug/L		05/24/24 09:45	05/31/24 00:01	1
Thallium	<0.570		1.00	0.570	ug/L		05/24/24 09:45	05/31/24 00:01	1
Vanadium	<1.10		5.00	1.10	ug/L		05/24/24 09:45	05/31/24 00:01	1
Zinc	<9.70		20.0	9.70	ug/L		05/24/24 09:45	05/31/24 00:01	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	<1.39		1.88	1.39	mg/L			05/23/24 12:51	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**0.70**				NTU			05/22/24 11:00	1

Client: AECOM
Job ID: 310-281866-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: P-604C
Lab Sample ID: 310-281866-5
Date Collected: 05/22/24 08:30
Matrix: Water
Date Received: 05/23/24 08:55

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/25/24 09:26	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/25/24 09:26	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/25/24 09:26	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/25/24 09:26	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/25/24 09:26	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/25/24 09:26	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/25/24 09:26	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/25/24 09:26	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/25/24 09:26	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/25/24 09:26	1
1,2-Dichloroethane	**0.417**	**J**	1.00	0.390	ug/L			05/25/24 09:26	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/25/24 09:26	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/25/24 09:26	1
2-Butanone (MEK)	**2.68**	**J**	10.0	2.10	ug/L			05/25/24 09:26	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/25/24 09:26	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/25/24 09:26	1
Acetone	**716**		10.0	3.10	ug/L			05/25/24 09:26	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/25/24 09:26	1
Benzene	**1.40**		0.500	0.220	ug/L			05/25/24 09:26	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/25/24 09:26	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/25/24 09:26	1
Bromoform	<0.780		5.00	0.780	ug/L			05/25/24 09:26	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/25/24 09:26	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/25/24 09:26	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/25/24 09:26	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/25/24 09:26	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/25/24 09:26	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/25/24 09:26	1
Chloroform	<1.30		3.00	1.30	ug/L			05/25/24 09:26	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/25/24 09:26	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/25/24 09:26	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/25/24 09:26	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/25/24 09:26	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/25/24 09:26	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/25/24 09:26	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/25/24 09:26	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/25/24 09:26	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/25/24 09:26	1
Styrene	<0.370		1.00	0.370	ug/L			05/25/24 09:26	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/25/24 09:26	1
Toluene	<0.430		1.00	0.430	ug/L			05/25/24 09:26	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/25/24 09:26	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/25/24 09:26	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/25/24 09:26	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/25/24 09:26	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/25/24 09:26	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/25/24 09:26	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/25/24 09:26	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/25/24 09:26	1

Client: AECOM
Job ID: 310-281866-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: P-604C
Lab Sample ID: 310-281866-5
Date Collected: 05/22/24 08:30
Matrix: Water
Date Received: 05/23/24 08:55

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*100*		*73 - 130*		*05/25/24 09:26*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*05/25/24 09:26*	*1*
4-Bromofluorobenzene (Surr)	*106*		*80 - 120*		*05/25/24 09:26*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		05/24/24 09:45	05/31/24 00:05	1
Arsenic	**1.55**	**J**	2.00	0.530	ug/L		05/24/24 09:45	05/31/24 00:05	1
Barium	**23.0**		2.00	0.660	ug/L		05/24/24 09:45	05/31/24 00:05	1
Beryllium	<0.330		1.00	0.330	ug/L		05/24/24 09:45	05/31/24 00:05	1
Cadmium	**0.229**		0.200	0.100	ug/L		05/24/24 09:45	05/31/24 00:05	1
Chromium	**4.99**	**J**	5.00	1.20	ug/L		05/24/24 09:45	05/31/24 00:05	1
Cobalt	**29.4**		0.500	0.170	ug/L		05/24/24 09:45	05/31/24 00:05	1
Copper	**5.82**		5.00	1.80	ug/L		05/24/24 09:45	05/31/24 00:05	1
Lead	**0.574**		0.500	0.260	ug/L		05/24/24 09:45	05/31/24 00:05	1
Nickel	**81.5**		5.00	2.10	ug/L		05/24/24 09:45	05/31/24 00:05	1
Selenium	<1.40		5.00	1.40	ug/L		05/24/24 09:45	05/31/24 00:05	1
Silver	<0.500		1.00	0.500	ug/L		05/24/24 09:45	05/31/24 00:05	1
Thallium	<0.570		1.00	0.570	ug/L		05/24/24 09:45	05/31/24 00:05	1
Vanadium	<1.10		5.00	1.10	ug/L		05/24/24 09:45	05/31/24 00:05	1
Zinc	**10.5**	**J**	20.0	9.70	ug/L		05/24/24 09:45	05/31/24 00:05	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**80.0**		15.0	11.1	mg/L			05/23/24 12:51	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**59.32**				NTU			05/22/24 08:30	1

Client: AECOM
Job ID: 310-281866-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: P-703C
Lab Sample ID: 310-281866-6
Date Collected: 05/22/24 09:45
Matrix: Water
Date Received: 05/23/24 08:55

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/25/24 09:47	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/25/24 09:47	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/25/24 09:47	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/25/24 09:47	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/25/24 09:47	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/25/24 09:47	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/25/24 09:47	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/25/24 09:47	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/25/24 09:47	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/25/24 09:47	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/25/24 09:47	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/25/24 09:47	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/25/24 09:47	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/25/24 09:47	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/25/24 09:47	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/25/24 09:47	1
Acetone	<3.10		10.0	3.10	ug/L			05/25/24 09:47	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/25/24 09:47	1
Benzene	<0.220		0.500	0.220	ug/L			05/25/24 09:47	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/25/24 09:47	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/25/24 09:47	1
Bromoform	<0.780		5.00	0.780	ug/L			05/25/24 09:47	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/25/24 09:47	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/25/24 09:47	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/25/24 09:47	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/25/24 09:47	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/25/24 09:47	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/25/24 09:47	1
Chloroform	<1.30		3.00	1.30	ug/L			05/25/24 09:47	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/25/24 09:47	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/25/24 09:47	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/25/24 09:47	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/25/24 09:47	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/25/24 09:47	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/25/24 09:47	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/25/24 09:47	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/25/24 09:47	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/25/24 09:47	1
Styrene	<0.370		1.00	0.370	ug/L			05/25/24 09:47	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/25/24 09:47	1
Toluene	<0.430		1.00	0.430	ug/L			05/25/24 09:47	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/25/24 09:47	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/25/24 09:47	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/25/24 09:47	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/25/24 09:47	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/25/24 09:47	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/25/24 09:47	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/25/24 09:47	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/25/24 09:47	1

Client: AECOM
Job ID: 310-281866-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: P-703C
Date Collected: 05/22/24 09:45
Date Received: 05/23/24 08:55

Lab Sample ID: 310-281866-6
Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*104*		*73 - 130*		*05/25/24 09:47*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*05/25/24 09:47*	*1*
4-Bromofluorobenzene (Surr)	*105*		*80 - 120*		*05/25/24 09:47*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		05/24/24 09:45	05/31/24 00:08	1
Arsenic	**1.24**	**J**	2.00	0.530	ug/L		05/24/24 09:45	05/31/24 00:08	1
Barium	**84.8**		2.00	0.660	ug/L		05/24/24 09:45	05/31/24 00:08	1
Beryllium	<0.330		1.00	0.330	ug/L		05/24/24 09:45	05/31/24 00:08	1
Cadmium	<0.100		0.200	0.100	ug/L		05/24/24 09:45	05/31/24 00:08	1
Chromium	<1.20		5.00	1.20	ug/L		05/24/24 09:45	05/31/24 00:08	1
Cobalt	**0.531**		0.500	0.170	ug/L		05/24/24 09:45	05/31/24 00:08	1
Copper	<1.80		5.00	1.80	ug/L		05/24/24 09:45	05/31/24 00:08	1
Lead	<0.260		0.500	0.260	ug/L		05/24/24 09:45	05/31/24 00:08	1
Nickel	<2.10		5.00	2.10	ug/L		05/24/24 09:45	05/31/24 00:08	1
Selenium	<1.40		5.00	1.40	ug/L		05/24/24 09:45	05/31/24 00:08	1
Silver	<0.500		1.00	0.500	ug/L		05/24/24 09:45	05/31/24 00:08	1
Thallium	<0.570		1.00	0.570	ug/L		05/24/24 09:45	05/31/24 00:08	1
Vanadium	<1.10		5.00	1.10	ug/L		05/24/24 09:45	05/31/24 00:08	1
Zinc	<9.70		20.0	9.70	ug/L		05/24/24 09:45	05/31/24 00:08	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**2.00**		1.88	1.39	mg/L			05/23/24 12:51	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**1.24**				NTU			05/22/24 09:45	1

Client: AECOM
Job ID: 310-281866-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Trip Blank
Lab Sample ID: 310-281866-7
Date Collected: 05/22/24 00:00
Matrix: Water
Date Received: 05/23/24 08:55

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/25/24 07:15	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/25/24 07:15	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/25/24 07:15	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/25/24 07:15	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/25/24 07:15	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/25/24 07:15	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/25/24 07:15	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/25/24 07:15	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/25/24 07:15	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/25/24 07:15	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/25/24 07:15	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/25/24 07:15	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/25/24 07:15	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/25/24 07:15	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/25/24 07:15	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/25/24 07:15	1
Acetone	<3.10		10.0	3.10	ug/L			05/25/24 07:15	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/25/24 07:15	1
Benzene	<0.220		0.500	0.220	ug/L			05/25/24 07:15	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/25/24 07:15	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/25/24 07:15	1
Bromoform	<0.780		5.00	0.780	ug/L			05/25/24 07:15	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/25/24 07:15	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/25/24 07:15	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/25/24 07:15	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/25/24 07:15	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/25/24 07:15	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/25/24 07:15	1
Chloroform	<1.30		3.00	1.30	ug/L			05/25/24 07:15	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/25/24 07:15	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/25/24 07:15	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/25/24 07:15	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/25/24 07:15	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/25/24 07:15	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/25/24 07:15	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/25/24 07:15	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/25/24 07:15	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/25/24 07:15	1
Styrene	<0.370		1.00	0.370	ug/L			05/25/24 07:15	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/25/24 07:15	1
Toluene	<0.430		1.00	0.430	ug/L			05/25/24 07:15	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/25/24 07:15	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/25/24 07:15	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/25/24 07:15	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/25/24 07:15	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/25/24 07:15	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/25/24 07:15	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/25/24 07:15	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/25/24 07:15	1

Client: AECOM
Job ID: 310-281866-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Trip Blank
Lab Sample ID: 310-281866-7
Date Collected: 05/22/24 00:00
Matrix: Water
Date Received: 05/23/24 08:55

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	99		73 - 130		05/25/24 07:15	1
Toluene-d8 (Surr)	100		80 - 120		05/25/24 07:15	1
4-Bromofluorobenzene (Surr)	109		80 - 120		05/25/24 07:15	1

Definitions/Glossary

Client: AECOM
Job ID: 310-281866-1
Project/Site: Black Hawk County Landfill (IDNR)

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Surrogate Summary

Client: AECOM
Job ID: 310-281866-1
Project/Site: Black Hawk County Landfill (IDNR)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-281866-1	P-215CR	99	98	104
310-281866-2	P-216CR	101	99	104
310-281866-3	P-402A	101	98	107
310-281866-4	P-402C	102	99	107
310-281866-5	P-604C	100	100	106
310-281866-6	P-703C	104	98	105
310-281866-7	Trip Blank	99	100	109
LCS 310-422726/6	Lab Control Sample	95	105	100
LCS 310-422726/7	Lab Control Sample	100	99	109
MB 310-422726/5	Method Blank	97	98	104

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 310-422726/5
Matrix: Water
Analysis Batch: 422726

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/25/24 06:09	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/25/24 06:09	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/25/24 06:09	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/25/24 06:09	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/25/24 06:09	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/25/24 06:09	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/25/24 06:09	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/25/24 06:09	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/25/24 06:09	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/25/24 06:09	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/25/24 06:09	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/25/24 06:09	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/25/24 06:09	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/25/24 06:09	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/25/24 06:09	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/25/24 06:09	1
Acetone	<3.10		10.0	3.10	ug/L			05/25/24 06:09	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/25/24 06:09	1
Benzene	<0.220		0.500	0.220	ug/L			05/25/24 06:09	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/25/24 06:09	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/25/24 06:09	1
Bromoform	<0.780		5.00	0.780	ug/L			05/25/24 06:09	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/25/24 06:09	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/25/24 06:09	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/25/24 06:09	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/25/24 06:09	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/25/24 06:09	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/25/24 06:09	1
Chloroform	<1.30		3.00	1.30	ug/L			05/25/24 06:09	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/25/24 06:09	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/25/24 06:09	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/25/24 06:09	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/25/24 06:09	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/25/24 06:09	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/25/24 06:09	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/25/24 06:09	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/25/24 06:09	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/25/24 06:09	1
Styrene	<0.370		1.00	0.370	ug/L			05/25/24 06:09	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/25/24 06:09	1
Toluene	<0.430		1.00	0.430	ug/L			05/25/24 06:09	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/25/24 06:09	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/25/24 06:09	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/25/24 06:09	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/25/24 06:09	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/25/24 06:09	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/25/24 06:09	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/25/24 06:09	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-422726/5
Matrix: Water
Analysis Batch: 422726

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/25/24 06:09	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*97*		*73 - 130*		*05/25/24 06:09*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*05/25/24 06:09*	*1*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*		*05/25/24 06:09*	*1*

Lab Sample ID: LCS 310-422726/6
Matrix: Water
Analysis Batch: 422726

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	20.0	20.24		ug/L		101	71 - 120
1,1,1-Trichloroethane	20.0	18.77		ug/L		94	73 - 129
1,1,2,2-Tetrachloroethane	20.0	20.91		ug/L		105	68 - 124
1,1,2-Trichloroethane	20.0	20.53		ug/L		103	73 - 123
1,1-Dichloroethane	20.0	19.86		ug/L		99	70 - 127
1,1-Dichloroethene	20.0	19.30		ug/L		96	63 - 132
1,2,3-Trichloropropane	20.0	20.52		ug/L		103	65 - 127
1,2-Dibromo-3-Chloropropane	20.0	21.73		ug/L		109	50 - 150
1,2-Dibromoethane (EDB)	20.0	18.94		ug/L		95	75 - 125
1,2-Dichlorobenzene	20.0	21.13		ug/L		106	74 - 120
1,2-Dichloroethane	20.0	18.98		ug/L		95	71 - 125
1,2-Dichloropropane	20.0	20.44		ug/L		102	73 - 124
1,4-Dichlorobenzene	20.0	19.96		ug/L		100	72 - 120
2-Butanone (MEK)	40.0	44.45		ug/L		111	50 - 150
2-Hexanone	40.0	42.94		ug/L		107	60 - 140
4-Methyl-2-pentanone (MIBK)	40.0	42.78		ug/L		107	60 - 139
Acetone	40.0	43.04		ug/L		108	50 - 150
Acrylonitrile	200	210.4		ug/L		105	50 - 150
Benzene	20.0	20.05		ug/L		100	72 - 124
Bromochloromethane	20.0	19.40		ug/L		97	73 - 130
Bromodichloromethane	20.0	19.29		ug/L		96	74 - 122
Bromoform	20.0	18.74		ug/L		94	61 - 122
Carbon disulfide	20.0	20.39		ug/L		102	59 - 135
Carbon tetrachloride	20.0	18.80		ug/L		94	67 - 132
Chlorobenzene	20.0	20.42		ug/L		102	76 - 120
Chlorodibromomethane	20.0	18.93		ug/L		95	71 - 121
Chloroform	20.0	18.85		ug/L		94	72 - 125
cis-1,2-Dichloroethene	20.0	19.56		ug/L		98	74 - 123
cis-1,3-Dichloropropene	20.0	19.39		ug/L		97	71 - 125
Dibromomethane	20.0	19.62		ug/L		98	74 - 125
Ethylbenzene	20.0	21.59		ug/L		108	74 - 122
Iodomethane	20.0	11.79		ug/L		59	10 - 150
Methylene Chloride	20.0	21.09		ug/L		105	50 - 150
Styrene	20.0	20.68		ug/L		103	74 - 121
Tetrachloroethene	20.0	19.10		ug/L		96	71 - 130
Toluene	20.0	19.81		ug/L		99	74 - 123

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-422726/6
Matrix: Water
Analysis Batch: 422726

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
trans-1,2-Dichloroethene	20.0	19.61		ug/L		98	70 - 126
trans-1,3-Dichloropropene	20.0	18.24		ug/L		91	69 - 123
trans-1,4-Dichloro-2-butene	20.0	18.56		ug/L		93	50 - 150
Trichloroethene	20.0	20.07		ug/L		100	72 - 126
Vinyl acetate	40.0	34.95		ug/L		87	50 - 150
Xylenes, Total	40.0	41.61		ug/L		104	73 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*95*		*73 - 130*
Toluene-d8 (Surr)	*105*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*

Lab Sample ID: LCS 310-422726/7
Matrix: Water
Analysis Batch: 422726

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	16.65		ug/L		83	23 - 150
Chloroethane	20.0	20.47		ug/L		102	54 - 136
Chloromethane	20.0	22.49		ug/L		112	38 - 150
Trichlorofluoromethane	20.0	20.32		ug/L		102	54 - 149
Vinyl chloride	20.0	22.26		ug/L		111	56 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*100*		*73 - 130*
Toluene-d8 (Surr)	*99*		*80 - 120*
4-Bromofluorobenzene (Surr)	*109*		*80 - 120*

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-422622/1-A
Matrix: Water
Analysis Batch: 423173

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 422622

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		05/24/24 09:45	05/30/24 22:09	1
Arsenic	<0.530		2.00	0.530	ug/L		05/24/24 09:45	05/30/24 22:09	1
Barium	<0.660		2.00	0.660	ug/L		05/24/24 09:45	05/30/24 22:09	1
Beryllium	<0.330		1.00	0.330	ug/L		05/24/24 09:45	05/30/24 22:09	1
Cadmium	<0.100		0.200	0.100	ug/L		05/24/24 09:45	05/30/24 22:09	1
Chromium	<1.20		5.00	1.20	ug/L		05/24/24 09:45	05/30/24 22:09	1
Cobalt	<0.170		0.500	0.170	ug/L		05/24/24 09:45	05/30/24 22:09	1
Copper	<1.80		5.00	1.80	ug/L		05/24/24 09:45	05/30/24 22:09	1
Lead	<0.260		0.500	0.260	ug/L		05/24/24 09:45	05/30/24 22:09	1
Nickel	<2.10		5.00	2.10	ug/L		05/24/24 09:45	05/30/24 22:09	1
Selenium	<1.40		5.00	1.40	ug/L		05/24/24 09:45	05/30/24 22:09	1
Silver	<0.500		1.00	0.500	ug/L		05/24/24 09:45	05/30/24 22:09	1
Thallium	<0.570		1.00	0.570	ug/L		05/24/24 09:45	05/30/24 22:09	1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 310-422622/1-A
Matrix: Water
Analysis Batch: 423173

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 422622

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vanadium	<1.10		5.00	1.10	ug/L		05/24/24 09:45	05/30/24 22:09	1
Zinc	<9.70		20.0	9.70	ug/L		05/24/24 09:45	05/30/24 22:09	1

Lab Sample ID: LCS 310-422622/2-A
Matrix: Water
Analysis Batch: 423173

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 422622

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	200	196.8		ug/L		98	80 - 120
Arsenic	200	216.6		ug/L		108	80 - 120
Barium	100	99.87		ug/L		100	80 - 120
Beryllium	100	102.1		ug/L		102	80 - 120
Cadmium	100	90.91		ug/L		91	80 - 120
Chromium	100	104.5		ug/L		104	80 - 120
Cobalt	100	104.7		ug/L		105	80 - 120
Copper	200	207.1		ug/L		104	80 - 120
Lead	200	206.0		ug/L		103	80 - 120
Nickel	200	213.6		ug/L		107	80 - 120
Selenium	400	378.2		ug/L		95	80 - 120
Silver	100	108.8		ug/L		109	80 - 120
Thallium	100	92.63		ug/L		93	80 - 120
Vanadium	100	101.3		ug/L		101	80 - 120
Zinc	200	195.9		ug/L		98	80 - 120

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: MB 310-422587/1
Matrix: Water
Analysis Batch: 422587

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<3.70		5.00	3.70	mg/L			05/23/24 12:51	1

Lab Sample ID: LCS 310-422587/2
Matrix: Water
Analysis Batch: 422587

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	96.00		mg/L		96	81 - 116

Lab Sample ID: 310-281866-5 DU
Matrix: Water
Analysis Batch: 422587

Client Sample ID: P-604C
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Suspended Solids	80.0		77.00		mg/L		4	35

GC/MS VOA

Analysis Batch: 422726

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-281866-1	P-215CR	Total/NA	Water	8260D	
310-281866-2	P-216CR	Total/NA	Water	8260D	
310-281866-3	P-402A	Total/NA	Water	8260D	
310-281866-4	P-402C	Total/NA	Water	8260D	
310-281866-5	P-604C	Total/NA	Water	8260D	
310-281866-6	P-703C	Total/NA	Water	8260D	
310-281866-7	Trip Blank	Total/NA	Water	8260D	
MB 310-422726/5	Method Blank	Total/NA	Water	8260D	
LCS 310-422726/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-422726/7	Lab Control Sample	Total/NA	Water	8260D	

Metals

Prep Batch: 422622

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-281866-1	P-215CR	Total/NA	Water	3005A	
310-281866-2	P-216CR	Total/NA	Water	3005A	
310-281866-3	P-402A	Total/NA	Water	3005A	
310-281866-4	P-402C	Total/NA	Water	3005A	
310-281866-5	P-604C	Total/NA	Water	3005A	
310-281866-6	P-703C	Total/NA	Water	3005A	
MB 310-422622/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-422622/2-A	Lab Control Sample	Total/NA	Water	3005A	

Analysis Batch: 423173

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-281866-1	P-215CR	Total/NA	Water	6020B	422622
310-281866-2	P-216CR	Total/NA	Water	6020B	422622
310-281866-3	P-402A	Total/NA	Water	6020B	422622
310-281866-4	P-402C	Total/NA	Water	6020B	422622
310-281866-5	P-604C	Total/NA	Water	6020B	422622
310-281866-6	P-703C	Total/NA	Water	6020B	422622
MB 310-422622/1-A	Method Blank	Total/NA	Water	6020B	422622
LCS 310-422622/2-A	Lab Control Sample	Total/NA	Water	6020B	422622

General Chemistry

Analysis Batch: 422587

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-281866-1	P-215CR	Total/NA	Water	I-3765-85	
310-281866-2	P-216CR	Total/NA	Water	I-3765-85	
310-281866-3	P-402A	Total/NA	Water	I-3765-85	
310-281866-4	P-402C	Total/NA	Water	I-3765-85	
310-281866-5	P-604C	Total/NA	Water	I-3765-85	
310-281866-6	P-703C	Total/NA	Water	I-3765-85	
MB 310-422587/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-422587/2	Lab Control Sample	Total/NA	Water	I-3765-85	
310-281866-5 DU	P-604C	Total/NA	Water	I-3765-85	

QC Association Summary

Client: AECOM
Job ID: 310-281866-1
Project/Site: Black Hawk County Landfill (IDNR)

Field Service / Mobile Lab

Analysis Batch: 423239

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-281866-1	P-215CR	Total/NA	Water	Field Sampling	
310-281866-2	P-216CR	Total/NA	Water	Field Sampling	
310-281866-3	P-402A	Total/NA	Water	Field Sampling	
310-281866-4	P-402C	Total/NA	Water	Field Sampling	
310-281866-5	P-604C	Total/NA	Water	Field Sampling	
310-281866-6	P-703C	Total/NA	Water	Field Sampling	

Lab Chronicle

Client: AECOM
Job ID: 310-281866-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: P-215CR
Lab Sample ID: 310-281866-1
Date Collected: 05/22/24 16:00
Matrix: Water
Date Received: 05/23/24 08:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	422726	WSE8	EET CF	05/25/24 07:59
Total/NA	Prep	3005A			422622	KM3E	EET CF	05/24/24 09:45
Total/NA	Analysis	6020B		1	423173	NFT2	EET CF	05/30/24 23:50
Total/NA	Analysis	I-3765-85		1	422587	DGU1	EET CF	05/23/24 12:51
Total/NA	Analysis	Field Sampling		1	423239	BJ0R	EET CF	05/22/24 16:00

Client Sample ID: P-216CR
Lab Sample ID: 310-281866-2
Date Collected: 05/22/24 14:00
Matrix: Water
Date Received: 05/23/24 08:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	422726	WSE8	EET CF	05/25/24 08:20
Total/NA	Prep	3005A			422622	KM3E	EET CF	05/24/24 09:45
Total/NA	Analysis	6020B		1	423173	NFT2	EET CF	05/30/24 23:54
Total/NA	Analysis	I-3765-85		1	422587	DGU1	EET CF	05/23/24 12:51
Total/NA	Analysis	Field Sampling		1	423239	BJ0R	EET CF	05/22/24 14:00

Client Sample ID: P-402A
Lab Sample ID: 310-281866-3
Date Collected: 05/22/24 12:30
Matrix: Water
Date Received: 05/23/24 08:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	422726	WSE8	EET CF	05/25/24 08:42
Total/NA	Prep	3005A			422622	KM3E	EET CF	05/24/24 09:45
Total/NA	Analysis	6020B		1	423173	NFT2	EET CF	05/30/24 23:57
Total/NA	Analysis	I-3765-85		1	422587	DGU1	EET CF	05/23/24 12:51
Total/NA	Analysis	Field Sampling		1	423239	BJ0R	EET CF	05/22/24 12:30

Client Sample ID: P-402C
Lab Sample ID: 310-281866-4
Date Collected: 05/22/24 11:00
Matrix: Water
Date Received: 05/23/24 08:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	422726	WSE8	EET CF	05/25/24 09:04
Total/NA	Prep	3005A			422622	KM3E	EET CF	05/24/24 09:45
Total/NA	Analysis	6020B		1	423173	NFT2	EET CF	05/31/24 00:01
Total/NA	Analysis	I-3765-85		1	422587	DGU1	EET CF	05/23/24 12:51
Total/NA	Analysis	Field Sampling		1	423239	BJ0R	EET CF	05/22/24 11:00

Lab Chronicle

Client: AECOM
Job ID: 310-281866-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: P-604C
Lab Sample ID: 310-281866-5
Date Collected: 05/22/24 08:30
Matrix: Water
Date Received: 05/23/24 08:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	422726	WSE8	EET CF	05/25/24 09:26
Total/NA	Prep	3005A			422622	KM3E	EET CF	05/24/24 09:45
Total/NA	Analysis	6020B		1	423173	NFT2	EET CF	05/31/24 00:05
Total/NA	Analysis	I-3765-85		1	422587	DGU1	EET CF	05/23/24 12:51
Total/NA	Analysis	Field Sampling		1	423239	BJ0R	EET CF	05/22/24 08:30

Client Sample ID: P-703C
Lab Sample ID: 310-281866-6
Date Collected: 05/22/24 09:45
Matrix: Water
Date Received: 05/23/24 08:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	422726	WSE8	EET CF	05/25/24 09:47
Total/NA	Prep	3005A			422622	KM3E	EET CF	05/24/24 09:45
Total/NA	Analysis	6020B		1	423173	NFT2	EET CF	05/31/24 00:08
Total/NA	Analysis	I-3765-85		1	422587	DGU1	EET CF	05/23/24 12:51
Total/NA	Analysis	Field Sampling		1	423239	BJ0R	EET CF	05/22/24 09:45

Client Sample ID: Trip Blank
Lab Sample ID: 310-281866-7
Date Collected: 05/22/24 00:00
Matrix: Water
Date Received: 05/23/24 08:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	422726	WSE8	EET CF	05/25/24 07:15

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Accreditation/Certification Summary

Client: AECOM
Job ID: 310-281866-1
Project/Site: Black Hawk County Landfill (IDNR)

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8260D		Water	m,p-Xylene
8260D		Water	o-Xylene
Field Sampling		Water	Field Turbidity

Method Summary

Client: AECOM
Job ID: 310-281866-1
Project/Site: Black Hawk County Landfill (IDNR)

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
Field Sampling	Field Sampling	EPA	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
5030B	Purge and Trap	SW846	EET CF

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

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310-281866 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: AECOM

City/State: CITY Ottumwa STATE IA Project: BHC IDNR

Receipt Information

Date/Time Received: DATE 5/23/24 TIME 0855 Received By: TO

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☐ Lab Courier ☐ Lab Field Services ☑ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☑ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☐ Yes ☑ No *If yes:* Cooler # _____ of _____

Cooler Custody Seals Present? ☐ Yes ☑ No *If yes:* Cooler custody seals intact? ☐ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☑ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☑ Yes ☐ No *If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☒ Wet Ice ☐ Blue Ice ☐ Dry Ice ☐ Other:_____ ☐ NONE

Thermometer ID: P Correction Factor (°C): 0.0

Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 2.4 Corrected Temp (°C): 2.4

Sample Container Temperature

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

Eurofins Cedar Falls
3019 Venture Way

Cedar Falls, IA 50613
phone 319 277.2401 fax 319.277 2425

Chain of Custody Record

eurofins Environment Testing America

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other IDNR

Eurofins Environment Testing America

Client Contact	**Project Manager: Chris Oelkers**	COC No
AECOM	Email Christopher Oelkers@aecom com	**Site Contact:** / **Date: 5-23-24**	1 of 1 COCs
501 Sycamore Street, Suite 222	**Tel/Fax:319-296-6878**	**Lab Contact:** / **Carrier:**	TALS Project #
Waterloo, IA 50703	**Analysis Turnaround Time** ☑ CALENDAR DAYS ☐ WORKING DAYS		Sampler
(319) 232-6531 Phone	TAT if different from Below ☑ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day		**For Lab Use Only:** Walk-in Client / Lab Sampling
(xxx) xxx-xxxx FAX			
Project Name Black Hawk Co IDNR			Job / SDG No
Site Black Hawk County Landfill			
P O #			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Appendix I, TSS	Appendix II, TSS	2,4-D	4,4'-DDD	beta-BHC	delta BHC	Endosulfan I	Endosulfan sulfate	Endrin aldehyde	Silvex	Sulfide	Sample Specific Notes
GUW3-1			G	GW		N		X											
GUX-1			G	GW		N		X											
P-213C			G	GW		N			X										
P-214CR			G	GW		N		X											
P-215CR	5-22-24	1600	G	GW	5	N		X											Turbidity - 13.62 NTU
P-216CR	5-22-24	1400	G	GW	5	N		X											Turbidity - 12.82 NTU
P-402A	5-22-24	1230	G	GW	5	N		X											Turbidity - 1.02 NTU
P-402C	5-22-24	1100	G	GW	5	N		X											Turbidity - 0.70 NTU
P-604C	5-22-24	0830	G	GW	5	N		X											Turbidity - 59.32 NTU
P-703C	5-22-24	0945	G	GW	5	N		X											Turbidity - 1.24 NTU
P-703C-FD			G	GW		N		X											
Trip Blank	5-22-24	0500	G	W	2	N		X											

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No | Cooler Temp (°C) Obs'd _____ Corr'd. _____ | Therm ID No. _____

Relinquished by: Ben Porter	Company: Accom	Date/Time: 5-23-24	Received by:	Company:	Date/Time: 5/23/24 0825
Relinquished by:	Company:	Date/Time	Received by:	Company:	Date/Time
Relinquished by:	Company:	Date/Time	Received in Laboratory by:	Company:	Date/Time

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-281866-1

Login Number: 281866

List Source: Eurofins Cedar Falls

List Number: 1

Creator: Costello, Mackenzie K

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Chris Oelkers
AECOM
501 Sycamore Street
Suite #222
Waterloo, Iowa 50703

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JOB DESCRIPTION

Black Hawk County Landfill (IDNR)
Spring 2024

JOB NUMBER

310-281530-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



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Authorized for release by
Zach Bindert, Client Service Manager
Zach.Bindert@et.eurofinsus.com
(319)277-2401

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Job ID: 310-281530-1 — Eurofins Cedar Falls

Job Narrative
310-281530-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 5/17/2024 10:00 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.0°C.

GC/MS VOA
Method 8260D: The following sample was collected in a properly preserved vial; however, the pH was outside the required criteria when verified by the laboratory. The sample was analyzed within the 7-day holding time specified for unpreserved samples: OW-220B (310-281530-4).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Herbicides
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Field Service / Mobile Lab
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Sample Summary

Client: AECOM
Job ID: 310-281530-1
Project/Site: Black Hawk County Landfill (IDNR)

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-281530-1	MW-409B	Water	05/16/24 12:30	05/17/24 10:00
310-281530-2	OW-410B	Water	05/16/24 11:30	05/17/24 10:00
310-281530-3	Trip Blank	Water	05/16/24 05:00	05/17/24 10:00
310-281530-4	OW-220B	Water	05/16/24 13:30	05/17/24 10:00
310-281530-5	MW-320B	Water	05/16/24 15:00	05/17/24 10:00
310-281530-6	Equipment Blank-2	Water	05/16/24 16:00	05/17/24 10:00
310-281530-7	MW-320FD	Water	05/16/24 15:00	05/17/24 10:00

Detection Summary

Client: AECOM
Job ID: 310-281530-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: MW-409B — Lab Sample ID: 310-281530-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	6.25	J	10.0	3.10	ug/L	1		8260D	Total/NA
Arsenic	3.83		2.00	0.530	ug/L	1		6020B	Total/NA
Barium	35.8		2.00	0.660	ug/L	1		6020B	Total/NA
Cobalt	11.1		0.500	0.170	ug/L	1		6020B	Total/NA
Copper	5.00		5.00	1.80	ug/L	1		6020B	Total/NA
Lead	0.330	J	0.500	0.260	ug/L	1		6020B	Total/NA
Nickel	9.19		5.00	2.10	ug/L	1		6020B	Total/NA
Selenium	1.66	J	5.00	1.40	ug/L	1		6020B	Total/NA
Silver	0.863	J	1.00	0.500	ug/L	1		6020B	Total/NA
Total Suspended Solids	38.0		15.0	11.1	mg/L	1		I-3765-85	Total/NA
Field Turbidity	18.42				NTU	1		Field Sampling	Total/NA

Client Sample ID: OW-410B — Lab Sample ID: 310-281530-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone (MEK)	2.91	J	10.0	2.10	ug/L	1		8260D	Total/NA
Acetone	17.1		10.0	3.10	ug/L	1		8260D	Total/NA
Benzene	2.02		0.500	0.220	ug/L	1		8260D	Total/NA
Chlorobenzene	4.54		1.00	0.400	ug/L	1		8260D	Total/NA
Arsenic	11.8		2.00	0.530	ug/L	1		6020B	Total/NA
Barium	2750		8.00	2.64	ug/L	4		6020B	Total/NA
Chromium	4.13	J	5.00	1.20	ug/L	1		6020B	Total/NA
Cobalt	13.8		0.500	0.170	ug/L	1		6020B	Total/NA
Nickel	52.1		5.00	2.10	ug/L	1		6020B	Total/NA
Vanadium	1.76	J	5.00	1.10	ug/L	1		6020B	Total/NA
Total Suspended Solids	80.0		15.0	11.1	mg/L	1		I-3765-85	Total/NA
Field Turbidity	182.75				NTU	1		Field Sampling	Total/NA

Client Sample ID: Trip Blank — Lab Sample ID: 310-281530-3

No Detections.

Client Sample ID: OW-220B — Lab Sample ID: 310-281530-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	0.940	J	1.00	0.220	ug/L	1		8260D	Total/NA
1,4-Dichlorobenzene	1.87		1.00	0.230	ug/L	1		8260D	Total/NA
2-Butanone (MEK)	5.29	J	10.0	2.10	ug/L	1		8260D	Total/NA
Acetone	10.8		10.0	3.10	ug/L	1		8260D	Total/NA
Benzene	2.29		0.500	0.220	ug/L	1		8260D	Total/NA
Chloroethane	2.09	J	4.00	0.790	ug/L	1		8260D	Total/NA
cis-1,2-Dichloroethene	0.474	J	1.00	0.210	ug/L	1		8260D	Total/NA
Silvex (2,4,5-TP)	0.372		0.0477	0.0210	ug/L	1		8151A	Total/NA
Arsenic	14.4		2.00	0.530	ug/L	1		6020B	Total/NA
Barium	904		2.00	0.660	ug/L	1		6020B	Total/NA
Chromium	7.00		5.00	1.20	ug/L	1		6020B	Total/NA
Cobalt	21.7		0.500	0.170	ug/L	1		6020B	Total/NA
Nickel	135		5.00	2.10	ug/L	1		6020B	Total/NA
Vanadium	1.37	J	5.00	1.10	ug/L	1		6020B	Total/NA
Total Suspended Solids	115		15.0	11.1	mg/L	1		I-3765-85	Total/NA
Field Turbidity	4.72				NTU	1		Field Sampling	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: AECOM
Job ID: 310-281530-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: MW-320B — Lab Sample ID: 310-281530-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
m,p-Xylene	0.404	J	2.00	0.380	ug/L	1		8260D	Total/NA
Xylenes, Total	0.404	J	3.00	0.400	ug/L	1		8260D	Total/NA
Barium	235		2.00	0.660	ug/L	1		6020B	Total/NA
Chromium	83.3		5.00	1.20	ug/L	1		6020B	Total/NA
Cobalt	0.635		0.500	0.170	ug/L	1		6020B	Total/NA
Copper	2.38	J	5.00	1.80	ug/L	1		6020B	Total/NA
Nickel	31.6		5.00	2.10	ug/L	1		6020B	Total/NA
Vanadium	1.10	J	5.00	1.10	ug/L	1		6020B	Total/NA
Total Suspended Solids	5.13		1.88	1.39	mg/L	1		I-3765-85	Total/NA
Field Turbidity	19.41				NTU	1		Field Sampling	Total/NA

Client Sample ID: Equipment Blank-2 — Lab Sample ID: 310-281530-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	7.48	J	10.0	3.10	ug/L	1		8260D	Total/NA
Bromodichloromethane	0.830	J	1.00	0.390	ug/L	1		8260D	Total/NA
Chloroform	2.10	J	3.00	1.30	ug/L	1		8260D	Total/NA
Toluene	0.580	J	1.00	0.430	ug/L	1		8260D	Total/NA

Client Sample ID: MW-320FD — Lab Sample ID: 310-281530-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	236		2.00	0.660	ug/L	1		6020B	Total/NA
Chromium	91.6		5.00	1.20	ug/L	1		6020B	Total/NA
Cobalt	0.711		0.500	0.170	ug/L	1		6020B	Total/NA
Copper	2.49	J	5.00	1.80	ug/L	1		6020B	Total/NA
Nickel	33.4		5.00	2.10	ug/L	1		6020B	Total/NA
Vanadium	1.18	J	5.00	1.10	ug/L	1		6020B	Total/NA
Total Suspended Solids	2.00		1.88	1.39	mg/L	1		I-3765-85	Total/NA

This Detection Summary does not include radiochemical test results.

Client: AECOM
Job ID: 310-281530-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: MW-409B
Lab Sample ID: 310-281530-1
Date Collected: 05/16/24 12:30
Matrix: Water
Date Received: 05/17/24 10:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/23/24 08:46	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/23/24 08:46	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/23/24 08:46	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/23/24 08:46	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/23/24 08:46	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/23/24 08:46	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/23/24 08:46	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/23/24 08:46	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/23/24 08:46	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/23/24 08:46	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/23/24 08:46	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/23/24 08:46	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/23/24 08:46	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/23/24 08:46	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/23/24 08:46	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/23/24 08:46	1
Acetone	**6.25**	**J**	10.0	3.10	ug/L			05/23/24 08:46	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/23/24 08:46	1
Benzene	<0.220		0.500	0.220	ug/L			05/23/24 08:46	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/23/24 08:46	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/23/24 08:46	1
Bromoform	<0.780		5.00	0.780	ug/L			05/23/24 08:46	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/23/24 08:46	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/23/24 08:46	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/23/24 08:46	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/23/24 08:46	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/23/24 08:46	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/23/24 08:46	1
Chloroform	<1.30		3.00	1.30	ug/L			05/23/24 08:46	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/23/24 08:46	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/23/24 08:46	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/23/24 08:46	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/23/24 08:46	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/23/24 08:46	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/23/24 08:46	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/23/24 08:46	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/23/24 08:46	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/23/24 08:46	1
Styrene	<0.370		1.00	0.370	ug/L			05/23/24 08:46	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/23/24 08:46	1
Toluene	<0.430		1.00	0.430	ug/L			05/23/24 08:46	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/23/24 08:46	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/23/24 08:46	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/23/24 08:46	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/23/24 08:46	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/23/24 08:46	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/23/24 08:46	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/23/24 08:46	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/23/24 08:46	1

Client: AECOM
Job ID: 310-281530-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: MW-409B
Date Collected: 05/16/24 12:30
Date Received: 05/17/24 10:00

Lab Sample ID: 310-281530-1
Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*98*		*73 - 130*		*05/23/24 08:46*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*05/23/24 08:46*	*1*
4-Bromofluorobenzene (Surr)	*105*		*80 - 120*		*05/23/24 08:46*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		05/20/24 09:30	05/29/24 20:55	1
Arsenic	**3.83**		2.00	0.530	ug/L		05/20/24 09:30	05/29/24 20:55	1
Barium	**35.8**		2.00	0.660	ug/L		05/20/24 09:30	05/29/24 20:55	1
Beryllium	<0.330		1.00	0.330	ug/L		05/20/24 09:30	05/29/24 20:55	1
Cadmium	<0.100		0.200	0.100	ug/L		05/20/24 09:30	05/30/24 18:29	1
Chromium	<1.20		5.00	1.20	ug/L		05/20/24 09:30	05/29/24 20:55	1
Cobalt	**11.1**		0.500	0.170	ug/L		05/20/24 09:30	05/29/24 20:55	1
Copper	**5.00**		5.00	1.80	ug/L		05/20/24 09:30	05/29/24 20:55	1
Lead	**0.330**	**J**	0.500	0.260	ug/L		05/20/24 09:30	05/29/24 20:55	1
Nickel	**9.19**		5.00	2.10	ug/L		05/20/24 09:30	05/29/24 20:55	1
Selenium	**1.66**	**J**	5.00	1.40	ug/L		05/20/24 09:30	05/29/24 20:55	1
Silver	**0.863**	**J**	1.00	0.500	ug/L		05/20/24 09:30	05/29/24 20:55	1
Thallium	<0.570		1.00	0.570	ug/L		05/20/24 09:30	05/29/24 20:55	1
Vanadium	<1.10		5.00	1.10	ug/L		05/20/24 09:30	05/29/24 20:55	1
Zinc	<9.70		20.0	9.70	ug/L		05/20/24 09:30	05/29/24 20:55	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**38.0**		15.0	11.1	mg/L			05/22/24 09:48	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**18.42**				NTU			05/16/24 12:30	1

Client: AECOM
Job ID: 310-281530-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-410B
Lab Sample ID: 310-281530-2

Date Collected: 05/16/24 11:30
Matrix: Water

Date Received: 05/17/24 10:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/23/24 09:08	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/23/24 09:08	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/23/24 09:08	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/23/24 09:08	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/23/24 09:08	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/23/24 09:08	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/23/24 09:08	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/23/24 09:08	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/23/24 09:08	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/23/24 09:08	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/23/24 09:08	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/23/24 09:08	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/23/24 09:08	1
2-Butanone (MEK)	**2.91**	**J**	10.0	2.10	ug/L			05/23/24 09:08	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/23/24 09:08	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/23/24 09:08	1
Acetone	**17.1**		10.0	3.10	ug/L			05/23/24 09:08	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/23/24 09:08	1
Benzene	**2.02**		0.500	0.220	ug/L			05/23/24 09:08	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/23/24 09:08	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/23/24 09:08	1
Bromoform	<0.780		5.00	0.780	ug/L			05/23/24 09:08	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/23/24 09:08	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/23/24 09:08	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/23/24 09:08	1
Chlorobenzene	**4.54**		1.00	0.400	ug/L			05/23/24 09:08	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/23/24 09:08	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/23/24 09:08	1
Chloroform	<1.30		3.00	1.30	ug/L			05/23/24 09:08	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/23/24 09:08	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/23/24 09:08	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/23/24 09:08	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/23/24 09:08	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/23/24 09:08	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/23/24 09:08	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/23/24 09:08	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/23/24 09:08	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/23/24 09:08	1
Styrene	<0.370		1.00	0.370	ug/L			05/23/24 09:08	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/23/24 09:08	1
Toluene	<0.430		1.00	0.430	ug/L			05/23/24 09:08	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/23/24 09:08	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/23/24 09:08	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/23/24 09:08	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/23/24 09:08	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/23/24 09:08	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/23/24 09:08	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/23/24 09:08	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/23/24 09:08	1

Client: AECOM
Job ID: 310-281530-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-410B
Lab Sample ID: 310-281530-2

Date Collected: 05/16/24 11:30
Matrix: Water

Date Received: 05/17/24 10:00

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*99*		*73 - 130*		*05/23/24 09:08*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*05/23/24 09:08*	*1*
4-Bromofluorobenzene (Surr)	*107*		*80 - 120*		*05/23/24 09:08*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		05/20/24 09:30	05/29/24 20:59	1
Arsenic	**11.8**		2.00	0.530	ug/L		05/20/24 09:30	05/29/24 20:59	1
Barium	**2750**		8.00	2.64	ug/L		05/20/24 09:30	05/30/24 18:32	4
Beryllium	<0.330		1.00	0.330	ug/L		05/20/24 09:30	05/29/24 20:59	1
Cadmium	<0.400		0.800	0.400	ug/L		05/20/24 09:30	05/30/24 18:32	4
Chromium	**4.13**	**J**	5.00	1.20	ug/L		05/20/24 09:30	05/29/24 20:59	1
Cobalt	**13.8**		0.500	0.170	ug/L		05/20/24 09:30	05/29/24 20:59	1
Copper	<1.80		5.00	1.80	ug/L		05/20/24 09:30	05/29/24 20:59	1
Lead	<0.260		0.500	0.260	ug/L		05/20/24 09:30	05/29/24 20:59	1
Nickel	**52.1**		5.00	2.10	ug/L		05/20/24 09:30	05/29/24 20:59	1
Selenium	<1.40		5.00	1.40	ug/L		05/20/24 09:30	05/29/24 20:59	1
Silver	<0.500		1.00	0.500	ug/L		05/20/24 09:30	05/29/24 20:59	1
Thallium	<0.570		1.00	0.570	ug/L		05/20/24 09:30	05/29/24 20:59	1
Vanadium	**1.76**	**J**	5.00	1.10	ug/L		05/20/24 09:30	05/29/24 20:59	1
Zinc	<9.70		20.0	9.70	ug/L		05/20/24 09:30	05/29/24 20:59	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**80.0**		15.0	11.1	mg/L			05/22/24 09:48	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**182.75**				NTU			05/16/24 11:30	1

Client: AECOM
Job ID: 310-281530-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Trip Blank
Lab Sample ID: 310-281530-3

Date Collected: 05/16/24 05:00
Matrix: Water
Date Received: 05/17/24 10:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/23/24 02:36	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/23/24 02:36	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/23/24 02:36	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/23/24 02:36	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/23/24 02:36	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/23/24 02:36	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/23/24 02:36	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/23/24 02:36	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/23/24 02:36	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/23/24 02:36	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/23/24 02:36	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/23/24 02:36	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/23/24 02:36	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/23/24 02:36	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/23/24 02:36	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/23/24 02:36	1
Acetone	<3.10		10.0	3.10	ug/L			05/23/24 02:36	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/23/24 02:36	1
Benzene	<0.220		0.500	0.220	ug/L			05/23/24 02:36	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/23/24 02:36	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/23/24 02:36	1
Bromoform	<0.780		5.00	0.780	ug/L			05/23/24 02:36	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/23/24 02:36	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/23/24 02:36	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/23/24 02:36	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/23/24 02:36	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/23/24 02:36	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/23/24 02:36	1
Chloroform	<1.30		3.00	1.30	ug/L			05/23/24 02:36	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/23/24 02:36	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/23/24 02:36	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/23/24 02:36	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/23/24 02:36	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/23/24 02:36	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/23/24 02:36	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/23/24 02:36	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/23/24 02:36	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/23/24 02:36	1
Styrene	<0.370		1.00	0.370	ug/L			05/23/24 02:36	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/23/24 02:36	1
Toluene	<0.430		1.00	0.430	ug/L			05/23/24 02:36	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/23/24 02:36	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/23/24 02:36	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/23/24 02:36	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/23/24 02:36	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/23/24 02:36	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/23/24 02:36	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/23/24 02:36	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/23/24 02:36	1

Client: AECOM
Job ID: 310-281530-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Trip Blank
Lab Sample ID: 310-281530-3
Date Collected: 05/16/24 05:00
Matrix: Water
Date Received: 05/17/24 10:00

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	97		73 - 130		05/23/24 02:36	1
Toluene-d8 (Surr)	101		80 - 120		05/23/24 02:36	1
4-Bromofluorobenzene (Surr)	105		80 - 120		05/23/24 02:36	1

Client: AECOM
Job ID: 310-281530-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-220B
Lab Sample ID: 310-281530-4

Date Collected: 05/16/24 13:30
Matrix: Water
Date Received: 05/17/24 10:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/23/24 09:30	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/23/24 09:30	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/23/24 09:30	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/23/24 09:30	1
1,1-Dichloroethane	**0.940**	**J**	1.00	0.220	ug/L			05/23/24 09:30	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/23/24 09:30	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/23/24 09:30	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/23/24 09:30	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/23/24 09:30	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/23/24 09:30	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/23/24 09:30	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/23/24 09:30	1
1,4-Dichlorobenzene	**1.87**		1.00	0.230	ug/L			05/23/24 09:30	1
2-Butanone (MEK)	**5.29**	**J**	10.0	2.10	ug/L			05/23/24 09:30	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/23/24 09:30	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/23/24 09:30	1
Acetone	**10.8**		10.0	3.10	ug/L			05/23/24 09:30	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/23/24 09:30	1
Benzene	**2.29**		0.500	0.220	ug/L			05/23/24 09:30	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/23/24 09:30	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/23/24 09:30	1
Bromoform	<0.780		5.00	0.780	ug/L			05/23/24 09:30	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/23/24 09:30	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/23/24 09:30	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/23/24 09:30	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/23/24 09:30	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/23/24 09:30	1
Chloroethane	**2.09**	**J**	4.00	0.790	ug/L			05/23/24 09:30	1
Chloroform	<1.30		3.00	1.30	ug/L			05/23/24 09:30	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/23/24 09:30	1
cis-1,2-Dichloroethene	**0.474**	**J**	1.00	0.210	ug/L			05/23/24 09:30	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/23/24 09:30	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/23/24 09:30	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/23/24 09:30	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/23/24 09:30	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/23/24 09:30	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/23/24 09:30	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/23/24 09:30	1
Styrene	<0.370		1.00	0.370	ug/L			05/23/24 09:30	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/23/24 09:30	1
Toluene	<0.430		1.00	0.430	ug/L			05/23/24 09:30	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/23/24 09:30	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/23/24 09:30	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/23/24 09:30	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/23/24 09:30	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/23/24 09:30	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/23/24 09:30	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/23/24 09:30	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/23/24 09:30	1

Client Sample ID: OW-220B
Date Collected: 05/16/24 13:30
Date Received: 05/17/24 10:00

Lab Sample ID: 310-281530-4
Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*100*		*73 - 130*		*05/23/24 09:30*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*05/23/24 09:30*	*1*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*		*05/23/24 09:30*	*1*

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	<0.239		0.573	0.239	ug/L		05/23/24 18:46	05/24/24 19:58	1
Silvex (2,4,5-TP)	**0.372**		0.0477	0.0210	ug/L		05/23/24 18:46	05/24/24 19:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*90*	*p*	*34 - 142*	*05/23/24 18:46*	*05/24/24 19:58*	*1*
DCAA	*275*	*S1+*	*34 - 142*	*05/23/24 18:46*	*05/24/24 19:58*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		05/20/24 09:30	05/29/24 21:02	1
Arsenic	**14.4**		2.00	0.530	ug/L		05/20/24 09:30	05/29/24 21:02	1
Barium	**904**		2.00	0.660	ug/L		05/20/24 09:30	05/29/24 21:02	1
Beryllium	<0.330		1.00	0.330	ug/L		05/20/24 09:30	05/29/24 21:02	1
Cadmium	<0.100		0.200	0.100	ug/L		05/20/24 09:30	05/30/24 18:36	1
Chromium	**7.00**		5.00	1.20	ug/L		05/20/24 09:30	05/29/24 21:02	1
Cobalt	**21.7**		0.500	0.170	ug/L		05/20/24 09:30	05/29/24 21:02	1
Copper	<1.80		5.00	1.80	ug/L		05/20/24 09:30	05/29/24 21:02	1
Lead	<0.260		0.500	0.260	ug/L		05/20/24 09:30	05/29/24 21:02	1
Nickel	**135**		5.00	2.10	ug/L		05/20/24 09:30	05/29/24 21:02	1
Selenium	<1.40		5.00	1.40	ug/L		05/20/24 09:30	05/29/24 21:02	1
Silver	<0.500		1.00	0.500	ug/L		05/20/24 09:30	05/29/24 21:02	1
Thallium	<0.570		1.00	0.570	ug/L		05/20/24 09:30	05/29/24 21:02	1
Vanadium	**1.37**	**J**	5.00	1.10	ug/L		05/20/24 09:30	05/29/24 21:02	1
Zinc	<9.70		20.0	9.70	ug/L		05/20/24 09:30	05/29/24 21:02	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**115**		15.0	11.1	mg/L			05/22/24 09:48	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**4.72**				NTU			05/16/24 13:30	1

Client: AECOM
Job ID: 310-281530-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: MW-320B
Lab Sample ID: 310-281530-5

Date Collected: 05/16/24 15:00
Matrix: Water

Date Received: 05/17/24 10:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/23/24 08:25	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/23/24 08:25	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/23/24 08:25	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/23/24 08:25	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/23/24 08:25	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/23/24 08:25	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/23/24 08:25	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/23/24 08:25	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/23/24 08:25	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/23/24 08:25	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/23/24 08:25	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/23/24 08:25	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/23/24 08:25	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/23/24 08:25	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/23/24 08:25	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/23/24 08:25	1
Acetone	<3.10		10.0	3.10	ug/L			05/23/24 08:25	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/23/24 08:25	1
Benzene	<0.220		0.500	0.220	ug/L			05/23/24 08:25	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/23/24 08:25	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/23/24 08:25	1
Bromoform	<0.780		5.00	0.780	ug/L			05/23/24 08:25	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/23/24 08:25	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/23/24 08:25	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/23/24 08:25	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/23/24 08:25	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/23/24 08:25	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/23/24 08:25	1
Chloroform	<1.30		3.00	1.30	ug/L			05/23/24 08:25	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/23/24 08:25	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/23/24 08:25	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/23/24 08:25	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/23/24 08:25	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/23/24 08:25	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/23/24 08:25	1
m,p-Xylene	**0.404**	**J**	2.00	0.380	ug/L			05/23/24 08:25	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/23/24 08:25	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/23/24 08:25	1
Styrene	<0.370		1.00	0.370	ug/L			05/23/24 08:25	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/23/24 08:25	1
Toluene	<0.430		1.00	0.430	ug/L			05/23/24 08:25	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/23/24 08:25	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/23/24 08:25	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/23/24 08:25	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/23/24 08:25	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/23/24 08:25	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/23/24 08:25	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/23/24 08:25	1
Xylenes, Total	**0.404**	**J**	3.00	0.400	ug/L			05/23/24 08:25	1

Client: AECOM
Job ID: 310-281530-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: MW-320B
Date Collected: 05/16/24 15:00
Date Received: 05/17/24 10:00

Lab Sample ID: 310-281530-5
Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*95*		*73 - 130*		*05/23/24 08:25*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*05/23/24 08:25*	*1*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*		*05/23/24 08:25*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		05/20/24 09:30	05/29/24 21:06	1
Arsenic	<0.530		2.00	0.530	ug/L		05/20/24 09:30	05/29/24 21:06	1
Barium	**235**		2.00	0.660	ug/L		05/20/24 09:30	05/29/24 21:06	1
Beryllium	<0.330		1.00	0.330	ug/L		05/20/24 09:30	05/29/24 21:06	1
Cadmium	<0.100		0.200	0.100	ug/L		05/20/24 09:30	05/30/24 18:39	1
Chromium	**83.3**		5.00	1.20	ug/L		05/20/24 09:30	05/29/24 21:06	1
Cobalt	**0.635**		0.500	0.170	ug/L		05/20/24 09:30	05/29/24 21:06	1
Copper	**2.38**	**J**	5.00	1.80	ug/L		05/20/24 09:30	05/29/24 21:06	1
Lead	<0.260		0.500	0.260	ug/L		05/20/24 09:30	05/29/24 21:06	1
Nickel	**31.6**		5.00	2.10	ug/L		05/20/24 09:30	05/29/24 21:06	1
Selenium	<1.40		5.00	1.40	ug/L		05/20/24 09:30	05/29/24 21:06	1
Silver	<0.500		1.00	0.500	ug/L		05/20/24 09:30	05/29/24 21:06	1
Thallium	<0.570		1.00	0.570	ug/L		05/20/24 09:30	05/29/24 21:06	1
Vanadium	**1.10**	**J**	5.00	1.10	ug/L		05/20/24 09:30	05/29/24 21:06	1
Zinc	<9.70		20.0	9.70	ug/L		05/20/24 09:30	05/29/24 21:06	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**5.13**		1.88	1.39	mg/L			05/22/24 09:48	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**19.41**				NTU			05/16/24 15:00	1

Client: AECOM
Job ID: 310-281530-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Equipment Blank-2
Lab Sample ID: 310-281530-6

Date Collected: 05/16/24 16:00
Matrix: Water
Date Received: 05/17/24 10:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/23/24 02:58	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/23/24 02:58	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/23/24 02:58	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/23/24 02:58	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/23/24 02:58	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/23/24 02:58	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/23/24 02:58	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/23/24 02:58	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/23/24 02:58	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/23/24 02:58	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/23/24 02:58	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/23/24 02:58	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/23/24 02:58	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/23/24 02:58	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/23/24 02:58	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/23/24 02:58	1
Acetone	**7.48**	**J**	10.0	3.10	ug/L			05/23/24 02:58	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/23/24 02:58	1
Benzene	<0.220		0.500	0.220	ug/L			05/23/24 02:58	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/23/24 02:58	1
Bromodichloromethane	**0.830**	**J**	1.00	0.390	ug/L			05/23/24 02:58	1
Bromoform	<0.780		5.00	0.780	ug/L			05/23/24 02:58	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/23/24 02:58	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/23/24 02:58	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/23/24 02:58	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/23/24 02:58	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/23/24 02:58	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/23/24 02:58	1
Chloroform	**2.10**	**J**	3.00	1.30	ug/L			05/23/24 02:58	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/23/24 02:58	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/23/24 02:58	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/23/24 02:58	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/23/24 02:58	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/23/24 02:58	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/23/24 02:58	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/23/24 02:58	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/23/24 02:58	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/23/24 02:58	1
Styrene	<0.370		1.00	0.370	ug/L			05/23/24 02:58	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/23/24 02:58	1
Toluene	**0.580**	**J**	1.00	0.430	ug/L			05/23/24 02:58	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/23/24 02:58	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/23/24 02:58	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/23/24 02:58	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/23/24 02:58	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/23/24 02:58	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/23/24 02:58	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/23/24 02:58	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/23/24 02:58	1

Client: AECOM
Job ID: 310-281530-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Equipment Blank-2
Lab Sample ID: 310-281530-6

Date Collected: 05/16/24 16:00
Matrix: Water
Date Received: 05/17/24 10:00

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*99*		*73 - 130*		*05/23/24 02:58*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*05/23/24 02:58*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*		*05/23/24 02:58*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		05/20/24 09:30	05/29/24 21:09	1
Arsenic	<0.530		2.00	0.530	ug/L		05/20/24 09:30	05/29/24 21:09	1
Barium	<0.660		2.00	0.660	ug/L		05/20/24 09:30	05/29/24 21:09	1
Beryllium	<0.330		1.00	0.330	ug/L		05/20/24 09:30	05/29/24 21:09	1
Cadmium	<0.100		0.200	0.100	ug/L		05/20/24 09:30	05/30/24 18:43	1
Chromium	<1.20		5.00	1.20	ug/L		05/20/24 09:30	05/29/24 21:09	1
Cobalt	<0.170		0.500	0.170	ug/L		05/20/24 09:30	05/29/24 21:09	1
Copper	<1.80		5.00	1.80	ug/L		05/20/24 09:30	05/29/24 21:09	1
Lead	<0.260		0.500	0.260	ug/L		05/20/24 09:30	05/29/24 21:09	1
Nickel	<2.10		5.00	2.10	ug/L		05/20/24 09:30	05/29/24 21:09	1
Selenium	<1.40		5.00	1.40	ug/L		05/20/24 09:30	05/29/24 21:09	1
Silver	<0.500		1.00	0.500	ug/L		05/20/24 09:30	05/29/24 21:09	1
Thallium	<0.570		1.00	0.570	ug/L		05/20/24 09:30	05/29/24 21:09	1
Vanadium	<1.10		5.00	1.10	ug/L		05/20/24 09:30	05/29/24 21:09	1
Zinc	<9.70		20.0	9.70	ug/L		05/20/24 09:30	05/29/24 21:09	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	<1.39		1.88	1.39	mg/L			05/21/24 10:12	1

Client: AECOM
Job ID: 310-281530-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: MW-320FD
Lab Sample ID: 310-281530-7
Date Collected: 05/16/24 15:00
Matrix: Water
Date Received: 05/17/24 10:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/23/24 03:19	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/23/24 03:19	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/23/24 03:19	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/23/24 03:19	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/23/24 03:19	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/23/24 03:19	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/23/24 03:19	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/23/24 03:19	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/23/24 03:19	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/23/24 03:19	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/23/24 03:19	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/23/24 03:19	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/23/24 03:19	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/23/24 03:19	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/23/24 03:19	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/23/24 03:19	1
Acetone	<3.10		10.0	3.10	ug/L			05/23/24 03:19	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/23/24 03:19	1
Benzene	<0.220		0.500	0.220	ug/L			05/23/24 03:19	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/23/24 03:19	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/23/24 03:19	1
Bromoform	<0.780		5.00	0.780	ug/L			05/23/24 03:19	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/23/24 03:19	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/23/24 03:19	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/23/24 03:19	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/23/24 03:19	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/23/24 03:19	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/23/24 03:19	1
Chloroform	<1.30		3.00	1.30	ug/L			05/23/24 03:19	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/23/24 03:19	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/23/24 03:19	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/23/24 03:19	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/23/24 03:19	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/23/24 03:19	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/23/24 03:19	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/23/24 03:19	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/23/24 03:19	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/23/24 03:19	1
Styrene	<0.370		1.00	0.370	ug/L			05/23/24 03:19	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/23/24 03:19	1
Toluene	<0.430		1.00	0.430	ug/L			05/23/24 03:19	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/23/24 03:19	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/23/24 03:19	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/23/24 03:19	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/23/24 03:19	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/23/24 03:19	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/23/24 03:19	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/23/24 03:19	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/23/24 03:19	1

Client: AECOM
Job ID: 310-281530-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: MW-320FD
Lab Sample ID: 310-281530-7
Date Collected: 05/16/24 15:00
Matrix: Water
Date Received: 05/17/24 10:00

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*101*		*73 - 130*		*05/23/24 03:19*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*05/23/24 03:19*	*1*
4-Bromofluorobenzene (Surr)	*107*		*80 - 120*		*05/23/24 03:19*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		05/20/24 09:30	05/29/24 21:28	1
Arsenic	<0.530		2.00	0.530	ug/L		05/20/24 09:30	05/29/24 21:28	1
Barium	**236**		2.00	0.660	ug/L		05/20/24 09:30	05/29/24 21:28	1
Beryllium	<0.330		1.00	0.330	ug/L		05/20/24 09:30	05/29/24 21:28	1
Cadmium	<0.100		0.200	0.100	ug/L		05/20/24 09:30	05/30/24 18:47	1
Chromium	**91.6**		5.00	1.20	ug/L		05/20/24 09:30	05/29/24 21:28	1
Cobalt	**0.711**		0.500	0.170	ug/L		05/20/24 09:30	05/29/24 21:28	1
Copper	**2.49**	**J**	5.00	1.80	ug/L		05/20/24 09:30	05/29/24 21:28	1
Lead	<0.260		0.500	0.260	ug/L		05/20/24 09:30	05/29/24 21:28	1
Nickel	**33.4**		5.00	2.10	ug/L		05/20/24 09:30	05/29/24 21:28	1
Selenium	<1.40		5.00	1.40	ug/L		05/20/24 09:30	05/29/24 21:28	1
Silver	<0.500		1.00	0.500	ug/L		05/20/24 09:30	05/29/24 21:28	1
Thallium	<0.570		1.00	0.570	ug/L		05/20/24 09:30	05/29/24 21:28	1
Vanadium	**1.18**	**J**	5.00	1.10	ug/L		05/20/24 09:30	05/29/24 21:28	1
Zinc	<9.70		20.0	9.70	ug/L		05/20/24 09:30	05/29/24 21:28	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**2.00**		1.88	1.39	mg/L			05/21/24 10:12	1

Definitions/Glossary

Client: AECOM
Job ID: 310-281530-1
Project/Site: Black Hawk County Landfill (IDNR)

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC Semi VOA

Qualifier	Qualifier Description
p	The %RPD between the primary and confirmation column/detector is >40%. The lower value has been reported.
S1+	Surrogate recovery exceeds control limits, high biased.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Surrogate Summary

Client: AECOM
Project/Site: Black Hawk County Landfill (IDNR)

Job ID: 310-281530-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-281530-1	MW-409B	98	100	105
310-281530-2	OW-410B	99	100	107
310-281530-3	Trip Blank	97	101	105
310-281530-4	OW-220B	100	102	103
310-281530-5	MW-320B	95	100	103
310-281530-6	Equipment Blank-2	99	97	102
310-281530-7	MW-320FD	101	99	107
LCS 310-422420/6	Lab Control Sample	96	105	102
LCS 310-422420/7	Lab Control Sample	98	101	105
MB 310-422420/5	Method Blank	98	102	109

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8151A - Herbicides (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		DCPAA1	DCPAA2
Lab Sample ID	Client Sample ID	(34-142)	(34-142)
310-281530-4	OW-220B	90 p	275 S1+

Surrogate Legend

DCPAA = DCAA

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 310-422420/5
Matrix: Water
Analysis Batch: 422420

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/23/24 01:30	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/23/24 01:30	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/23/24 01:30	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/23/24 01:30	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/23/24 01:30	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/23/24 01:30	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/23/24 01:30	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/23/24 01:30	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/23/24 01:30	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/23/24 01:30	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/23/24 01:30	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/23/24 01:30	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/23/24 01:30	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/23/24 01:30	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/23/24 01:30	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/23/24 01:30	1
Acetone	<3.10		10.0	3.10	ug/L			05/23/24 01:30	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/23/24 01:30	1
Benzene	<0.220		0.500	0.220	ug/L			05/23/24 01:30	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/23/24 01:30	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/23/24 01:30	1
Bromoform	<0.780		5.00	0.780	ug/L			05/23/24 01:30	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/23/24 01:30	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/23/24 01:30	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/23/24 01:30	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/23/24 01:30	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/23/24 01:30	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/23/24 01:30	1
Chloroform	<1.30		3.00	1.30	ug/L			05/23/24 01:30	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/23/24 01:30	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/23/24 01:30	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/23/24 01:30	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/23/24 01:30	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/23/24 01:30	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/23/24 01:30	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/23/24 01:30	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/23/24 01:30	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/23/24 01:30	1
Styrene	<0.370		1.00	0.370	ug/L			05/23/24 01:30	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/23/24 01:30	1
Toluene	<0.430		1.00	0.430	ug/L			05/23/24 01:30	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/23/24 01:30	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/23/24 01:30	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/23/24 01:30	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/23/24 01:30	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/23/24 01:30	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/23/24 01:30	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/23/24 01:30	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-422420/5
Matrix: Water
Analysis Batch: 422420

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/23/24 01:30	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*98*		*73 - 130*		*05/23/24 01:30*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*05/23/24 01:30*	*1*
4-Bromofluorobenzene (Surr)	*109*		*80 - 120*		*05/23/24 01:30*	*1*

Lab Sample ID: LCS 310-422420/6
Matrix: Water
Analysis Batch: 422420

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	20.0	18.17		ug/L		91	71 - 120
1,1,1-Trichloroethane	20.0	17.80		ug/L		89	73 - 129
1,1,2,2-Tetrachloroethane	20.0	18.94		ug/L		95	68 - 124
1,1,2-Trichloroethane	20.0	18.97		ug/L		95	73 - 123
1,1-Dichloroethane	20.0	18.89		ug/L		94	70 - 127
1,1-Dichloroethene	20.0	18.87		ug/L		94	63 - 132
1,2,3-Trichloropropane	20.0	17.83		ug/L		89	65 - 127
1,2-Dibromo-3-Chloropropane	20.0	18.57		ug/L		93	50 - 150
1,2-Dibromoethane (EDB)	20.0	17.95		ug/L		90	75 - 125
1,2-Dichlorobenzene	20.0	19.29		ug/L		96	74 - 120
1,2-Dichloroethane	20.0	17.74		ug/L		89	71 - 125
1,2-Dichloropropane	20.0	19.61		ug/L		98	73 - 124
1,4-Dichlorobenzene	20.0	18.91		ug/L		95	72 - 120
2-Butanone (MEK)	40.0	34.53		ug/L		86	50 - 150
2-Hexanone	40.0	37.29		ug/L		93	60 - 140
4-Methyl-2-pentanone (MIBK)	40.0	36.99		ug/L		92	60 - 139
Acetone	40.0	35.70		ug/L		89	50 - 150
Acrylonitrile	200	195.9		ug/L		98	50 - 150
Benzene	20.0	19.37		ug/L		97	72 - 124
Bromochloromethane	20.0	18.14		ug/L		91	73 - 130
Bromodichloromethane	20.0	17.89		ug/L		89	74 - 122
Bromoform	20.0	16.69		ug/L		83	61 - 122
Carbon disulfide	20.0	19.78		ug/L		99	59 - 135
Carbon tetrachloride	20.0	17.88		ug/L		89	67 - 132
Chlorobenzene	20.0	19.11		ug/L		96	76 - 120
Chlorodibromomethane	20.0	17.41		ug/L		87	71 - 121
Chloroform	20.0	18.02		ug/L		90	72 - 125
cis-1,2-Dichloroethene	20.0	18.52		ug/L		93	74 - 123
cis-1,3-Dichloropropene	20.0	18.74		ug/L		94	71 - 125
Dibromomethane	20.0	17.95		ug/L		90	74 - 125
Ethylbenzene	20.0	20.33		ug/L		102	74 - 122
Iodomethane	20.0	10.63		ug/L		53	10 - 150
Methylene Chloride	20.0	20.31		ug/L		102	50 - 150
Styrene	20.0	19.30		ug/L		96	74 - 121
Tetrachloroethene	20.0	18.14		ug/L		91	71 - 130
Toluene	20.0	18.60		ug/L		93	74 - 123

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-422420/6
Matrix: Water
Analysis Batch: 422420

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
trans-1,2-Dichloroethene	20.0	18.68		ug/L		93	70 - 126
trans-1,3-Dichloropropene	20.0	17.55		ug/L		88	69 - 123
trans-1,4-Dichloro-2-butene	20.0	16.53		ug/L		83	50 - 150
Trichloroethene	20.0	19.00		ug/L		95	72 - 126
Vinyl acetate	40.0	34.78		ug/L		87	50 - 150
Xylenes, Total	40.0	39.16		ug/L		98	73 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*96*		*73 - 130*
Toluene-d8 (Surr)	*105*		*80 - 120*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*

Lab Sample ID: LCS 310-422420/7
Matrix: Water
Analysis Batch: 422420

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	17.38		ug/L		87	23 - 150
Chloroethane	20.0	20.08		ug/L		100	54 - 136
Chloromethane	20.0	22.04		ug/L		110	38 - 150
Trichlorofluoromethane	20.0	18.65		ug/L		93	54 - 149
Vinyl chloride	20.0	21.02		ug/L		105	56 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*98*		*73 - 130*
Toluene-d8 (Surr)	*101*		*80 - 120*
4-Bromofluorobenzene (Surr)	*105*		*80 - 120*

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-422087/1-A
Matrix: Water
Analysis Batch: 423058

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 422087

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		05/20/24 09:30	05/29/24 20:15	1
Arsenic	<0.530		2.00	0.530	ug/L		05/20/24 09:30	05/29/24 20:15	1
Barium	<0.660		2.00	0.660	ug/L		05/20/24 09:30	05/29/24 20:15	1
Beryllium	<0.330		1.00	0.330	ug/L		05/20/24 09:30	05/29/24 20:15	1
Chromium	<1.20		5.00	1.20	ug/L		05/20/24 09:30	05/29/24 20:15	1
Cobalt	<0.170		0.500	0.170	ug/L		05/20/24 09:30	05/29/24 20:15	1
Copper	<1.80		5.00	1.80	ug/L		05/20/24 09:30	05/29/24 20:15	1
Lead	<0.260		0.500	0.260	ug/L		05/20/24 09:30	05/29/24 20:15	1
Nickel	<2.10		5.00	2.10	ug/L		05/20/24 09:30	05/29/24 20:15	1
Selenium	<1.40		5.00	1.40	ug/L		05/20/24 09:30	05/29/24 20:15	1
Silver	<0.500		1.00	0.500	ug/L		05/20/24 09:30	05/29/24 20:15	1
Thallium	<0.570		1.00	0.570	ug/L		05/20/24 09:30	05/29/24 20:15	1
Vanadium	<1.10		5.00	1.10	ug/L		05/20/24 09:30	05/29/24 20:15	1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 310-422087/1-A
Matrix: Water
Analysis Batch: 423058

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 422087

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	<9.70		20.0	9.70	ug/L		05/20/24 09:30	05/29/24 20:15	1

Lab Sample ID: MB 310-422087/1-A
Matrix: Water
Analysis Batch: 423173

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 422087

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	<0.100		0.200	0.100	ug/L		05/20/24 09:30	05/30/24 17:56	1

Lab Sample ID: LCS 310-422087/2-A
Matrix: Water
Analysis Batch: 423058

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 422087

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	200	203.0		ug/L		101	80 - 120
Arsenic	200	213.4		ug/L		107	80 - 120
Barium	100	105.4		ug/L		105	80 - 120
Beryllium	100	89.95		ug/L		90	80 - 120
Chromium	100	98.05		ug/L		98	80 - 120
Cobalt	100	95.23		ug/L		95	80 - 120
Copper	200	202.1		ug/L		101	80 - 120
Lead	200	201.4		ug/L		101	80 - 120
Nickel	200	197.3		ug/L		99	80 - 120
Selenium	400	382.8		ug/L		96	80 - 120
Silver	100	109.9		ug/L		110	80 - 120
Thallium	100	86.91		ug/L		87	80 - 120
Vanadium	100	96.79		ug/L		97	80 - 120
Zinc	200	191.1		ug/L		96	80 - 120

Lab Sample ID: LCS 310-422087/2-A
Matrix: Water
Analysis Batch: 423173

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 422087

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	100	94.83		ug/L		95	80 - 120

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: MB 310-422300/1
Matrix: Water
Analysis Batch: 422300

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<3.70		5.00	3.70	mg/L			05/21/24 10:12	1

Method: I-3765-85 - Residue, Non-filterable (TSS) (Continued)

Lab Sample ID: LCS 310-422300/2
Matrix: Water
Analysis Batch: 422300

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	100.0		mg/L		100	81 - 116

Lab Sample ID: MB 310-422414/1
Matrix: Water
Analysis Batch: 422414

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<3.70		5.00	3.70	mg/L			05/22/24 09:48	1

Lab Sample ID: LCS 310-422414/2
Matrix: Water
Analysis Batch: 422414

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	90.00		mg/L		90	81 - 116

Lab Sample ID: 310-281530-1 DU
Matrix: Water
Analysis Batch: 422414

Client Sample ID: MW-409B
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Suspended Solids	38.0		39.00		mg/L		3	35

QC Association Summary

Client: AECOM
Job ID: 310-281530-1
Project/Site: Black Hawk County Landfill (IDNR)

GC/MS VOA

Analysis Batch: 422420

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-281530-1	MW-409B	Total/NA	Water	8260D	
310-281530-2	OW-410B	Total/NA	Water	8260D	
310-281530-3	Trip Blank	Total/NA	Water	8260D	
310-281530-4	OW-220B	Total/NA	Water	8260D	
310-281530-5	MW-320B	Total/NA	Water	8260D	
310-281530-6	Equipment Blank-2	Total/NA	Water	8260D	
310-281530-7	MW-320FD	Total/NA	Water	8260D	
MB 310-422420/5	Method Blank	Total/NA	Water	8260D	
LCS 310-422420/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-422420/7	Lab Control Sample	Total/NA	Water	8260D	

GC Semi VOA

Prep Batch: 510025

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-281530-4	OW-220B	Total/NA	Water	8151A	

Analysis Batch: 510091

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-281530-4	OW-220B	Total/NA	Water	8151A	510025

Metals

Prep Batch: 422087

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-281530-1	MW-409B	Total/NA	Water	3005A	
310-281530-2	OW-410B	Total/NA	Water	3005A	
310-281530-4	OW-220B	Total/NA	Water	3005A	
310-281530-5	MW-320B	Total/NA	Water	3005A	
310-281530-6	Equipment Blank-2	Total/NA	Water	3005A	
310-281530-7	MW-320FD	Total/NA	Water	3005A	
MB 310-422087/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-422087/2-A	Lab Control Sample	Total/NA	Water	3005A	

Analysis Batch: 423058

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-281530-1	MW-409B	Total/NA	Water	6020B	422087
310-281530-2	OW-410B	Total/NA	Water	6020B	422087
310-281530-4	OW-220B	Total/NA	Water	6020B	422087
310-281530-5	MW-320B	Total/NA	Water	6020B	422087
310-281530-6	Equipment Blank-2	Total/NA	Water	6020B	422087
310-281530-7	MW-320FD	Total/NA	Water	6020B	422087
MB 310-422087/1-A	Method Blank	Total/NA	Water	6020B	422087
LCS 310-422087/2-A	Lab Control Sample	Total/NA	Water	6020B	422087

Analysis Batch: 423173

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-281530-1	MW-409B	Total/NA	Water	6020B	422087
310-281530-2	OW-410B	Total/NA	Water	6020B	422087
310-281530-4	OW-220B	Total/NA	Water	6020B	422087
310-281530-5	MW-320B	Total/NA	Water	6020B	422087
310-281530-6	Equipment Blank-2	Total/NA	Water	6020B	422087

Metals (Continued)

Analysis Batch: 423173 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-281530-7	MW-320FD	Total/NA	Water	6020B	422087
MB 310-422087/1-A	Method Blank	Total/NA	Water	6020B	422087
LCS 310-422087/2-A	Lab Control Sample	Total/NA	Water	6020B	422087

General Chemistry

Analysis Batch: 422300

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-281530-6	Equipment Blank-2	Total/NA	Water	I-3765-85	
310-281530-7	MW-320FD	Total/NA	Water	I-3765-85	
MB 310-422300/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-422300/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Analysis Batch: 422414

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-281530-1	MW-409B	Total/NA	Water	I-3765-85	
310-281530-2	OW-410B	Total/NA	Water	I-3765-85	
310-281530-4	OW-220B	Total/NA	Water	I-3765-85	
310-281530-5	MW-320B	Total/NA	Water	I-3765-85	
MB 310-422414/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-422414/2	Lab Control Sample	Total/NA	Water	I-3765-85	
310-281530-1 DU	MW-409B	Total/NA	Water	I-3765-85	

Field Service / Mobile Lab

Analysis Batch: 422183

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-281530-1	MW-409B	Total/NA	Water	Field Sampling	
310-281530-2	OW-410B	Total/NA	Water	Field Sampling	
310-281530-4	OW-220B	Total/NA	Water	Field Sampling	
310-281530-5	MW-320B	Total/NA	Water	Field Sampling	

Lab Chronicle

Client: AECOM
Job ID: 310-281530-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: MW-409B
Lab Sample ID: 310-281530-1
Date Collected: 05/16/24 12:30
Matrix: Water
Date Received: 05/17/24 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	422420	WSE8	EET CF	05/23/24 08:46
Total/NA	Prep	3005A			422087	KM3E	EET CF	05/20/24 09:30
Total/NA	Analysis	6020B		1	423058	NFT2	EET CF	05/29/24 20:55
Total/NA	Prep	3005A			422087	KM3E	EET CF	05/20/24 09:30
Total/NA	Analysis	6020B		1	423173	NFT2	EET CF	05/30/24 18:29
Total/NA	Analysis	I-3765-85		1	422414	HE7K	EET CF	05/22/24 09:48
Total/NA	Analysis	Field Sampling		1	422183	BJ0R	EET CF	05/16/24 12:30

Client Sample ID: OW-410B
Lab Sample ID: 310-281530-2
Date Collected: 05/16/24 11:30
Matrix: Water
Date Received: 05/17/24 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	422420	WSE8	EET CF	05/23/24 09:08
Total/NA	Prep	3005A			422087	KM3E	EET CF	05/20/24 09:30
Total/NA	Analysis	6020B		1	423058	NFT2	EET CF	05/29/24 20:59
Total/NA	Prep	3005A			422087	KM3E	EET CF	05/20/24 09:30
Total/NA	Analysis	6020B		4	423173	NFT2	EET CF	05/30/24 18:32
Total/NA	Analysis	I-3765-85		1	422414	HE7K	EET CF	05/22/24 09:48
Total/NA	Analysis	Field Sampling		1	422183	BJ0R	EET CF	05/16/24 11:30

Client Sample ID: Trip Blank
Lab Sample ID: 310-281530-3
Date Collected: 05/16/24 05:00
Matrix: Water
Date Received: 05/17/24 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	422420	WSE8	EET CF	05/23/24 02:36

Client Sample ID: OW-220B
Lab Sample ID: 310-281530-4
Date Collected: 05/16/24 13:30
Matrix: Water
Date Received: 05/17/24 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	422420	WSE8	EET CF	05/23/24 09:30
Total/NA	Prep	8151A			510025	K2IL	ELLE	05/23/24 18:46
Total/NA	Analysis	8151A		1	510091	UAMZ	ELLE	05/24/24 19:58
Total/NA	Prep	3005A			422087	KM3E	EET CF	05/20/24 09:30
Total/NA	Analysis	6020B		1	423058	NFT2	EET CF	05/29/24 21:02
Total/NA	Prep	3005A			422087	KM3E	EET CF	05/20/24 09:30
Total/NA	Analysis	6020B		1	423173	NFT2	EET CF	05/30/24 18:36
Total/NA	Analysis	I-3765-85		1	422414	HE7K	EET CF	05/22/24 09:48
Total/NA	Analysis	Field Sampling		1	422183	BJ0R	EET CF	05/16/24 13:30

Lab Chronicle

Client: AECOM
Job ID: 310-281530-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: MW-320B
Lab Sample ID: 310-281530-5
Date Collected: 05/16/24 15:00
Matrix: Water
Date Received: 05/17/24 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	422420	WSE8	EET CF	05/23/24 08:25
Total/NA	Prep	3005A			422087	KM3E	EET CF	05/20/24 09:30
Total/NA	Analysis	6020B		1	423058	NFT2	EET CF	05/29/24 21:06
Total/NA	Prep	3005A			422087	KM3E	EET CF	05/20/24 09:30
Total/NA	Analysis	6020B		1	423173	NFT2	EET CF	05/30/24 18:39
Total/NA	Analysis	I-3765-85		1	422414	HE7K	EET CF	05/22/24 09:48
Total/NA	Analysis	Field Sampling		1	422183	BJ0R	EET CF	05/16/24 15:00

Client Sample ID: Equipment Blank-2
Lab Sample ID: 310-281530-6
Date Collected: 05/16/24 16:00
Matrix: Water
Date Received: 05/17/24 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	422420	WSE8	EET CF	05/23/24 02:58
Total/NA	Prep	3005A			422087	KM3E	EET CF	05/20/24 09:30
Total/NA	Analysis	6020B		1	423058	NFT2	EET CF	05/29/24 21:09
Total/NA	Prep	3005A			422087	KM3E	EET CF	05/20/24 09:30
Total/NA	Analysis	6020B		1	423173	NFT2	EET CF	05/30/24 18:43
Total/NA	Analysis	I-3765-85		1	422300	HE7K	EET CF	05/21/24 10:12

Client Sample ID: MW-320FD
Lab Sample ID: 310-281530-7
Date Collected: 05/16/24 15:00
Matrix: Water
Date Received: 05/17/24 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	422420	WSE8	EET CF	05/23/24 03:19
Total/NA	Prep	3005A			422087	KM3E	EET CF	05/20/24 09:30
Total/NA	Analysis	6020B		1	423058	NFT2	EET CF	05/29/24 21:28
Total/NA	Prep	3005A			422087	KM3E	EET CF	05/20/24 09:30
Total/NA	Analysis	6020B		1	423173	NFT2	EET CF	05/30/24 18:47
Total/NA	Analysis	I-3765-85		1	422300	HE7K	EET CF	05/21/24 10:12

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: AECOM
Job ID: 310-281530-1
Project/Site: Black Hawk County Landfill (IDNR)

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8260D		Water	m,p-Xylene
8260D		Water	o-Xylene
Field Sampling		Water	Field Turbidity

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Iowa	State	361	03-01-24 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: AECOM
Job ID: 310-281530-1
Project/Site: Black Hawk County Landfill (IDNR)

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CF
8151A	Herbicides (GC)	SW846	ELLE
6020B	Metals (ICP/MS)	SW846	EET CF
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
Field Sampling	Field Sampling	EPA	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
5030B	Purge and Trap	SW846	EET CF
8151A	Extraction (Herbicides)	SW846	ELLE

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

eurofins | Environment Testing America

310-281530 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: Aecom

City/State: CITY Waterloo STATE IA Project:

Receipt Information

Date/Time Received: DATE 5/17/24 TIME 1000 Received By: MCH

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☐ Lab Courier ☐ Lab Field Services ☒ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☒ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☐ Yes ☒ No *If yes:* Cooler # _____ of _____

Cooler Custody Seals Present? ☐ Yes ☒ No *If yes:* Cooler custody seals intact? ☐ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☒ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☒ Yes ☐ No *If yes:* Which VOA samples are in cooler? ↓

All vials

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: Y Correction Factor (°C): 0.0

Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 2.0 Corrected Temp (°C): 2.0

Sample Container Temperature

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE: If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

Eurofins Cedar Falls
3019 Venture Way

Cedar Falls, IA 50613
phone 319 277.2401 fax 319.277 2425

Chain of Custody Record

eurofins Environment Testing America

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other IDNR

Eurofins Environment Testing America

Client Contact	Project Manager: Chris Oelkers	Site Contact:	Date: 5-17-24	COC No
AECOM	Email Christopher Oelkers@aecom.com	Lab Contact:	Carrier:	1 of 2 COCs
501 Sycamore Street, Suite 222	Tel/Fax:319-296-6878			TALS Project #
Waterloo, IA 50703	Analysis Turnaround Time			Sampler
(319) 232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(xxx) xxx-xxxx FAX	TAT if different from Below _____			Walk-in Client:
Project Name Black Hawk Co IDNR	☑ 2 weeks			Lab Sampling
Site Black Hawk County Landfill	☐ 1 week			
P O #	☐ 2 days			Job / SDG No
	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Appendix I, TSS	Appendix II, TSS	2,4-D	4,4'-DDD	beta-BHC	delta BHC	Endosulfan I	Endosulfan sulfate	Endrin aldehyde	Silvex	Sulfide	Sample Specific Notes
OW-401B			G	GW		N		X		X		X	X		X	X	X	X	
OW-402B			G	GW		N		X											
MW-409B	4-16-24	1230	G	GW	5	N		X											Turbidity - 18.42 NTU
OW-410B	4-16-24	1130	G	GW	5	N		X											Turbidity - 182.75 NTU
OW-411B			G	GW		N		X											
OW-412B			G	GW		N		X											
OW-413B			G	GW		N		X											
OW-414B			G	GW		N		X											
MW-501B			G	GW		N		X											
MW-602B			G	GW		N		X											
MW-602B-FD			G	GW		N		X											
Trip Blank	4-16-24	0500	G	W	2	N		X											

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No		Cooler Temp (°C) Obs'd._____ Corr'd._____ Therm ID No._____		
Relinquished by: Ben Porter	Company: Aecom	Date/Time: 5-17-24	Received by: MA	Company:	Date/Time: 5-17-24 1000
Relinquished by:	Company:	Date/Time	Received by:	Company:	Date/Time
Relinquished by:	Company:	Date/Time	Received in Laboratory by:	Company:	Date/Time

6/4/2024

Eurofins Cedar Falls
3019 Venture Way

Cedar Falls, IA 50613
phone 319 277.2401 fax 319.277 2425

Chain of Custody Record

eurofins Environment Testing America

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other IDNR

Eurofins Environment Testing America

Client Contact	**Project Manager: Chris Oelkers**	COC No
AECOM	Email Christopher Oelkers@aecom.com	**Site Contact:** / **Date: 5-17-24**	2 of 2 COCs
501 Sycamore Street, Suite 222	**Tel/Fax:319-296-6878**	**Lab Contact:** / **Carrier:**	TALS Project #
Waterloo, IA 50703	**Analysis Turnaround Time** ☑ CALENDAR DAYS ☐ WORKING DAYS		Sampler
(319) 232-6531 Phone	TAT if different from Below ☑ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day		**For Lab Use Only:** Walk-in Client: / Lab Sampling
(xxx) xxx-xxxx FAX			
Project Name Black Hawk Co IDNR			Job / SDG No
Site Black Hawk County Landfill			
P O #			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Appendix I, TSS	Appendix II, TSS	2,4-D	4,4'-DDD	beta-BHC	delta BHC	Endosulfan I	Endosulfan sulfate	Endrin aldehyde	Silvex	Sulfide							Sample Specific Notes
OW-220B	5-16-24	1330	G	GW	7	N		X		X							X								Turbidity - 4.72
OW-221B			G	GW		N		X																	
OW-222B			G	GW		N		X																	
OW-223B			G	GW		N		X																	
OW-224B			G	GW		N		X																	
OW-225B			G	GW		N		X																	
OW-226B			G	GW		N		X										X							
OW-227B			G	GW		N		X										X							
MW-319B			G	GW		N		X																	
MW-320B	5-16-24	1500	G	GW	5	N		X																	Turbidity - 19.41 NTU
Equipment Blank-2	5-16-24	1600	G	GW	5	N		X																	
[redacted] MW-320FD	5-16-24	1500	G	GW	5	N		X																	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No | Cooler Temp (°C) Obs'd._____ Corr'd _____ | Therm ID No ._____

Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Ben Porter	Aecom	5-17-24	ML		5-17-24 1000
Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Relinquished by	Company	Date/Time	Received in Laboratory by	Company	Date/Time

6/4/2024

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone: 319-277-2401 Fax: 319-277-2425

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Bindert, Zach T	Carrier Tracking No(s):	COC No: 310-72552.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Zach.Bindert@et.eurofinsus.com	State of Origin: Iowa	Page: Page 1 of 1
Company: Eurofins Lancaster Laboratories Environm		Accreditations Required (See note): State - Iowa; State Program - Iowa		Job #: 310-281530-1
Address: 2425 New Holland Pike, ,	Due Date Requested: 6/3/2024			Preservation Codes: -
City: Lancaster	TAT Requested (days):			
State, Zip: PA, 17601				
Phone: 717-656-2300(Tel)	PO #:			
Email:	WO #:			
Project Name: Black Hawk County Landfill (IDNR)	Project #: 31017149			
Site: 310 - Black Hawk County (IDNR)	SSOW#:			Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8151A/8151A_AP (MOD) 2,4-D and Silvex	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
OW-220B (310-281530-4)	5/16/24	13:30 Central		Water			X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing North Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing North Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing North Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing North Central, LLC.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
NJ	[signature]	5/17/24 1450				
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time:	Company	Received by: [signature]	Date/Time: 5/18/24 9:45	Company ECET

Custody Seals Intact: ∆ Yes ∆ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: R: 6.2 5.9 C: 5.8 5.5

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-281530-1

Login Number: 281530
List Number: 1
Creator: Costello, Mackenzie K

List Source: Eurofins Cedar Falls

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-281530-1

Login Number: 281530
List Number: 2
Creator: Santiago, Nathaniel

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC
List Creation: 05/18/24 11:21 AM

Question	Answer	Comment
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature acceptable,where thermal pres is required(</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV:Container Temp acceptable,where thermal pres is required (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
Sample custody seals are intact.	N/A	
VOA sample vials do not have headspace >6mm in diameter (none, if from WV)?	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Chris Oelkers
AECOM
501 Sycamore Street
Suite #222
Waterloo, Iowa 50703

Generated 6/5/2024 3:34:20 PM Revision 1

JOB DESCRIPTION

Black Hawk County Landfill (IDNR)

JOB NUMBER

310-281290-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



Generated
6/5/2024 3:34:20 PM
Revision 1

Authorized for release by
Zach Bindert, Client Service Manager
Zach.Bindert@et.eurofinsus.com
(319)277-2401

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Job Narrative
310-281290-1

REVISION

The report being provided is a revision of the original report sent on 5/30/2024. The report (revision 1) is being revised due to This report was revised 6/03/2024. Missing Delta BHC from the Pesticide List..

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 5/15/2024 9:30 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 7.4°C.

GC/MS VOA
Method 8260D: The continuing calibration verification (CCV) associated with batch 310-422205 recovered above the upper control limit for Vinyl Chloride (22.2 %D). The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated sample is impacted: (CCV 310-422205/4).

Method 8260D: The method blank for analytical batch 310-422205 contained Vinyl Chloride above the method detection limit. This target analyte concentration was less than the reporting limit (RL) in the method blank; therefore, re-extraction and/or re-analysis of samples was not performed.

Method 8260D: The continuing calibration verification (CCV) associated with batch 310-422207 recovered above the upper control limit for 4-Methyl-2-pentanone (MIBK) (20.5%D) . The laboratory control sample associated with this CCV was within CCV criteria for the affected analytes; therefore, the data have been reported. The associated sample is impacted: (CCV 310-422207/3).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Pesticides
Method 8081B: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 310-422219. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

Method 8081B: The continuing calibration verification (CCV) associated with batch 310-422812 recovered above the upper control limit for Endrin aldehyde. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
Method 6020B: The reference method requires samples to be preserved to a pH of <2. The following sample was received with insufficient preservation at a pH of >2: OW-401B (310-281290-6). The sample(s) was preserved to the appropriate pH in the laboratory.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Field Service / Mobile Lab
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Sample Summary

Client: AECOM
Job ID: 310-281290-1
Project/Site: Black Hawk County Landfill (IDNR)

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-281290-1	MW-603B	Groundwater	05/14/24 14:00	05/15/24 09:30
310-281290-2	GUW2-1	Groundwater	05/14/24 13:30	05/15/24 09:30
310-281290-3	GUW2-1-FD	Groundwater	05/14/24 13:30	05/15/24 09:30
310-281290-4	OW-114B	Groundwater	05/14/24 12:00	05/15/24 09:30
310-281290-5	OW-216BR	Groundwater	05/14/24 13:00	05/15/24 09:30
310-281290-6	OW-401B	Groundwater	05/14/24 10:30	05/15/24 09:30
310-281290-7	Trip Blank	Water	05/14/24 00:00	05/15/24 09:30

Detection Summary

Client: AECOM
Job ID: 310-281290-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: MW-603B — Lab Sample ID: 310-281290-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.633	J	2.00	0.530	ug/L	1		6020B	Total/NA
Barium	38.6		2.00	0.660	ug/L	1		6020B	Total/NA
Field Turbidity	1.86				NTU	1		Field Sampling	Total/NA

Client Sample ID: GUW2-1 — Lab Sample ID: 310-281290-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	10.2		2.00	0.530	ug/L	1		6020B	Total/NA
Barium	246		2.00	0.660	ug/L	1		6020B	Total/NA
Cobalt	2.08		0.500	0.170	ug/L	1		6020B	Total/NA
Total Suspended Solids	25.0		7.50	5.55	mg/L	1		I-3765-85	Total/NA
Field Turbidity	9.74				NTU	1		Field Sampling	Total/NA

Client Sample ID: GUW2-1-FD — Lab Sample ID: 310-281290-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	0.224	J	1.00	0.180	ug/L	1		8260D	Total/NA
Arsenic	10.4		2.00	0.530	ug/L	1		6020B	Total/NA
Barium	247		2.00	0.660	ug/L	1		6020B	Total/NA
Cobalt	2.11		0.500	0.170	ug/L	1		6020B	Total/NA
Total Suspended Solids	26.5		7.50	5.55	mg/L	1		I-3765-85	Total/NA

Client Sample ID: OW-114B — Lab Sample ID: 310-281290-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	55.8		2.00	0.660	ug/L	1		6020B	Total/NA
Chromium	1.93	J	5.00	1.20	ug/L	1		6020B	Total/NA
Cobalt	0.830		0.500	0.170	ug/L	1		6020B	Total/NA
Copper	2.93	J	5.00	1.80	ug/L	1		6020B	Total/NA
Nickel	13.0		5.00	2.10	ug/L	1		6020B	Total/NA
Total Suspended Solids	1.88		1.88	1.39	mg/L	1		I-3765-85	Total/NA
Field Turbidity	19.11				NTU	1		Field Sampling	Total/NA

Client Sample ID: OW-216BR — Lab Sample ID: 310-281290-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	222		2.00	0.660	ug/L	1		6020B	Total/NA
Total Suspended Solids	2.88		1.88	1.39	mg/L	1		I-3765-85	Total/NA
Field Turbidity	3.71				NTU	1		Field Sampling	Total/NA

Client Sample ID: OW-401B — Lab Sample ID: 310-281290-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dichlorobenzene	1.22		1.00	0.230	ug/L	1		8260D	Total/NA
Acetone	9.57	J	10.0	3.10	ug/L	1		8260D	Total/NA
Benzene	3.79		0.500	0.220	ug/L	1		8260D	Total/NA
Chlorobenzene	0.473	J	1.00	0.400	ug/L	1		8260D	Total/NA
Chloroethane	0.998	J	4.00	0.790	ug/L	1		8260D	Total/NA
Arsenic	5.67		2.00	0.530	ug/L	1		6020B	Total/NA
Barium	1710		2.00	0.660	ug/L	1		6020B	Total/NA
Chromium	1.34	J	5.00	1.20	ug/L	1		6020B	Total/NA
Cobalt	2.50		0.500	0.170	ug/L	1		6020B	Total/NA
Nickel	47.0		5.00	2.10	ug/L	1		6020B	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: AECOM
Job ID: 310-281290-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-401B (Continued)
Lab Sample ID: 310-281290-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vanadium	2.55	J	5.00	1.10	ug/L	1		6020B	Total/NA
Total Suspended Solids	76.0		15.0	11.1	mg/L	1		I-3765-85	Total/NA
Field Turbidity	3.37				NTU	1		Field Sampling	Total/NA

Client Sample ID: Trip Blank
Lab Sample ID: 310-281290-7

No Detections.

This Detection Summary does not include radiochemical test results.

Client: AECOM
Job ID: 310-281290-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: MW-603B
Lab Sample ID: 310-281290-1
Date Collected: 05/14/24 14:00
Matrix: Groundwater
Date Received: 05/15/24 09:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/21/24 06:25	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/21/24 06:25	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/21/24 06:25	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/21/24 06:25	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/21/24 06:25	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/21/24 06:25	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/21/24 06:25	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/21/24 06:25	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/21/24 06:25	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/21/24 06:25	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/21/24 06:25	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/21/24 06:25	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/21/24 06:25	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/21/24 06:25	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/21/24 06:25	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/21/24 06:25	1
Acetone	<3.10		10.0	3.10	ug/L			05/21/24 06:25	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/21/24 06:25	1
Benzene	<0.220		0.500	0.220	ug/L			05/21/24 06:25	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/21/24 06:25	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/21/24 06:25	1
Bromoform	<0.780		5.00	0.780	ug/L			05/21/24 06:25	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/21/24 06:25	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/21/24 06:25	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/21/24 06:25	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/21/24 06:25	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/21/24 06:25	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/21/24 06:25	1
Chloroform	<1.30		3.00	1.30	ug/L			05/21/24 06:25	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/21/24 06:25	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/21/24 06:25	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/21/24 06:25	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/21/24 06:25	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/21/24 06:25	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/21/24 06:25	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/21/24 06:25	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/21/24 06:25	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/21/24 06:25	1
Styrene	<0.370		1.00	0.370	ug/L			05/21/24 06:25	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/21/24 06:25	1
Toluene	<0.430		1.00	0.430	ug/L			05/21/24 06:25	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/21/24 06:25	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/21/24 06:25	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/21/24 06:25	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/21/24 06:25	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/21/24 06:25	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/21/24 06:25	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/21/24 06:25	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/21/24 06:25	1

Client Sample ID: MW-603B
Date Collected: 05/14/24 14:00
Date Received: 05/15/24 09:30

Lab Sample ID: 310-281290-1
Matrix: Groundwater

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*115*		*73 - 130*		*05/21/24 06:25*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*05/21/24 06:25*	*1*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*05/21/24 06:25*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		05/17/24 09:30	05/24/24 20:43	1
Arsenic	**0.633**	**J**	2.00	0.530	ug/L		05/17/24 09:30	05/24/24 20:43	1
Barium	**38.6**		2.00	0.660	ug/L		05/17/24 09:30	05/24/24 20:43	1
Beryllium	<0.330		1.00	0.330	ug/L		05/17/24 09:30	05/24/24 20:43	1
Cadmium	<0.100		0.200	0.100	ug/L		05/17/24 09:30	05/24/24 20:43	1
Chromium	<1.20		5.00	1.20	ug/L		05/17/24 09:30	05/24/24 20:43	1
Cobalt	<0.170		0.500	0.170	ug/L		05/17/24 09:30	05/24/24 20:43	1
Copper	<1.80		5.00	1.80	ug/L		05/17/24 09:30	05/24/24 20:43	1
Lead	<0.260		0.500	0.260	ug/L		05/17/24 09:30	05/24/24 20:43	1
Nickel	<2.10		5.00	2.10	ug/L		05/17/24 09:30	05/29/24 21:19	1
Selenium	<1.40		5.00	1.40	ug/L		05/17/24 09:30	05/24/24 20:43	1
Silver	<0.500		1.00	0.500	ug/L		05/17/24 09:30	05/29/24 21:19	1
Thallium	<0.570		1.00	0.570	ug/L		05/17/24 09:30	05/24/24 20:43	1
Vanadium	<1.10		5.00	1.10	ug/L		05/17/24 09:30	05/24/24 20:43	1
Zinc	<9.70		20.0	9.70	ug/L		05/17/24 09:30	05/24/24 20:43	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	<1.39		1.88	1.39	mg/L			05/17/24 08:46	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**1.86**				NTU			05/14/24 14:00	1

Client: AECOM
Job ID: 310-281290-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: GUW2-1
Lab Sample ID: 310-281290-2
Date Collected: 05/14/24 13:30
Matrix: Groundwater
Date Received: 05/15/24 09:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/21/24 06:48	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/21/24 06:48	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/21/24 06:48	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/21/24 06:48	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/21/24 06:48	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/21/24 06:48	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/21/24 06:48	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/21/24 06:48	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/21/24 06:48	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/21/24 06:48	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/21/24 06:48	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/21/24 06:48	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/21/24 06:48	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/21/24 06:48	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/21/24 06:48	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/21/24 06:48	1
Acetone	<3.10		10.0	3.10	ug/L			05/21/24 06:48	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/21/24 06:48	1
Benzene	<0.220		0.500	0.220	ug/L			05/21/24 06:48	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/21/24 06:48	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/21/24 06:48	1
Bromoform	<0.780		5.00	0.780	ug/L			05/21/24 06:48	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/21/24 06:48	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/21/24 06:48	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/21/24 06:48	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/21/24 06:48	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/21/24 06:48	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/21/24 06:48	1
Chloroform	<1.30		3.00	1.30	ug/L			05/21/24 06:48	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/21/24 06:48	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/21/24 06:48	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/21/24 06:48	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/21/24 06:48	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/21/24 06:48	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/21/24 06:48	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/21/24 06:48	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/21/24 06:48	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/21/24 06:48	1
Styrene	<0.370		1.00	0.370	ug/L			05/21/24 06:48	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/21/24 06:48	1
Toluene	<0.430		1.00	0.430	ug/L			05/21/24 06:48	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/21/24 06:48	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/21/24 06:48	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/21/24 06:48	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/21/24 06:48	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/21/24 06:48	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/21/24 06:48	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/21/24 06:48	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/21/24 06:48	1

Client Sample ID: GUW2-1
Date Collected: 05/14/24 13:30
Date Received: 05/15/24 09:30

Lab Sample ID: 310-281290-2
Matrix: Groundwater

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*113*		*73 - 130*		*05/21/24 06:48*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*05/21/24 06:48*	*1*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*		*05/21/24 06:48*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		05/17/24 09:30	05/24/24 20:45	1
Arsenic	**10.2**		2.00	0.530	ug/L		05/17/24 09:30	05/24/24 20:45	1
Barium	**246**		2.00	0.660	ug/L		05/17/24 09:30	05/24/24 20:45	1
Beryllium	<0.330		1.00	0.330	ug/L		05/17/24 09:30	05/24/24 20:45	1
Cadmium	<0.100		0.200	0.100	ug/L		05/17/24 09:30	05/24/24 20:45	1
Chromium	<1.20		5.00	1.20	ug/L		05/17/24 09:30	05/24/24 20:45	1
Cobalt	**2.08**		0.500	0.170	ug/L		05/17/24 09:30	05/24/24 20:45	1
Copper	<1.80		5.00	1.80	ug/L		05/17/24 09:30	05/24/24 20:45	1
Lead	<0.260		0.500	0.260	ug/L		05/17/24 09:30	05/24/24 20:45	1
Nickel	<2.10		5.00	2.10	ug/L		05/17/24 09:30	05/29/24 21:22	1
Selenium	<1.40		5.00	1.40	ug/L		05/17/24 09:30	05/24/24 20:45	1
Silver	<0.500		1.00	0.500	ug/L		05/17/24 09:30	05/29/24 21:22	1
Thallium	<0.570		1.00	0.570	ug/L		05/17/24 09:30	05/24/24 20:45	1
Vanadium	<1.10		5.00	1.10	ug/L		05/17/24 09:30	05/24/24 20:45	1
Zinc	<9.70		20.0	9.70	ug/L		05/17/24 09:30	05/24/24 20:45	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**25.0**		7.50	5.55	mg/L			05/17/24 09:34	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**9.74**				NTU			05/14/24 13:30	1

Client: AECOM
Job ID: 310-281290-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: GUW2-1-FD
Lab Sample ID: 310-281290-3
Date Collected: 05/14/24 13:30
Matrix: Groundwater
Date Received: 05/15/24 09:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/21/24 07:11	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/21/24 07:11	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/21/24 07:11	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/21/24 07:11	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/21/24 07:11	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/21/24 07:11	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/21/24 07:11	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/21/24 07:11	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/21/24 07:11	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/21/24 07:11	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/21/24 07:11	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/21/24 07:11	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/21/24 07:11	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/21/24 07:11	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/21/24 07:11	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/21/24 07:11	1
Acetone	<3.10		10.0	3.10	ug/L			05/21/24 07:11	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/21/24 07:11	1
Benzene	<0.220		0.500	0.220	ug/L			05/21/24 07:11	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/21/24 07:11	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/21/24 07:11	1
Bromoform	<0.780		5.00	0.780	ug/L			05/21/24 07:11	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/21/24 07:11	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/21/24 07:11	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/21/24 07:11	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/21/24 07:11	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/21/24 07:11	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/21/24 07:11	1
Chloroform	<1.30		3.00	1.30	ug/L			05/21/24 07:11	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/21/24 07:11	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/21/24 07:11	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/21/24 07:11	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/21/24 07:11	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/21/24 07:11	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/21/24 07:11	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/21/24 07:11	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/21/24 07:11	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/21/24 07:11	1
Styrene	<0.370		1.00	0.370	ug/L			05/21/24 07:11	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/21/24 07:11	1
Toluene	<0.430		1.00	0.430	ug/L			05/21/24 07:11	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/21/24 07:11	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/21/24 07:11	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/21/24 07:11	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/21/24 07:11	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/21/24 07:11	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/21/24 07:11	1
Vinyl chloride	**0.224**	**J**	1.00	0.180	ug/L			05/23/24 23:44	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/21/24 07:11	1

Client: AECOM
Job ID: 310-281290-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: GUW2-1-FD
Lab Sample ID: 310-281290-3

Date Collected: 05/14/24 13:30
Matrix: Groundwater
Date Received: 05/15/24 09:30

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*116*		*73 - 130*		*05/21/24 07:11*	*1*
Dibromofluoromethane (Surr)	*112*		*73 - 130*		*05/23/24 23:44*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*05/21/24 07:11*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*05/23/24 23:44*	*1*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*05/21/24 07:11*	*1*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*05/23/24 23:44*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		05/17/24 09:30	05/24/24 20:47	1
Arsenic	**10.4**		2.00	0.530	ug/L		05/17/24 09:30	05/24/24 20:47	1
Barium	**247**		2.00	0.660	ug/L		05/17/24 09:30	05/24/24 20:47	1
Beryllium	<0.330		1.00	0.330	ug/L		05/17/24 09:30	05/24/24 20:47	1
Cadmium	<0.100		0.200	0.100	ug/L		05/17/24 09:30	05/24/24 20:47	1
Chromium	<1.20		5.00	1.20	ug/L		05/17/24 09:30	05/24/24 20:47	1
Cobalt	**2.11**		0.500	0.170	ug/L		05/17/24 09:30	05/24/24 20:47	1
Copper	<1.80		5.00	1.80	ug/L		05/17/24 09:30	05/24/24 20:47	1
Lead	<0.260		0.500	0.260	ug/L		05/17/24 09:30	05/24/24 20:47	1
Nickel	<2.10		5.00	2.10	ug/L		05/17/24 09:30	05/29/24 21:24	1
Selenium	<1.40		5.00	1.40	ug/L		05/17/24 09:30	05/24/24 20:47	1
Silver	<0.500		1.00	0.500	ug/L		05/17/24 09:30	05/29/24 21:24	1
Thallium	<0.570		1.00	0.570	ug/L		05/17/24 09:30	05/24/24 20:47	1
Vanadium	<1.10		5.00	1.10	ug/L		05/17/24 09:30	05/24/24 20:47	1
Zinc	<9.70		20.0	9.70	ug/L		05/17/24 09:30	05/24/24 20:47	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**26.5**		7.50	5.55	mg/L			05/17/24 08:46	1

Client: AECOM
Job ID: 310-281290-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-114B
Lab Sample ID: 310-281290-4

Date Collected: 05/14/24 12:00
Matrix: Groundwater
Date Received: 05/15/24 09:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/21/24 07:34	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/21/24 07:34	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/21/24 07:34	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/21/24 07:34	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/21/24 07:34	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/21/24 07:34	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/21/24 07:34	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/21/24 07:34	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/21/24 07:34	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/21/24 07:34	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/21/24 07:34	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/21/24 07:34	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/21/24 07:34	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/21/24 07:34	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/21/24 07:34	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/21/24 07:34	1
Acetone	<3.10		10.0	3.10	ug/L			05/21/24 07:34	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/21/24 07:34	1
Benzene	<0.220		0.500	0.220	ug/L			05/21/24 07:34	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/21/24 07:34	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/21/24 07:34	1
Bromoform	<0.780		5.00	0.780	ug/L			05/21/24 07:34	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/21/24 07:34	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/21/24 07:34	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/21/24 07:34	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/21/24 07:34	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/21/24 07:34	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/21/24 07:34	1
Chloroform	<1.30		3.00	1.30	ug/L			05/21/24 07:34	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/21/24 07:34	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/21/24 07:34	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/21/24 07:34	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/21/24 07:34	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/21/24 07:34	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/21/24 07:34	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/21/24 07:34	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/21/24 07:34	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/21/24 07:34	1
Styrene	<0.370		1.00	0.370	ug/L			05/21/24 07:34	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/21/24 07:34	1
Toluene	<0.430		1.00	0.430	ug/L			05/21/24 07:34	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/21/24 07:34	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/21/24 07:34	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/21/24 07:34	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/21/24 07:34	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/21/24 07:34	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/21/24 07:34	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/21/24 07:34	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/21/24 07:34	1

Client: AECOM
Job ID: 310-281290-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-114B
Date Collected: 05/14/24 12:00
Date Received: 05/15/24 09:30

Lab Sample ID: 310-281290-4
Matrix: Groundwater

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	*113*		*73 - 130*		*05/21/24 07:34*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*05/21/24 07:34*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*05/21/24 07:34*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		05/17/24 09:30	05/24/24 20:50	1
Arsenic	<0.530		2.00	0.530	ug/L		05/17/24 09:30	05/24/24 20:50	1
Barium	**55.8**		2.00	0.660	ug/L		05/17/24 09:30	05/24/24 20:50	1
Beryllium	<0.330		1.00	0.330	ug/L		05/17/24 09:30	05/24/24 20:50	1
Cadmium	<0.100		0.200	0.100	ug/L		05/17/24 09:30	05/24/24 20:50	1
Chromium	**1.93**	**J**	5.00	1.20	ug/L		05/17/24 09:30	05/24/24 20:50	1
Cobalt	**0.830**		0.500	0.170	ug/L		05/17/24 09:30	05/24/24 20:50	1
Copper	**2.93**	**J**	5.00	1.80	ug/L		05/17/24 09:30	05/24/24 20:50	1
Lead	<0.260		0.500	0.260	ug/L		05/17/24 09:30	05/24/24 20:50	1
Nickel	**13.0**		5.00	2.10	ug/L		05/17/24 09:30	05/29/24 21:26	1
Selenium	<1.40		5.00	1.40	ug/L		05/17/24 09:30	05/24/24 20:50	1
Silver	<0.500		1.00	0.500	ug/L		05/17/24 09:30	05/29/24 21:26	1
Thallium	<0.570		1.00	0.570	ug/L		05/17/24 09:30	05/24/24 20:50	1
Vanadium	<1.10		5.00	1.10	ug/L		05/17/24 09:30	05/24/24 20:50	1
Zinc	<9.70		20.0	9.70	ug/L		05/17/24 09:30	05/24/24 20:50	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**1.88**		1.88	1.39	mg/L			05/17/24 08:46	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**19.11**				NTU			05/14/24 12:00	1

Client: AECOM
Job ID: 310-281290-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-216BR
Lab Sample ID: 310-281290-5

Date Collected: 05/14/24 13:00
Matrix: Groundwater
Date Received: 05/15/24 09:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/21/24 07:57	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/21/24 07:57	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/21/24 07:57	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/21/24 07:57	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/21/24 07:57	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/21/24 07:57	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/21/24 07:57	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/21/24 07:57	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/21/24 07:57	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/21/24 07:57	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/21/24 07:57	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/21/24 07:57	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/21/24 07:57	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/21/24 07:57	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/21/24 07:57	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/21/24 07:57	1
Acetone	<3.10		10.0	3.10	ug/L			05/21/24 07:57	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/21/24 07:57	1
Benzene	<0.220		0.500	0.220	ug/L			05/21/24 07:57	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/21/24 07:57	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/21/24 07:57	1
Bromoform	<0.780		5.00	0.780	ug/L			05/21/24 07:57	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/21/24 07:57	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/21/24 07:57	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/21/24 07:57	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/21/24 07:57	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/21/24 07:57	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/21/24 07:57	1
Chloroform	<1.30		3.00	1.30	ug/L			05/21/24 07:57	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/21/24 07:57	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/21/24 07:57	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/21/24 07:57	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/21/24 07:57	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/21/24 07:57	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/21/24 07:57	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/21/24 07:57	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/21/24 07:57	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/21/24 07:57	1
Styrene	<0.370		1.00	0.370	ug/L			05/21/24 07:57	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/21/24 07:57	1
Toluene	<0.430		1.00	0.430	ug/L			05/21/24 07:57	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/21/24 07:57	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/21/24 07:57	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/21/24 07:57	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/21/24 07:57	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/21/24 07:57	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/21/24 07:57	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/21/24 07:57	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/21/24 07:57	1

Client: AECOM
Job ID: 310-281290-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-216BR
Lab Sample ID: 310-281290-5

Date Collected: 05/14/24 13:00
Matrix: Groundwater
Date Received: 05/15/24 09:30

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	*112*		*73 - 130*		*05/21/24 07:57*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*05/21/24 07:57*	*1*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*05/21/24 07:57*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		05/17/24 09:30	05/24/24 20:52	1
Arsenic	<0.530		2.00	0.530	ug/L		05/17/24 09:30	05/24/24 20:52	1
Barium	**222**		2.00	0.660	ug/L		05/17/24 09:30	05/24/24 20:52	1
Beryllium	<0.330		1.00	0.330	ug/L		05/17/24 09:30	05/24/24 20:52	1
Cadmium	<0.100		0.200	0.100	ug/L		05/17/24 09:30	05/24/24 20:52	1
Chromium	<1.20		5.00	1.20	ug/L		05/17/24 09:30	05/24/24 20:52	1
Cobalt	<0.170		0.500	0.170	ug/L		05/17/24 09:30	05/24/24 20:52	1
Copper	<1.80		5.00	1.80	ug/L		05/17/24 09:30	05/24/24 20:52	1
Lead	<0.260		0.500	0.260	ug/L		05/17/24 09:30	05/24/24 20:52	1
Nickel	<2.10		5.00	2.10	ug/L		05/17/24 09:30	05/29/24 21:37	1
Selenium	<1.40		5.00	1.40	ug/L		05/17/24 09:30	05/24/24 20:52	1
Silver	<0.500		1.00	0.500	ug/L		05/17/24 09:30	05/29/24 21:37	1
Thallium	<0.570		1.00	0.570	ug/L		05/17/24 09:30	05/24/24 20:52	1
Vanadium	<1.10		5.00	1.10	ug/L		05/17/24 09:30	05/24/24 20:52	1
Zinc	<9.70		20.0	9.70	ug/L		05/17/24 09:30	05/24/24 20:52	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**2.88**		1.88	1.39	mg/L			05/17/24 08:46	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**3.71**				NTU			05/14/24 13:00	1

Client: AECOM
Job ID: 310-281290-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-401B
Lab Sample ID: 310-281290-6
Date Collected: 05/14/24 10:30
Matrix: Groundwater
Date Received: 05/15/24 09:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/21/24 08:19	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/21/24 08:19	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/21/24 08:19	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/21/24 08:19	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/21/24 08:19	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/21/24 08:19	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/21/24 08:19	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/21/24 08:19	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/21/24 08:19	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/21/24 08:19	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/21/24 08:19	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/21/24 08:19	1
1,4-Dichlorobenzene	**1.22**		1.00	0.230	ug/L			05/21/24 08:19	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/21/24 08:19	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/21/24 08:19	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/21/24 08:19	1
Acetone	**9.57**	**J**	10.0	3.10	ug/L			05/21/24 08:19	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/21/24 08:19	1
Benzene	**3.79**		0.500	0.220	ug/L			05/21/24 08:19	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/21/24 08:19	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/21/24 08:19	1
Bromoform	<0.780		5.00	0.780	ug/L			05/21/24 08:19	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/21/24 08:19	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/21/24 08:19	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/21/24 08:19	1
Chlorobenzene	**0.473**	**J**	1.00	0.400	ug/L			05/21/24 08:19	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/21/24 08:19	1
Chloroethane	**0.998**	**J**	4.00	0.790	ug/L			05/21/24 08:19	1
Chloroform	<1.30		3.00	1.30	ug/L			05/21/24 08:19	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/21/24 08:19	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/21/24 08:19	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/21/24 08:19	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/21/24 08:19	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/21/24 08:19	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/21/24 08:19	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/21/24 08:19	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/21/24 08:19	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/21/24 08:19	1
Styrene	<0.370		1.00	0.370	ug/L			05/21/24 08:19	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/21/24 08:19	1
Toluene	<0.430		1.00	0.430	ug/L			05/21/24 08:19	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/21/24 08:19	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/21/24 08:19	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/21/24 08:19	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/21/24 08:19	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/21/24 08:19	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/21/24 08:19	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/21/24 08:19	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/21/24 08:19	1

Client Sample ID: OW-401B
Date Collected: 05/14/24 10:30
Date Received: 05/15/24 09:30

Lab Sample ID: 310-281290-6
Matrix: Groundwater

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*109*		*73 - 130*		*05/21/24 08:19*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*05/21/24 08:19*	*1*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*05/21/24 08:19*	*1*

Method: SW846 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
beta-BHC	<0.0402		0.0696	0.0402	ug/L		05/21/24 08:00	05/28/24 15:42	1
delta-BHC	<0.0293		0.0696	0.0293	ug/L		05/21/24 08:00	05/28/24 15:42	1
Endosulfan sulfate	<0.0326		0.0696	0.0326	ug/L		05/21/24 08:00	05/28/24 15:42	1
Endrin aldehyde	<0.0315		0.0696	0.0315	ug/L		05/21/24 08:00	05/28/24 15:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*73*		*10 - 136*	*05/21/24 08:00*	*05/28/24 15:42*	*1*
Tetrachloro-m-xylene (Surr)	*59*		*10 - 130*	*05/21/24 08:00*	*05/28/24 15:42*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		05/17/24 09:30	05/24/24 20:54	1
Arsenic	**5.67**		2.00	0.530	ug/L		05/17/24 09:30	05/24/24 20:54	1
Barium	**1710**		2.00	0.660	ug/L		05/17/24 09:30	05/24/24 20:54	1
Beryllium	<0.330		1.00	0.330	ug/L		05/17/24 09:30	05/24/24 20:54	1
Cadmium	<0.100		0.200	0.100	ug/L		05/17/24 09:30	05/24/24 20:54	1
Chromium	**1.34**	**J**	5.00	1.20	ug/L		05/17/24 09:30	05/24/24 20:54	1
Cobalt	**2.50**		0.500	0.170	ug/L		05/17/24 09:30	05/24/24 20:54	1
Copper	<1.80		5.00	1.80	ug/L		05/17/24 09:30	05/24/24 20:54	1
Lead	<0.260		0.500	0.260	ug/L		05/17/24 09:30	05/24/24 20:54	1
Nickel	**47.0**		5.00	2.10	ug/L		05/17/24 09:30	05/29/24 21:39	1
Selenium	<1.40		5.00	1.40	ug/L		05/17/24 09:30	05/24/24 20:54	1
Silver	<0.500		1.00	0.500	ug/L		05/17/24 09:30	05/29/24 21:39	1
Thallium	<0.570		1.00	0.570	ug/L		05/17/24 09:30	05/24/24 20:54	1
Vanadium	**2.55**	**J**	5.00	1.10	ug/L		05/17/24 09:30	05/24/24 20:54	1
Zinc	<9.70		20.0	9.70	ug/L		05/17/24 09:30	05/24/24 20:54	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide (SW846 9034)	<1.41		3.00	1.41	mg/L		05/20/24 07:41	05/20/24 09:22	1
Total Suspended Solids (USGS I-3765-85)	**76.0**		15.0	11.1	mg/L			05/17/24 08:46	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**3.37**				NTU			05/14/24 10:30	1

Client: AECOM
Job ID: 310-281290-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Trip Blank
Lab Sample ID: 310-281290-7

Date Collected: 05/14/24 00:00
Matrix: Water

Date Received: 05/15/24 09:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/21/24 12:29	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/21/24 12:29	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/21/24 12:29	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/21/24 12:29	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/21/24 12:29	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/21/24 12:29	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/21/24 12:29	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/21/24 12:29	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/21/24 12:29	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/21/24 12:29	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/21/24 12:29	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/21/24 12:29	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/21/24 12:29	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/21/24 12:29	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/21/24 12:29	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/21/24 12:29	1
Acetone	<3.10		10.0	3.10	ug/L			05/21/24 12:29	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/21/24 12:29	1
Benzene	<0.220		0.500	0.220	ug/L			05/21/24 12:29	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/21/24 12:29	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/21/24 12:29	1
Bromoform	<0.780		5.00	0.780	ug/L			05/21/24 12:29	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/21/24 12:29	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/21/24 12:29	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/21/24 12:29	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/21/24 12:29	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/21/24 12:29	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/21/24 12:29	1
Chloroform	<1.30		3.00	1.30	ug/L			05/21/24 12:29	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/21/24 12:29	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/21/24 12:29	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/21/24 12:29	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/21/24 12:29	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/21/24 12:29	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/21/24 12:29	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/21/24 12:29	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/21/24 12:29	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/21/24 12:29	1
Styrene	<0.370		1.00	0.370	ug/L			05/21/24 12:29	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/21/24 12:29	1
Toluene	<0.430		1.00	0.430	ug/L			05/21/24 12:29	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/21/24 12:29	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/21/24 12:29	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/21/24 12:29	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/21/24 12:29	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/21/24 12:29	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/21/24 12:29	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/21/24 12:29	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/21/24 12:29	1

Client: AECOM
Job ID: 310-281290-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Trip Blank
Lab Sample ID: 310-281290-7
Date Collected: 05/14/24 00:00
Matrix: Water
Date Received: 05/15/24 09:30

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	111		73 - 130		05/21/24 12:29	1
Toluene-d8 (Surr)	97		80 - 120		05/21/24 12:29	1
4-Bromofluorobenzene (Surr)	99		80 - 120		05/21/24 12:29	1

Definitions/Glossary

Client: AECOM
Job ID: 310-281290-1
Project/Site: Black Hawk County Landfill (IDNR)

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Surrogate Summary

Client: AECOM
Job ID: 310-281290-1
Project/Site: Black Hawk County Landfill (IDNR)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Groundwater

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-281290-1	MW-603B	115	98	99
310-281290-2	GUW2-1	113	98	100
310-281290-3	GUW2-1-FD	116	96	99
310-281290-3	GUW2-1-FD	112	96	99
310-281290-4	OW-114B	113	97	101
310-281290-5	OW-216BR	112	98	99
310-281290-6	OW-401B	109	97	99

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-281290-7	Trip Blank	111	97	99
LCS 310-422205/6	Lab Control Sample	99	101	101
LCS 310-422205/7	Lab Control Sample	115	96	100
LCS 310-422207/6	Lab Control Sample	99	101	100
LCS 310-422207/7	Lab Control Sample	113	97	102
LCS 310-422561/6	Lab Control Sample	98	101	102
LCS 310-422561/7	Lab Control Sample	111	97	100
MB 310-422205/5	Method Blank	113	98	102
MB 310-422207/5	Method Blank	113	98	100
MB 310-422561/5	Method Blank	111	96	98

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Groundwater

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
		DCB1	TCX1
Lab Sample ID	Client Sample ID	(10-136)	(10-130)
310-281290-6	OW-401B	73	59

Surrogate Legend

DCB = DCB Decachlorobiphenyl (Surr)
TCX = Tetrachloro-m-xylene (Surr)

Surrogate Summary

Client: AECOM
Job ID: 310-281290-1
Project/Site: Black Hawk County Landfill (IDNR)

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)									
		DCB1	TCX1								
Lab Sample ID	Client Sample ID	(10-136)	(10-130)								
LCS 310-422219/4-A	Lab Control Sample	75	77								
LCSD 310-422219/5-A	Lab Control Sample Dup	52	66								
MB 310-422219/1-A	Method Blank	73	68								

Surrogate Legend

DCB = DCB Decachlorobiphenyl (Surr)
TCX = Tetrachloro-m-xylene (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 310-422205/5
Matrix: Water
Analysis Batch: 422205

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/21/24 00:21	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/21/24 00:21	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/21/24 00:21	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/21/24 00:21	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/21/24 00:21	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/21/24 00:21	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/21/24 00:21	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/21/24 00:21	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/21/24 00:21	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/21/24 00:21	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/21/24 00:21	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/21/24 00:21	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/21/24 00:21	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/21/24 00:21	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/21/24 00:21	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/21/24 00:21	1
Acetone	<3.10		10.0	3.10	ug/L			05/21/24 00:21	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/21/24 00:21	1
Benzene	<0.220		0.500	0.220	ug/L			05/21/24 00:21	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/21/24 00:21	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/21/24 00:21	1
Bromoform	<0.780		5.00	0.780	ug/L			05/21/24 00:21	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/21/24 00:21	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/21/24 00:21	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/21/24 00:21	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/21/24 00:21	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/21/24 00:21	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/21/24 00:21	1
Chloroform	<1.30		3.00	1.30	ug/L			05/21/24 00:21	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/21/24 00:21	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/21/24 00:21	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/21/24 00:21	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/21/24 00:21	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/21/24 00:21	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/21/24 00:21	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/21/24 00:21	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/21/24 00:21	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/21/24 00:21	1
Styrene	<0.370		1.00	0.370	ug/L			05/21/24 00:21	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/21/24 00:21	1
Toluene	<0.430		1.00	0.430	ug/L			05/21/24 00:21	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/21/24 00:21	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/21/24 00:21	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/21/24 00:21	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/21/24 00:21	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/21/24 00:21	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/21/24 00:21	1
Vinyl chloride	0.2884	J	1.00	0.180	ug/L			05/21/24 00:21	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-422205/5
Matrix: Water
Analysis Batch: 422205

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/21/24 00:21	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*113*		*73 - 130*		*05/21/24 00:21*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*05/21/24 00:21*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*		*05/21/24 00:21*	*1*

Lab Sample ID: LCS 310-422205/6
Matrix: Water
Analysis Batch: 422205

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	20.0	21.65		ug/L		108	71 - 120
1,1,1-Trichloroethane	20.0	22.06		ug/L		110	73 - 129
1,1,2,2-Tetrachloroethane	20.0	20.35		ug/L		102	68 - 124
1,1,2-Trichloroethane	20.0	22.66		ug/L		113	73 - 123
1,1-Dichloroethane	20.0	21.15		ug/L		106	70 - 127
1,1-Dichloroethene	20.0	20.64		ug/L		103	63 - 132
1,2,3-Trichloropropane	20.0	21.33		ug/L		107	65 - 127
1,2-Dibromo-3-Chloropropane	20.0	21.10		ug/L		106	50 - 150
1,2-Dibromoethane (EDB)	20.0	22.65		ug/L		113	75 - 125
1,2-Dichlorobenzene	20.0	21.32		ug/L		107	74 - 120
1,2-Dichloroethane	20.0	22.09		ug/L		110	71 - 125
1,2-Dichloropropane	20.0	23.09		ug/L		115	73 - 124
1,4-Dichlorobenzene	20.0	21.34		ug/L		107	72 - 120
2-Butanone (MEK)	40.0	44.07		ug/L		110	50 - 150
2-Hexanone	40.0	44.46		ug/L		111	60 - 140
4-Methyl-2-pentanone (MIBK)	40.0	44.99		ug/L		112	60 - 139
Acetone	40.0	43.03		ug/L		108	50 - 150
Acrylonitrile	200	218.3		ug/L		109	50 - 150
Benzene	20.0	21.74		ug/L		109	72 - 124
Bromochloromethane	20.0	21.34		ug/L		107	73 - 130
Bromodichloromethane	20.0	21.50		ug/L		107	74 - 122
Bromoform	20.0	20.61		ug/L		103	61 - 122
Carbon disulfide	20.0	20.69		ug/L		103	59 - 135
Carbon tetrachloride	20.0	23.39		ug/L		117	67 - 132
Chlorobenzene	20.0	21.34		ug/L		107	76 - 120
Chlorodibromomethane	20.0	22.17		ug/L		111	71 - 121
Chloroform	20.0	21.38		ug/L		107	72 - 125
cis-1,2-Dichloroethene	20.0	20.73		ug/L		104	74 - 123
cis-1,3-Dichloropropene	20.0	22.50		ug/L		113	71 - 125
Dibromomethane	20.0	21.32		ug/L		107	74 - 125
Ethylbenzene	20.0	21.58		ug/L		108	74 - 122
Iodomethane	20.0	21.99		ug/L		110	10 - 150
Methylene Chloride	20.0	20.28		ug/L		101	50 - 150
Styrene	20.0	21.68		ug/L		108	74 - 121
Tetrachloroethene	20.0	22.08		ug/L		110	71 - 130
Toluene	20.0	20.94		ug/L		105	74 - 123

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-422205/6
Matrix: Water
Analysis Batch: 422205

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
trans-1,2-Dichloroethene	20.0	21.18		ug/L		106	70 - 126
trans-1,3-Dichloropropene	20.0	21.25		ug/L		106	69 - 123
trans-1,4-Dichloro-2-butene	20.0	21.57		ug/L		108	50 - 150
Trichloroethene	20.0	21.98		ug/L		110	72 - 126
Vinyl acetate	40.0	41.84		ug/L		105	50 - 150
Xylenes, Total	40.0	43.39		ug/L		108	73 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*99*		*73 - 130*
Toluene-d8 (Surr)	*101*		*80 - 120*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*

Lab Sample ID: LCS 310-422205/7
Matrix: Water
Analysis Batch: 422205

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	20.54		ug/L		103	23 - 150
Chloroethane	20.0	22.95		ug/L		115	54 - 136
Chloromethane	20.0	24.41		ug/L		122	38 - 150
Trichlorofluoromethane	20.0	23.61		ug/L		118	54 - 149
Vinyl chloride	20.0	24.27		ug/L		121	56 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*115*		*73 - 130*
Toluene-d8 (Surr)	*96*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*

Lab Sample ID: MB 310-422207/5
Matrix: Water
Analysis Batch: 422207

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/21/24 11:21	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/21/24 11:21	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/21/24 11:21	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/21/24 11:21	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/21/24 11:21	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/21/24 11:21	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/21/24 11:21	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/21/24 11:21	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/21/24 11:21	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/21/24 11:21	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/21/24 11:21	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/21/24 11:21	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/21/24 11:21	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/21/24 11:21	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/21/24 11:21	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-422207/5
Matrix: Water
Analysis Batch: 422207

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/21/24 11:21	1
Acetone	<3.10		10.0	3.10	ug/L			05/21/24 11:21	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/21/24 11:21	1
Benzene	<0.220		0.500	0.220	ug/L			05/21/24 11:21	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/21/24 11:21	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/21/24 11:21	1
Bromoform	<0.780		5.00	0.780	ug/L			05/21/24 11:21	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/21/24 11:21	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/21/24 11:21	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/21/24 11:21	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/21/24 11:21	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/21/24 11:21	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/21/24 11:21	1
Chloroform	<1.30		3.00	1.30	ug/L			05/21/24 11:21	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/21/24 11:21	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/21/24 11:21	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/21/24 11:21	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/21/24 11:21	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/21/24 11:21	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/21/24 11:21	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/21/24 11:21	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/21/24 11:21	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/21/24 11:21	1
Styrene	<0.370		1.00	0.370	ug/L			05/21/24 11:21	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/21/24 11:21	1
Toluene	<0.430		1.00	0.430	ug/L			05/21/24 11:21	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/21/24 11:21	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/21/24 11:21	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/21/24 11:21	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/21/24 11:21	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/21/24 11:21	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/21/24 11:21	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/21/24 11:21	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/21/24 11:21	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*113*		*73 - 130*		*05/21/24 11:21*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*05/21/24 11:21*	*1*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*		*05/21/24 11:21*	*1*

Lab Sample ID: LCS 310-422207/6
Matrix: Water
Analysis Batch: 422207

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	20.0	20.28		ug/L		101	71 - 120
1,1,1-Trichloroethane	20.0	20.28		ug/L		101	73 - 129
1,1,2,2-Tetrachloroethane	20.0	21.00		ug/L		105	68 - 124

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-422207/6
Matrix: Water
Analysis Batch: 422207

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,2-Trichloroethane	20.0	21.61		ug/L		108	73 - 123
1,1-Dichloroethane	20.0	19.37		ug/L		97	70 - 127
1,1-Dichloroethene	20.0	18.99		ug/L		95	63 - 132
1,2,3-Trichloropropane	20.0	21.14		ug/L		106	65 - 127
1,2-Dibromo-3-Chloropropane	20.0	21.36		ug/L		107	50 - 150
1,2-Dibromoethane (EDB)	20.0	22.05		ug/L		110	75 - 125
1,2-Dichlorobenzene	20.0	20.34		ug/L		102	74 - 120
1,2-Dichloroethane	20.0	21.20		ug/L		106	71 - 125
1,2-Dichloropropane	20.0	21.47		ug/L		107	73 - 124
1,4-Dichlorobenzene	20.0	19.96		ug/L		100	72 - 120
2-Butanone (MEK)	40.0	45.87		ug/L		115	50 - 150
2-Hexanone	40.0	46.52		ug/L		116	60 - 140
4-Methyl-2-pentanone (MIBK)	40.0	46.05		ug/L		115	60 - 139
Acetone	40.0	43.50		ug/L		109	50 - 150
Acrylonitrile	200	220.9		ug/L		110	50 - 150
Benzene	20.0	20.34		ug/L		102	72 - 124
Bromochloromethane	20.0	20.25		ug/L		101	73 - 130
Bromodichloromethane	20.0	20.15		ug/L		101	74 - 122
Bromoform	20.0	20.22		ug/L		101	61 - 122
Carbon disulfide	20.0	18.86		ug/L		94	59 - 135
Carbon tetrachloride	20.0	21.44		ug/L		107	67 - 132
Chlorobenzene	20.0	20.01		ug/L		100	76 - 120
Chlorodibromomethane	20.0	20.93		ug/L		105	71 - 121
Chloroform	20.0	19.96		ug/L		100	72 - 125
cis-1,2-Dichloroethene	20.0	19.04		ug/L		95	74 - 123
cis-1,3-Dichloropropene	20.0	20.78		ug/L		104	71 - 125
Dibromomethane	20.0	20.56		ug/L		103	74 - 125
Ethylbenzene	20.0	20.37		ug/L		102	74 - 122
Iodomethane	20.0	19.31		ug/L		97	10 - 150
Methylene Chloride	20.0	19.17		ug/L		96	50 - 150
Styrene	20.0	20.44		ug/L		102	74 - 121
Tetrachloroethene	20.0	20.16		ug/L		101	71 - 130
Toluene	20.0	19.34		ug/L		97	74 - 123
trans-1,2-Dichloroethene	20.0	19.25		ug/L		96	70 - 126
trans-1,3-Dichloropropene	20.0	19.97		ug/L		100	69 - 123
trans-1,4-Dichloro-2-butene	20.0	19.62		ug/L		98	50 - 150
Trichloroethene	20.0	20.58		ug/L		103	72 - 126
Vinyl acetate	40.0	40.45		ug/L		101	50 - 150
Xylenes, Total	40.0	40.46		ug/L		101	73 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*99*		*73 - 130*
Toluene-d8 (Surr)	*101*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-422207/7
Matrix: Water
Analysis Batch: 422207

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	19.56		ug/L		98	23 - 150
Chloroethane	20.0	21.21		ug/L		106	54 - 136
Chloromethane	20.0	22.23		ug/L		111	38 - 150
Trichlorofluoromethane	20.0	21.81		ug/L		109	54 - 149
Vinyl chloride	20.0	22.32		ug/L		112	56 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*113*		*73 - 130*
Toluene-d8 (Surr)	*97*		*80 - 120*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*

Lab Sample ID: MB 310-422561/5
Matrix: Water
Analysis Batch: 422561

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/23/24 18:25	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/23/24 18:25	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/23/24 18:25	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/23/24 18:25	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/23/24 18:25	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/23/24 18:25	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/23/24 18:25	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/23/24 18:25	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/23/24 18:25	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/23/24 18:25	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/23/24 18:25	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/23/24 18:25	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/23/24 18:25	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/23/24 18:25	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/23/24 18:25	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/23/24 18:25	1
Acetone	<3.10		10.0	3.10	ug/L			05/23/24 18:25	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/23/24 18:25	1
Benzene	<0.220		0.500	0.220	ug/L			05/23/24 18:25	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/23/24 18:25	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/23/24 18:25	1
Bromoform	<0.780		5.00	0.780	ug/L			05/23/24 18:25	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/23/24 18:25	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/23/24 18:25	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/23/24 18:25	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/23/24 18:25	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/23/24 18:25	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/23/24 18:25	1
Chloroform	<1.30		3.00	1.30	ug/L			05/23/24 18:25	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/23/24 18:25	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/23/24 18:25	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/23/24 18:25	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-422561/5
Matrix: Water
Analysis Batch: 422561

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibromomethane	<0.330		1.00	0.330	ug/L			05/23/24 18:25	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/23/24 18:25	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/23/24 18:25	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/23/24 18:25	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/23/24 18:25	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/23/24 18:25	1
Styrene	<0.370		1.00	0.370	ug/L			05/23/24 18:25	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/23/24 18:25	1
Toluene	<0.430		1.00	0.430	ug/L			05/23/24 18:25	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/23/24 18:25	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/23/24 18:25	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/23/24 18:25	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/23/24 18:25	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/23/24 18:25	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/23/24 18:25	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/23/24 18:25	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/23/24 18:25	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*111*		*73 - 130*		*05/23/24 18:25*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*05/23/24 18:25*	*1*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*05/23/24 18:25*	*1*

Lab Sample ID: LCS 310-422561/6
Matrix: Water
Analysis Batch: 422561

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	20.0	21.78		ug/L		109	71 - 120
1,1,1-Trichloroethane	20.0	21.83		ug/L		109	73 - 129
1,1,2,2-Tetrachloroethane	20.0	21.69		ug/L		108	68 - 124
1,1,2-Trichloroethane	20.0	23.11		ug/L		116	73 - 123
1,1-Dichloroethane	20.0	20.86		ug/L		104	70 - 127
1,1-Dichloroethene	20.0	19.89		ug/L		99	63 - 132
1,2,3-Trichloropropane	20.0	22.30		ug/L		112	65 - 127
1,2-Dibromo-3-Chloropropane	20.0	21.29		ug/L		106	50 - 150
1,2-Dibromoethane (EDB)	20.0	22.91		ug/L		115	75 - 125
1,2-Dichlorobenzene	20.0	21.81		ug/L		109	74 - 120
1,2-Dichloroethane	20.0	22.06		ug/L		110	71 - 125
1,2-Dichloropropane	20.0	23.19		ug/L		116	73 - 124
1,4-Dichlorobenzene	20.0	21.71		ug/L		109	72 - 120
2-Butanone (MEK)	40.0	47.82		ug/L		120	50 - 150
2-Hexanone	40.0	48.75		ug/L		122	60 - 140
4-Methyl-2-pentanone (MIBK)	40.0	48.31		ug/L		121	60 - 139
Acetone	40.0	45.00		ug/L		113	50 - 150
Acrylonitrile	200	226.9		ug/L		113	50 - 150
Benzene	20.0	21.92		ug/L		110	72 - 124
Bromochloromethane	20.0	20.80		ug/L		104	73 - 130

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-422561/6
Matrix: Water
Analysis Batch: 422561

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromodichloromethane	20.0	21.25		ug/L		106	74 - 122
Bromoform	20.0	21.35		ug/L		107	61 - 122
Carbon disulfide	20.0	20.28		ug/L		101	59 - 135
Carbon tetrachloride	20.0	23.80		ug/L		119	67 - 132
Chlorobenzene	20.0	22.06		ug/L		110	76 - 120
Chlorodibromomethane	20.0	22.24		ug/L		111	71 - 121
Chloroform	20.0	20.53		ug/L		103	72 - 125
cis-1,2-Dichloroethene	20.0	20.95		ug/L		105	74 - 123
cis-1,3-Dichloropropene	20.0	23.01		ug/L		115	71 - 125
Dibromomethane	20.0	21.00		ug/L		105	74 - 125
Ethylbenzene	20.0	22.08		ug/L		110	74 - 122
Iodomethane	20.0	17.93		ug/L		90	10 - 150
Methylene Chloride	20.0	20.00		ug/L		100	50 - 150
Styrene	20.0	22.33		ug/L		112	74 - 121
Tetrachloroethene	20.0	22.11		ug/L		111	71 - 130
Toluene	20.0	21.33		ug/L		107	74 - 123
trans-1,2-Dichloroethene	20.0	21.15		ug/L		106	70 - 126
trans-1,3-Dichloropropene	20.0	21.71		ug/L		109	69 - 123
trans-1,4-Dichloro-2-butene	20.0	21.25		ug/L		106	50 - 150
Trichloroethene	20.0	22.02		ug/L		110	72 - 126
Vinyl acetate	40.0	43.07		ug/L		108	50 - 150
Xylenes, Total	40.0	43.42		ug/L		109	73 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*98*		*73 - 130*
Toluene-d8 (Surr)	*101*		*80 - 120*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*

Lab Sample ID: LCS 310-422561/7
Matrix: Water
Analysis Batch: 422561

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	19.08		ug/L		95	23 - 150
Chloroethane	20.0	22.25		ug/L		111	54 - 136
Chloromethane	20.0	22.76		ug/L		114	38 - 150
Trichlorofluoromethane	20.0	23.05		ug/L		115	54 - 149
Vinyl chloride	20.0	23.24		ug/L		116	56 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*111*		*73 - 130*
Toluene-d8 (Surr)	*97*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*

Method: 8081B - Organochlorine Pesticides (GC)

Lab Sample ID: MB 310-422219/1-A
Matrix: Water
Analysis Batch: 422812

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 422219

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
beta-BHC	<0.0370		0.0640	0.0370	ug/L		05/21/24 08:00	05/28/24 13:10	1
delta-BHC	<0.0270		0.0640	0.0270	ug/L		05/21/24 08:00	05/28/24 13:10	1
Endosulfan sulfate	<0.0300		0.0640	0.0300	ug/L		05/21/24 08:00	05/28/24 13:10	1
Endrin aldehyde	<0.0290		0.0640	0.0290	ug/L		05/21/24 08:00	05/28/24 13:10	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*73*		*10 - 136*	*05/21/24 08:00*	*05/28/24 13:10*	*1*
Tetrachloro-m-xylene (Surr)	*68*		*10 - 130*	*05/21/24 08:00*	*05/28/24 13:10*	*1*

Lab Sample ID: LCS 310-422219/4-A
Matrix: Water
Analysis Batch: 422812

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 422219

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
beta-BHC			1.00	0.6860		ug/L		69	37 - 136		
delta-BHC			1.00	0.6387		ug/L		64	33 - 134		
Endosulfan sulfate			1.00	0.7480		ug/L		75	36 - 147		
Endrin aldehyde			1.00	0.7810		ug/L		78	32 - 137		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl (Surr)	*75*		*10 - 136*
Tetrachloro-m-xylene (Surr)	*77*		*10 - 130*

Lab Sample ID: LCSD 310-422219/5-A
Matrix: Water
Analysis Batch: 422812

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 422219

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
beta-BHC			1.00	0.6092		ug/L		61	37 - 136	12	35
delta-BHC			1.00	0.5698		ug/L		57	33 - 134	11	35
Endosulfan sulfate			1.00	0.6602		ug/L		66	36 - 147	12	35
Endrin aldehyde			1.00	0.6930		ug/L		69	32 - 137	12	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
DCB Decachlorobiphenyl (Surr)	*52*		*10 - 136*
Tetrachloro-m-xylene (Surr)	*66*		*10 - 130*

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-421948/1-A
Matrix: Water
Analysis Batch: 422792

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 421948

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		05/17/24 09:30	05/24/24 19:45	1
Arsenic	<0.530		2.00	0.530	ug/L		05/17/24 09:30	05/24/24 19:45	1
Barium	<0.660		2.00	0.660	ug/L		05/17/24 09:30	05/24/24 19:45	1
Beryllium	<0.330		1.00	0.330	ug/L		05/17/24 09:30	05/24/24 19:45	1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 310-421948/1-A
Matrix: Water
Analysis Batch: 422792

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 421948

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	<0.100		0.200	0.100	ug/L		05/17/24 09:30	05/24/24 19:45	1
Chromium	<1.20		5.00	1.20	ug/L		05/17/24 09:30	05/24/24 19:45	1
Cobalt	<0.170		0.500	0.170	ug/L		05/17/24 09:30	05/24/24 19:45	1
Copper	<1.80		5.00	1.80	ug/L		05/17/24 09:30	05/24/24 19:45	1
Lead	<0.260		0.500	0.260	ug/L		05/17/24 09:30	05/24/24 19:45	1
Selenium	<1.40		5.00	1.40	ug/L		05/17/24 09:30	05/24/24 19:45	1
Thallium	<0.570		1.00	0.570	ug/L		05/17/24 09:30	05/24/24 19:45	1
Vanadium	<1.10		5.00	1.10	ug/L		05/17/24 09:30	05/24/24 19:45	1
Zinc	<9.70		20.0	9.70	ug/L		05/17/24 09:30	05/24/24 19:45	1

Lab Sample ID: MB 310-421948/1-A
Matrix: Water
Analysis Batch: 423059

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 421948

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nickel	<2.10		5.00	2.10	ug/L		05/17/24 09:30	05/29/24 20:55	1
Silver	<0.500		1.00	0.500	ug/L		05/17/24 09:30	05/29/24 20:55	1

Lab Sample ID: LCS 310-421948/2-A
Matrix: Water
Analysis Batch: 422792

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 421948

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	200	201.3		ug/L		101	80 - 120
Arsenic	200	207.5		ug/L		104	80 - 120
Barium	100	106.0		ug/L		106	80 - 120
Beryllium	100	95.44		ug/L		95	80 - 120
Cadmium	100	100.5		ug/L		100	80 - 120
Chromium	100	96.12		ug/L		96	80 - 120
Cobalt	100	99.24		ug/L		99	80 - 120
Copper	200	199.7		ug/L		100	80 - 120
Lead	200	210.3		ug/L		105	80 - 120
Nickel	200	212.0		ug/L		106	80 - 120
Selenium	400	399.5		ug/L		100	80 - 120
Thallium	100	110.6		ug/L		111	80 - 120
Vanadium	100	102.4		ug/L		102	80 - 120
Zinc	200	183.2		ug/L		92	80 - 120

Lab Sample ID: LCS 310-421948/2-A
Matrix: Water
Analysis Batch: 423059

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 421948

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Silver	100	113.5		ug/L		113	80 - 120

Method: 9034 - Sulfide, Acid soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 240-613583/1-A
Matrix: Water
Analysis Batch: 613623

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 613583

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.41		3.00	1.41	mg/L		05/20/24 07:41	05/20/24 09:22	1

Lab Sample ID: LCS 240-613583/2-A
Matrix: Water
Analysis Batch: 613623

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 613583

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfide	9.07	8.000		mg/L		88	70 - 120

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: MB 310-421986/1
Matrix: Water
Analysis Batch: 421986

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<3.70		5.00	3.70	mg/L			05/17/24 08:46	1

Lab Sample ID: LCS 310-421986/2
Matrix: Water
Analysis Batch: 421986

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	89.00		mg/L		89	81 - 116

Lab Sample ID: MB 310-422005/1
Matrix: Water
Analysis Batch: 422005

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<3.70		5.00	3.70	mg/L			05/17/24 09:34	1

Lab Sample ID: LCS 310-422005/2
Matrix: Water
Analysis Batch: 422005

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	94.00		mg/L		94	81 - 116

QC Association Summary

Client: AECOM
Job ID: 310-281290-1
Project/Site: Black Hawk County Landfill (IDNR)

GC/MS VOA

Analysis Batch: 422205

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-281290-1	MW-603B	Total/NA	Groundwater	8260D	
310-281290-2	GUW2-1	Total/NA	Groundwater	8260D	
310-281290-3	GUW2-1-FD	Total/NA	Groundwater	8260D	
310-281290-4	OW-114B	Total/NA	Groundwater	8260D	
310-281290-5	OW-216BR	Total/NA	Groundwater	8260D	
310-281290-6	OW-401B	Total/NA	Groundwater	8260D	
MB 310-422205/5	Method Blank	Total/NA	Water	8260D	
LCS 310-422205/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-422205/7	Lab Control Sample	Total/NA	Water	8260D	

Analysis Batch: 422207

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-281290-7	Trip Blank	Total/NA	Water	8260D	
MB 310-422207/5	Method Blank	Total/NA	Water	8260D	
LCS 310-422207/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-422207/7	Lab Control Sample	Total/NA	Water	8260D	

Analysis Batch: 422561

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-281290-3	GUW2-1-FD	Total/NA	Groundwater	8260D	
MB 310-422561/5	Method Blank	Total/NA	Water	8260D	
LCS 310-422561/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-422561/7	Lab Control Sample	Total/NA	Water	8260D	

GC Semi VOA

Prep Batch: 422219

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-281290-6	OW-401B	Total/NA	Groundwater	3510C	
MB 310-422219/1-A	Method Blank	Total/NA	Water	3510C	
LCS 310-422219/4-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 310-422219/5-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 422812

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-281290-6	OW-401B	Total/NA	Groundwater	8081B	422219
MB 310-422219/1-A	Method Blank	Total/NA	Water	8081B	422219
LCS 310-422219/4-A	Lab Control Sample	Total/NA	Water	8081B	422219
LCSD 310-422219/5-A	Lab Control Sample Dup	Total/NA	Water	8081B	422219

Metals

Prep Batch: 421948

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-281290-1	MW-603B	Total/NA	Groundwater	3005A	
310-281290-2	GUW2-1	Total/NA	Groundwater	3005A	
310-281290-3	GUW2-1-FD	Total/NA	Groundwater	3005A	
310-281290-4	OW-114B	Total/NA	Groundwater	3005A	
310-281290-5	OW-216BR	Total/NA	Groundwater	3005A	
310-281290-6	OW-401B	Total/NA	Groundwater	3005A	
MB 310-421948/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-421948/2-A	Lab Control Sample	Total/NA	Water	3005A	

Metals

Analysis Batch: 422792

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-281290-1	MW-603B	Total/NA	Groundwater	6020B	421948
310-281290-2	GUW2-1	Total/NA	Groundwater	6020B	421948
310-281290-3	GUW2-1-FD	Total/NA	Groundwater	6020B	421948
310-281290-4	OW-114B	Total/NA	Groundwater	6020B	421948
310-281290-5	OW-216BR	Total/NA	Groundwater	6020B	421948
310-281290-6	OW-401B	Total/NA	Groundwater	6020B	421948
MB 310-421948/1-A	Method Blank	Total/NA	Water	6020B	421948
LCS 310-421948/2-A	Lab Control Sample	Total/NA	Water	6020B	421948

Analysis Batch: 423059

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-281290-1	MW-603B	Total/NA	Groundwater	6020B	421948
310-281290-2	GUW2-1	Total/NA	Groundwater	6020B	421948
310-281290-3	GUW2-1-FD	Total/NA	Groundwater	6020B	421948
310-281290-4	OW-114B	Total/NA	Groundwater	6020B	421948
310-281290-5	OW-216BR	Total/NA	Groundwater	6020B	421948
310-281290-6	OW-401B	Total/NA	Groundwater	6020B	421948
MB 310-421948/1-A	Method Blank	Total/NA	Water	6020B	421948
LCS 310-421948/2-A	Lab Control Sample	Total/NA	Water	6020B	421948

General Chemistry

Analysis Batch: 421986

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-281290-1	MW-603B	Total/NA	Groundwater	I-3765-85	
310-281290-3	GUW2-1-FD	Total/NA	Groundwater	I-3765-85	
310-281290-4	OW-114B	Total/NA	Groundwater	I-3765-85	
310-281290-5	OW-216BR	Total/NA	Groundwater	I-3765-85	
310-281290-6	OW-401B	Total/NA	Groundwater	I-3765-85	
MB 310-421986/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-421986/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Analysis Batch: 422005

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-281290-2	GUW2-1	Total/NA	Groundwater	I-3765-85	
MB 310-422005/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-422005/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Prep Batch: 613583

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-281290-6	OW-401B	Total/NA	Groundwater	9030B	
MB 240-613583/1-A	Method Blank	Total/NA	Water	9030B	
LCS 240-613583/2-A	Lab Control Sample	Total/NA	Water	9030B	

Analysis Batch: 613623

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-281290-6	OW-401B	Total/NA	Groundwater	9034	613583
MB 240-613583/1-A	Method Blank	Total/NA	Water	9034	613583
LCS 240-613583/2-A	Lab Control Sample	Total/NA	Water	9034	613583

QC Association Summary

Client: AECOM
Job ID: 310-281290-1
Project/Site: Black Hawk County Landfill (IDNR)

Field Service / Mobile Lab

Analysis Batch: 422183

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-281290-1	MW-603B	Total/NA	Groundwater	Field Sampling	
310-281290-2	GUW2-1	Total/NA	Groundwater	Field Sampling	
310-281290-4	OW-114B	Total/NA	Groundwater	Field Sampling	
310-281290-5	OW-216BR	Total/NA	Groundwater	Field Sampling	
310-281290-6	OW-401B	Total/NA	Groundwater	Field Sampling	

Lab Chronicle

Client: AECOM
Job ID: 310-281290-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: MW-603B
Lab Sample ID: 310-281290-1
Date Collected: 05/14/24 14:00
Matrix: Groundwater
Date Received: 05/15/24 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	422205	D2YP	EET CF	05/21/24 06:25
Total/NA	Prep	3005A			421948	KM3E	EET CF	05/17/24 09:30
Total/NA	Analysis	6020B		1	422792	NFT2	EET CF	05/24/24 20:43
Total/NA	Prep	3005A			421948	KM3E	EET CF	05/17/24 09:30
Total/NA	Analysis	6020B		1	423059	NFT2	EET CF	05/29/24 21:19
Total/NA	Analysis	I-3765-85		1	421986	HE7K	EET CF	05/17/24 08:46
Total/NA	Analysis	Field Sampling		1	422183	BJ0R	EET CF	05/14/24 14:00

Client Sample ID: GUW2-1
Lab Sample ID: 310-281290-2
Date Collected: 05/14/24 13:30
Matrix: Groundwater
Date Received: 05/15/24 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	422205	D2YP	EET CF	05/21/24 06:48
Total/NA	Prep	3005A			421948	KM3E	EET CF	05/17/24 09:30
Total/NA	Analysis	6020B		1	422792	NFT2	EET CF	05/24/24 20:45
Total/NA	Prep	3005A			421948	KM3E	EET CF	05/17/24 09:30
Total/NA	Analysis	6020B		1	423059	NFT2	EET CF	05/29/24 21:22
Total/NA	Analysis	I-3765-85		1	422005	HE7K	EET CF	05/17/24 09:34
Total/NA	Analysis	Field Sampling		1	422183	BJ0R	EET CF	05/14/24 13:30

Client Sample ID: GUW2-1-FD
Lab Sample ID: 310-281290-3
Date Collected: 05/14/24 13:30
Matrix: Groundwater
Date Received: 05/15/24 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	422205	D2YP	EET CF	05/21/24 07:11
Total/NA	Analysis	8260D		1	422561	FE5V	EET CF	05/23/24 23:44
Total/NA	Prep	3005A			421948	KM3E	EET CF	05/17/24 09:30
Total/NA	Analysis	6020B		1	422792	NFT2	EET CF	05/24/24 20:47
Total/NA	Prep	3005A			421948	KM3E	EET CF	05/17/24 09:30
Total/NA	Analysis	6020B		1	423059	NFT2	EET CF	05/29/24 21:24
Total/NA	Analysis	I-3765-85		1	421986	HE7K	EET CF	05/17/24 08:46

Client Sample ID: OW-114B
Lab Sample ID: 310-281290-4
Date Collected: 05/14/24 12:00
Matrix: Groundwater
Date Received: 05/15/24 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	422205	D2YP	EET CF	05/21/24 07:34
Total/NA	Prep	3005A			421948	KM3E	EET CF	05/17/24 09:30
Total/NA	Analysis	6020B		1	422792	NFT2	EET CF	05/24/24 20:50
Total/NA	Prep	3005A			421948	KM3E	EET CF	05/17/24 09:30
Total/NA	Analysis	6020B		1	423059	NFT2	EET CF	05/29/24 21:26

Lab Chronicle

Client: AECOM
Job ID: 310-281290-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-114B
Lab Sample ID: 310-281290-4
Date Collected: 05/14/24 12:00
Matrix: Groundwater
Date Received: 05/15/24 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	I-3765-85		1	421986	HE7K	EET CF	05/17/24 08:46
Total/NA	Analysis	Field Sampling		1	422183	BJ0R	EET CF	05/14/24 12:00

Client Sample ID: OW-216BR
Lab Sample ID: 310-281290-5
Date Collected: 05/14/24 13:00
Matrix: Groundwater
Date Received: 05/15/24 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	422205	D2YP	EET CF	05/21/24 07:57
Total/NA	Prep	3005A			421948	KM3E	EET CF	05/17/24 09:30
Total/NA	Analysis	6020B		1	422792	NFT2	EET CF	05/24/24 20:52
Total/NA	Prep	3005A			421948	KM3E	EET CF	05/17/24 09:30
Total/NA	Analysis	6020B		1	423059	NFT2	EET CF	05/29/24 21:37
Total/NA	Analysis	I-3765-85		1	421986	HE7K	EET CF	05/17/24 08:46
Total/NA	Analysis	Field Sampling		1	422183	BJ0R	EET CF	05/14/24 13:00

Client Sample ID: OW-401B
Lab Sample ID: 310-281290-6
Date Collected: 05/14/24 10:30
Matrix: Groundwater
Date Received: 05/15/24 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	422205	D2YP	EET CF	05/21/24 08:19
Total/NA	Prep	3510C			422219	C3AA	EET CF	05/21/24 08:00
Total/NA	Analysis	8081B		1	422812	BW2O	EET CF	05/28/24 15:42
Total/NA	Prep	3005A			421948	KM3E	EET CF	05/17/24 09:30
Total/NA	Analysis	6020B		1	422792	NFT2	EET CF	05/24/24 20:54
Total/NA	Prep	3005A			421948	KM3E	EET CF	05/17/24 09:30
Total/NA	Analysis	6020B		1	423059	NFT2	EET CF	05/29/24 21:39
Total/NA	Prep	9030B			613583	BLW	EET CLE	05/20/24 07:41
Total/NA	Analysis	9034		1	613623	BLW	EET CLE	05/20/24 09:22
Total/NA	Analysis	I-3765-85		1	421986	HE7K	EET CF	05/17/24 08:46
Total/NA	Analysis	Field Sampling		1	422183	BJ0R	EET CF	05/14/24 10:30

Client Sample ID: Trip Blank
Lab Sample ID: 310-281290-7
Date Collected: 05/14/24 00:00
Matrix: Water
Date Received: 05/15/24 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	422207	D2YP	EET CF	05/21/24 12:29

Laboratory References:
EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401
EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Accreditation/Certification Summary

Client: AECOM
Job ID: 310-281290-1
Project/Site: Black Hawk County Landfill (IDNR)

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	06-02-24

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8260D		Groundwater	m,p-Xylene
8260D		Groundwater	o-Xylene
8260D		Water	m,p-Xylene
8260D		Water	o-Xylene
Field Sampling		Groundwater	Field Turbidity

Laboratory: Eurofins Cleveland

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-28-25
Georgia	State	4062	02-27-25
Illinois	NELAP	200004	07-31-24
Iowa	State	421	06-01-25
Kentucky (UST)	State	112225	02-27-25
Kentucky (WW)	State	KY98016	12-30-24
Minnesota	NELAP	039-999-348	12-31-24
New Jersey	NELAP	OH001	06-30-24
New York	NELAP	10975	04-02-25
Ohio VAP	State	ORELAP 4062	02-27-25
Oregon	NELAP	4062	02-27-25
Pennsylvania	NELAP	68-00340	08-31-24
Texas	NELAP	T104704517-22-19	08-31-24
USDA	US Federal Programs	P330-18-00281	01-05-27
Virginia	NELAP	460175	09-14-24
West Virginia DEP	State	210	12-31-24

Method Summary

Client: AECOM
Job ID: 310-281290-1
Project/Site: Black Hawk County Landfill (IDNR)

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CF
8081B	Organochlorine Pesticides (GC)	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
9034	Sulfide, Acid soluble and Insoluble (Titrimetric)	SW846	EET CLE
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
Field Sampling	Field Sampling	EPA	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET CF
5030B	Purge and Trap	SW846	EET CF
9030B	Sulfide, Distillation (Acid Soluble and Insoluble)	SW846	EET CLE

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

eurofins | Environment Testing America

310-281290 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: AECOM			
City/State: CITY Detroit STATE MI		Project: BHCo FDNR	
Receipt Information			
Date/Time Received: DATE 5/15/24	TIME 0930	Received By:	

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ Lab Field Services ☑ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers			
Sample(s) received in Cooler?	☑ Yes ☐ No	*If yes:* Cooler ID:	
Multiple Coolers?	☐ Yes ☑ No	*If yes:* Cooler # _____ of _____	
Cooler Custody Seals Present?	☐ Yes ☑ No	*If yes:* Cooler custody seals intact? ☐ Yes ☐ No	
Sample Custody Seals Present?	☐ Yes ☑ No	*If yes:* Sample custody seals intact? ☐ Yes ☐ No	
Trip Blank Present?	☑ Yes ☐ No	*If yes:* Which VOA samples are in cooler? ↓	

Temperature Record			
Coolant:	☑ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE		
Thermometer ID:	R	Correction Factor (°C):	0 0
• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C):	7.4	Corrected Temp (°C):	7.4

• **Sample Container Temperature**	CONTAINER 1	CONTAINER 2
Container(s) used:	1 5 NS	1 5 NS
Uncorrected Temp (°C):	5.9	5.1
Corrected Temp (°C):	5.9	5.1

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE: If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

Eurofins Cedar Falls
3019 Venture Way

Cedar Falls, IA 50613
phone 319 277.2401 fax 319.277 2425

Chain of Custody Record

eurofins Environment Testing America

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other IDNR

Eurofins Environment Testing America

Client Contact	**Project Manager: Chris Oelkers**		COC No
AECOM	Email Christopher Oelkers@aecom com	**Site Contact:**	**Date:** 5-15-24	1 of 3 COCs
501 Sycamore Street, Suite 222	**Tel/Fax:319-296-6878**	**Lab Contact:**	**Carrier:**	TALS Project #
Waterloo, IA 50703	**Analysis Turnaround Time**			Sampler
(319) 232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS			**For Lab Use Only:**
(xxx) xxx-xxxx FAX	TAT if different from Below ____			Walk-in Client:
Project Name Black Hawk Co IDNR	☑ 2 weeks			Lab Sampling
Site Black Hawk County Landfill	☐ 1 week			Job / SDG No
P O #	☐ 2 days			
	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Appendix I, TSS	Appendix II, TSS	2,4-D	4,4'-DDD	beta-BHC	delta BHC	Endosulfan I	Endosulfan sulfate	Endrin aldehyde	Silvex	Sulfide	Sample Specific Notes
MW-603B	5-14-24	1400	G	GW	5	N		X											Turbidity - 1.86 NTU
MW-604B			G	GW		N		X											
MW-709B			G	GW		N		X											
MW-710B			G	GW		N		X											
MW-711B			G	GW		N		X											
MW-712B			G	GW		N		X											
GUE-1			G	GW		N		X											
GUE-2			G	GW		N		X											
GUW1-1			G	GW		N		X											
GUW2-1	5-14-24	1330	G	GW	5	N		X											Turbidity - 9.74 NTU
Equipment Blank-2			G	GW		N		X											
GUW2-1-FD	5-14-24	1330	G	GW	5	N		X											

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for ____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No | Cooler Temp (°C): Obs'd. ____ Corr'd. ____ | Therm ID No. ____

Relinquished by: Ben Porter	Company: Aecom	Date/Time: 5-15-24	Received by:	Company:	Date/Time: 5/15/24 0930
Relinquished by:	Company:	Date/Time	Received by:	Company:	Date/Time
Relinquished by:	Company:	Date/Time	Received in Laboratory by:	Company:	Date/Time

Eurofins Cedar Falls
3019 Venture Way

Cedar Falls, IA 50613
phone 319.277.2401 fax 319.277 2425

Chain of Custody Record

eurofins | Environment Testing America

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other IDNR

Eurofins Environment Testing America

Client Contact	**Project Manager: Chris Oelkers**		COC No
AECOM	Email Christopher Oelkers@aecom com	**Site Contact:**	**Date:** 5-15-24 — 2 of 3 COCs
501 Sycamore Street, Suite 222	**Tel/Fax:319-296-6878**	**Lab Contact:**	**Carrier:** — TALS Project #
Waterloo, IA 50703	**Analysis Turnaround Time** ☑ CALENDAR DAYS ☐ WORKING DAYS		Sampler
(319) 232-6531 Phone	TAT if different from Below ☐		**For Lab Use Only:** Walk-in Client
(xxx) xxx-xxxx FAX	☑ 2 weeks		Lab Sampling
Project Name Black Hawk Co IDNR	☐ 1 week		
Site Black Hawk County Landfill	☐ 2 days		Job / SDG No
P O #	☐ 1 day		

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Appendix I, TSS	Appendix II, TSS	2,4-D	4,4'-DDD	beta-BHC	delta BHC	Endosulfan I	Endosulfan sulfate	Endrin aldehyde	Silvex	Sulfide						Sample Specific Notes
OW-101B			G	GW		N		X																
OW-105B			G	GW		N		X																
OW-113B			G	GW		N		X										X						
OW-114B	5-14-24	1200	G	GW	5	N		X																Turbidity - 19.1 NTU
OW-205B			G	GW		N		X			X			X				X						
OW-209B			G	GW		N		X																
OW-212B			G	GW		N		X																
OW-213BR			G	GW		N		X																
OW-216BR	5-14-24	1300	G	GW	5	N		X																Turbidity - 3.71 NTU
OW-219B			G	GW		N		X																
OW-219B-FD			G	GW		N		X																

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No		Cooler Temp (°C) Obs'd. _____ Corr'd _____		Therm ID No. _____
Relinquished by: Ben Porter	Company: Aecom	Date/Time: 5-15-24	Received by:	Company:	Date/Time: 5/15/24 0930
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time
Relinquished by:	Company:	Date/Time	Received in Laboratory by:	Company:	Date/Time

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6/5/2024 (Rev. 1)

Eurofins Cedar Falls
3019 Venture Way

Cedar Falls, IA 50613
phone 319 277.2401 fax 319.277 2425

Chain of Custody Record

eurofins Environment Testing America

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other IDNR

Eurofins Environment Testing America

Client Contact	Project Manager: Chris Oelkers	Site Contact:	Date: 5-15-24	COC No
AECOM	Email Christopher Oelkers@aecom com	Lab Contact:	Carrier:	3 of 3 COCs
501 Sycamore Street, Suite 222	Tel/Fax:319-296-6878			TALS Project #
Waterloo, IA 50703	Analysis Turnaround Time			Sampler
(319) 232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(xxx) xxx-xxxx FAX	TAT if different from Below ____			Walk-in Client:
Project Name Black Hawk Co IDNR	☑ 2 weeks			Lab Sampling
Site Black Hawk County Landfill	☐ 1 week			Job / SDG No
P O #	☐ 2 days			
	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Appendix I, TSS	Appendix II, TSS	2,4-D	4,4'-DDD	beta-BHC	delta BHC	Endosulfan I	Endosulfan sulfate	Endrin aldehyde	Silvex	Sulfide	Sample Specific Notes
OW-401B	5-14-24	1030	G	GW	10	N		X		X		X	X		X	X	X	X	Turbidity – 3.37 NTU
OW-402B			G	GW		N		X											
MW-409B			G	GW		N		X											
OW-410B			G	GW		N		X											
OW-411B			G	GW		N		X											
OW-412B			G	GW		N		X											
OW-413B			G	GW		N		X											
OW-414B			G	GW		N		X											
MW-501B			G	GW		N		X											
MW-602B			G	GW		N		X											
MW-602B-FD			G	GW		N		X											
Trip Blank	5-14-24	0600	G	W	2	N		X											

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for ____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No	Cooler Temp (°C) Obs'd. ____ Corr'd ____	Therm ID No. ____

Relinquished by: Ben Porter	Company: Aecom	Date/Time: 5-15-24	Received by:	Company:	Date/Time: 5/15/24 0910
Relinquished by:	Company:	Date/Time	Received by:	Company:	Date/Time
Relinquished by:	Company:	Date/Time	Received in Laboratory by:	Company:	Date/Time

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone: 319-277-2401 Fax: 319-277-2425

0.2/1.7

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Bindert, Zach T	Carrier Tracking No(s):	COC No: 310-72467.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Zach.Bindert@et.eurofinsus.com	State of Origin: Iowa	Page: Page 1 of 1
Company: Eurofins Environment Testing North Centr		Accreditations Required (See note): State - Iowa; State Program - Iowa		Job #: 310-281290-1
Address: 180 S. Van Buren Avenue, ,	Due Date Requested: 5/29/2024			Preservation Codes: -
City: Barberton	TAT Requested (days):			
State, Zip: OH, 44203				
Phone: 330-497-9396(Tel) 330-497-0772(Fax)	PO #:			
Email:	WO #:			
Project Name: Black Hawk County Landfill (IDNR)	Project #: 31017149			
Site: 310 - Black Hawk County (IDNR)	SSOW#:			Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9034_Calc/9030B Sulfide	Total Number of containers	Special Instructions/Note:
			Preservation Code:						G005
OW-401B (310-281290-6)	5/14/24	10:30 Central		Water			X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing North Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing North Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing North Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing North Central, LLC.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	[signature]	5/15/24 1610		JESSICA RIGDON	5-16-24 1030	ETNC
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Eurofins – Cleveland Sample Receipt Form/Narrative Login # :
Barberton Facility

Client Eurofins-CF Site Name

Cooler unpacked by: ONQ

Cooler Received on 5-16-24 Opened on 5-16-24

FedEx. 1st Grd (Exp) UPS FAS Waypoint Client Drop Off Eurofins Courier Other

Receipt After-hours Drop-off Date/Time Storage Location

Eurofins Cooler # EC Foam Box Client Cooler Box Other

Packing material used. Bubble Wrap Foam Plastic Bag (None) Other

COOLANT: (Wet Ice) Blue Ice Dry Ice Water None

1 Cooler temperature upon receipt ☐ See Multiple Cooler Form

IR GUN # 19 (CF +1.5 °C) Observed Cooler Temp 0.2 °C Corrected Cooler Temp. 1.7 °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1	(Yes) No	
-Were the seals on the outside of the cooler(s) signed & dated?	(Yes) No NA	
-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)?	Yes (No)	
-Were tamper/custody seals intact and uncompromised?	(Yes) No NA	
3 Shippers' packing slip attached to the cooler(s)?	(Yes) No	
4. Did custody papers accompany the sample(s)?	(Yes) No	
5 Were the custody papers relinquished & signed in the appropriate place?	(Yes) No	
6 Was/were the person(s) who collected the samples clearly identified on the COC?	Yes (No)	
7 Did all bottles arrive in good condition (Unbroken)?	(Yes) No	
8 Could all bottle labels (ID/Date/Time) be reconciled with the COC?	(Yes) No	
9 For each sample, does the COC specify preservatives (Y(N)) # of containers (Y/N), and sample type of grab/comp(Y/N)?		
10 Were correct bottle(s) used for the test(s) indicated?	(Yes) No	
11 Sufficient quantity received to perform indicated analyses?	(Yes) No	
12. Are these work share samples and all listed on the COC?	(Yes) No	
If yes, Questions 13-17 have been checked at the originating laboratory		
13 Were all *preserved sample(s) at the correct pH upon receipt?*	Yes No NA	pH Strip Lot# HC439975
14 Were VOAs on the COC?	Yes No	
15 Were air bubbles >6 mm in any VOA vials? ● ← Larger than this	Yes No NA	
16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot #	Yes No	
17 Was a LL Hg or Me Hg trip blank present?	Yes No	

Tests that are not checked for pH by Receiving

VOAs
Oil and Grease
TOC

Contacted PM Date by via Verbal Voice Mail Other

Concerning

18. *CHAIN OF CUSTODY & SAMPLE DISCREPANCIES* ☐ *additional next page* | *Samples processed by:*

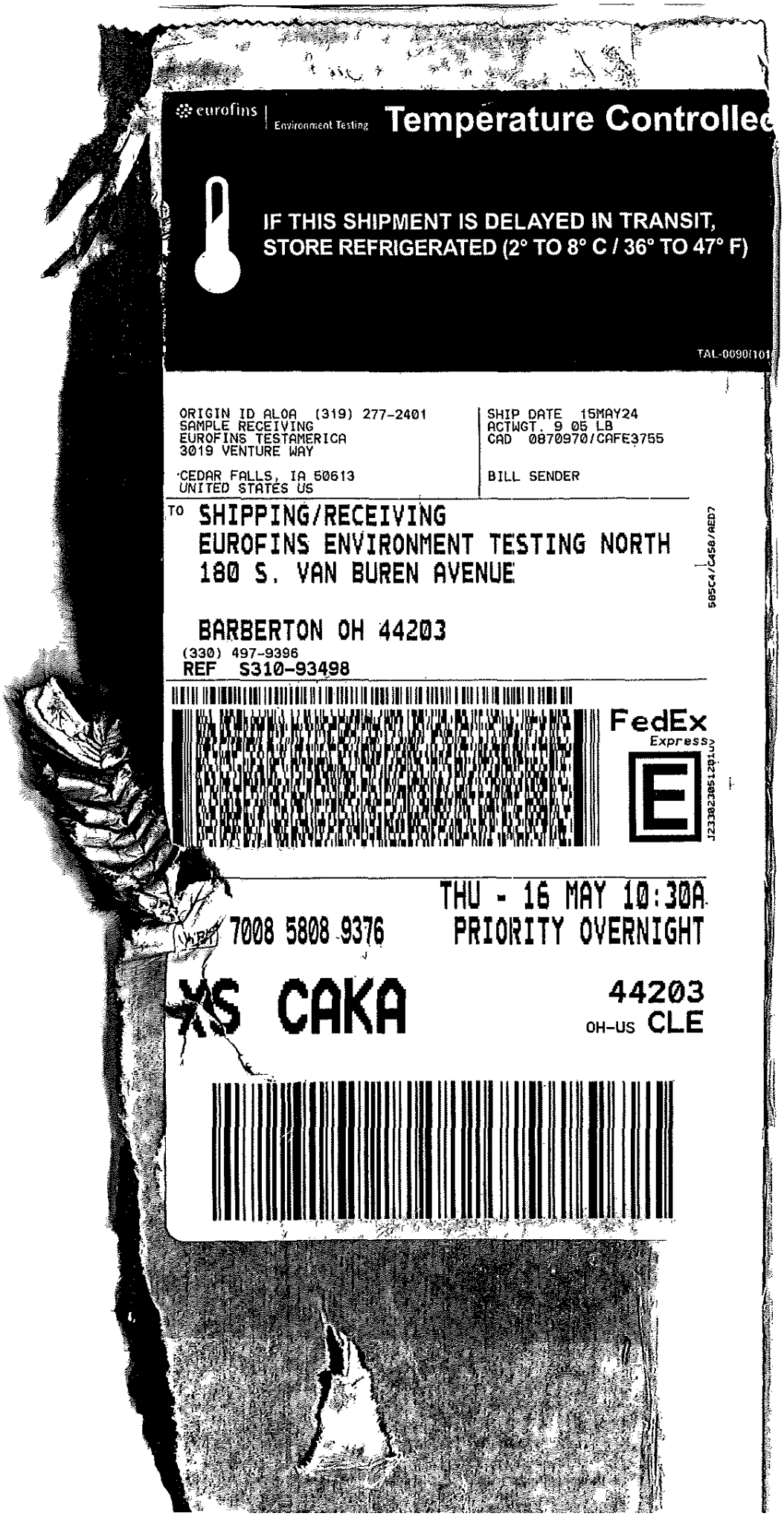
19 SAMPLE CONDITION

Sample(s) were received after the recommended holding time had expired.
Sample(s) were received in a broken container
Sample(s) were received with bubble >6 mm in diameter (Notify PM)

20 SAMPLE PRESERVATION

Sample(s) were further preserved in the laboratory
Time preserved Preservative(s) added/Lot number(s)

VOA Sample Preservation - Date/Time VOAs Frozen



eurofins | Environment Testing

Temperature Controlled

IF THIS SHIPMENT IS DELAYED IN TRANSIT,
STORE REFRIGERATED (2° TO 8° C / 36° TO 47° F)

TAL-0090(101

ORIGIN ID ALOA (319) 277-2401
SAMPLE RECEIVING
EUROFINS TESTAMERICA
3019 VENTURE WAY

CEDAR FALLS, IA 50613
UNITED STATES US

SHIP DATE 15MAY24
ACTWGT 9 05 LB
CAD 0870970/CAFE3755

BILL SENDER

TO SHIPPING/RECEIVING
EUROFINS ENVIRONMENT TESTING NORTH
180 S. VAN BUREN AVENUE

BARBERTON OH 44203
(330) 497-9396
REF S310-93498

585C4/C458/AED7

FedEx Express

J233023051201uv

THU - 16 MAY 10:30A
PRIORITY OVERNIGHT

7008 5808 9376

XS CAKA

44203
OH-US CLE

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone: 319-277-2401 Fax: 319-277-2425

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Bindert, Zach T	Carrier Tracking No(s):	COC No: 310-72464.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Zach.Bindert@et.eurofinsus.com	State of Origin: Iowa	Page: Page 1 of 1
Company: Eurofins Lancaster Laboratories Environm		Accreditations Required (See note): State - Iowa; State Program - Iowa		Job #: 310-281290-1
Address: 2425 New Holland Pike, ,	Due Date Requested: 5/29/2024			
City: Lancaster	TAT Requested (days):			
State, Zip: PA, 17601				
Phone: 717-656-2300(Tel)	PO #:			
Email:	WO #:			
Project Name: Black Hawk County Landfill (IDNR)	Project #: 31017149			
Site: 310 - Black Hawk County (IDNR)	SSOW#:			

Analysis Requested

Preservation Codes:
-

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8151A/8151A_AP (MOD) 2,4-D and Silvex	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
OW-401B (310-281290-6)	5/14/24	10:30 Central		Water			X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing North Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing North Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing North Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing North Central, LLC.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
		5/15/24 1550				
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 5/16/24 09:55	Company ECLGT

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: R:6.4 C:6.1

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-281290-1

Login Number: 281290
List Number: 1
Creator: Bennett, Samantha

List Source: Eurofins Cedar Falls

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Russ Henning
AECOM
501 Sycamore Street
Suite #222
Waterloo, Iowa 50703

Generated 6/6/2024 1:09:13 AM

JOB DESCRIPTION

Black Hawk County - OW-401B and P-213C

JOB NUMBER

310-282397-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



Generated
6/6/2024 1:09:13 AM

Authorized for release by
Zach Bindert, Client Service Manager
Zach.Bindert@et.eurofinsus.com
(319)277-2401

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Job ID: 310-282397-1 — Eurofins Cedar Falls

Job Narrative
310-282397-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 5/30/2024 4:25 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.0°C.

Herbicides
Method 8151A: The continuing calibration verification (CCV) associated with batch 410-513167 recovered outside acceptance criteria, low biased, for DCAA on one column. Results are reported from the passing column. OW-401B (310-282397-1) and P-213C (310-282397-2)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Sample Summary

Client: AECOM
Job ID: 310-282397-1
Project/Site: Black Hawk County - OW-401B and P-213C

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-282397-1	OW-401B	Water	05/30/24 11:30	05/30/24 16:25
310-282397-2	P-213C	Water	05/30/24 12:30	05/30/24 16:25

Detection Summary

Client: AECOM
Job ID: 310-282397-1
Project/Site: Black Hawk County - OW-401B and P-213C

Client Sample ID: OW-401B
Lab Sample ID: 310-282397-1

No Detections.

Client Sample ID: P-213C
Lab Sample ID: 310-282397-2

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: AECOM
Job ID: 310-282397-1
Project/Site: Black Hawk County - OW-401B and P-213C

Client Sample ID: OW-401B
Lab Sample ID: 310-282397-1
Date Collected: 05/30/24 11:30
Matrix: Water
Date Received: 05/30/24 16:25

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	<0.302		0.724	0.302	ug/L		06/03/24 15:46	06/04/24 13:07	1
Silvex (2,4,5-TP)	<0.0266		0.0603	0.0266	ug/L		06/03/24 15:46	06/04/24 13:07	1
2,4,5-T	<0.0784		0.181	0.0784	ug/L		06/03/24 15:46	06/04/24 13:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*58*		*34 - 142*	*06/03/24 15:46*	*06/04/24 13:07*	*1*
DCAA	*81*		*34 - 142*	*06/03/24 15:46*	*06/04/24 13:07*	*1*

Client: AECOM
Job ID: 310-282397-1
Project/Site: Black Hawk County - OW-401B and P-213C

Client Sample ID: P-213C
Lab Sample ID: 310-282397-2
Date Collected: 05/30/24 12:30
Matrix: Water
Date Received: 05/30/24 16:25

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	<0.286		0.687	0.286	ug/L		06/03/24 15:46	06/04/24 13:35	1
Silvex (2,4,5-TP)	<0.0252		0.0573	0.0252	ug/L		06/03/24 15:46	06/04/24 13:35	1
2,4,5-T	<0.0744		0.172	0.0744	ug/L		06/03/24 15:46	06/04/24 13:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*38*		*34 - 142*	*06/03/24 15:46*	*06/04/24 13:35*	*1*
DCAA	*46*		*34 - 142*	*06/03/24 15:46*	*06/04/24 13:35*	*1*

Definitions/Glossary

Client: AECOM
Job ID: 310-282397-1
Project/Site: Black Hawk County - OW-401B and P-213C

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Surrogate Summary

Client: AECOM
Job ID: 310-282397-1
Project/Site: Black Hawk County - OW-401B and P-213C

Method: 8151A - Herbicides (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)											
Lab Sample ID	Client Sample ID	DCPAA1 (34-142)	DCPAA2 (34-142)										
310-282397-1	OW-401B	58	81										
310-282397-2	P-213C	38	46										
LCS 410-513048/2-A	Lab Control Sample	41	50										
LCSD 410-513048/3-A	Lab Control Sample Dup	50	63										
MB 410-513048/1-A	Method Blank	38	43										

Surrogate Legend

DCPAA = DCAA

Method: 8151A - Herbicides (GC)

Lab Sample ID: MB 410-513048/1-A
Matrix: Water
Analysis Batch: 513167

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 513048

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	0.3494	J	0.600	0.250	ug/L		06/03/24 15:46	06/04/24 08:53	1
Silvex (2,4,5-TP)	<0.0220		0.0500	0.0220	ug/L		06/03/24 15:46	06/04/24 08:53	1
2,4,5-T	<0.0650		0.150	0.0650	ug/L		06/03/24 15:46	06/04/24 08:53	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*38*		*34 - 142*	*06/03/24 15:46*	*06/04/24 08:53*	*1*
DCAA	*43*		*34 - 142*	*06/03/24 15:46*	*06/04/24 08:53*	*1*

Lab Sample ID: LCS 410-513048/2-A
Matrix: Water
Analysis Batch: 513167

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 513048

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
2,4-D			2.51	1.738		ug/L		69	53 - 159		
Silvex (2,4,5-TP)			0.250	0.1800		ug/L		72	62 - 170		
2,4,5-T			0.250	0.1807		ug/L		72	57 - 171		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCAA	*41*		*34 - 142*
DCAA	*50*		*34 - 142*

Lab Sample ID: LCSD 410-513048/3-A
Matrix: Water
Analysis Batch: 513167

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 513048

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,4-D			2.51	1.682		ug/L		67	53 - 159	3	30
Silvex (2,4,5-TP)			0.250	0.1794		ug/L		72	62 - 170	0	30
2,4,5-T			0.250	0.1751		ug/L		70	57 - 171	3	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
DCAA	*50*		*34 - 142*
DCAA	*63*		*34 - 142*

QC Association Summary

Client: AECOM
Job ID: 310-282397-1
Project/Site: Black Hawk County - OW-401B and P-213C

GC Semi VOA

Prep Batch: 513048

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282397-1	OW-401B	Total/NA	Water	8151A	
310-282397-2	P-213C	Total/NA	Water	8151A	
MB 410-513048/1-A	Method Blank	Total/NA	Water	8151A	
LCS 410-513048/2-A	Lab Control Sample	Total/NA	Water	8151A	
LCSD 410-513048/3-A	Lab Control Sample Dup	Total/NA	Water	8151A	

Analysis Batch: 513167

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282397-1	OW-401B	Total/NA	Water	8151A	513048
310-282397-2	P-213C	Total/NA	Water	8151A	513048
MB 410-513048/1-A	Method Blank	Total/NA	Water	8151A	513048
LCS 410-513048/2-A	Lab Control Sample	Total/NA	Water	8151A	513048
LCSD 410-513048/3-A	Lab Control Sample Dup	Total/NA	Water	8151A	513048

Lab Chronicle

Client: AECOM
Job ID: 310-282397-1
Project/Site: Black Hawk County - OW-401B and P-213C

Client Sample ID: OW-401B
Lab Sample ID: 310-282397-1

Date Collected: 05/30/24 11:30
Matrix: Water
Date Received: 05/30/24 16:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	8151A			513048	QJZ6	ELLE	06/03/24 15:46
Total/NA	Analysis	8151A		1	513167	UAMZ	ELLE	06/04/24 13:07

Client Sample ID: P-213C
Lab Sample ID: 310-282397-2

Date Collected: 05/30/24 12:30
Matrix: Water
Date Received: 05/30/24 16:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	8151A			513048	QJZ6	ELLE	06/03/24 15:46
Total/NA	Analysis	8151A		1	513167	UAMZ	ELLE	06/04/24 13:35

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: AECOM
Job ID: 310-282397-1
Project/Site: Black Hawk County - OW-401B and P-213C

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Iowa	State	361	03-01-24 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: AECOM
Job ID: 310-282397-1
Project/Site: Black Hawk County - OW-401B and P-213C

Method	Method Description	Protocol	Laboratory
8151A	Herbicides (GC)	SW846	ELLE
8151A	Extraction (Herbicides)	SW846	ELLE

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

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310-282397 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: AECOM

City/State: CITY Doterico STATE IA | Project: BHC / 93811

Receipt Information

Date/Time Received: DATE 53024 TIME 1625 | Received By: ID

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ Lab Field Services ☑ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☑ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☐ Yes ☑ No *If yes:* Cooler # _____ of _____

Cooler Custody Seals Present? ☐ Yes ☑ No *If yes:* Cooler custody seals intact? ☐ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☑ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☐ Yes ☐ No *If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☑ Wet Ice ☐ Blue Ice ☐ Dry Ice ☐ Other:_____ ☐ NONE

Thermometer ID: X | Correction Factor (°C): 0.0

Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): | Corrected Temp (°C):

Sample Container Temperature

	CONTAINER 1	CONTAINER 2
Container(s) used:	Amber QT N P213C ~~P213~~	
Uncorrected Temp (°C):	2.0	
Corrected Temp (°C):	2.0	

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone: 319-277-2401 Fax: 319-277-2425

Chain of Custody Record

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Client Information	Sampler: Ben Porter	Lab PM: Bindert, Zach T	Carrier Tracking No(s):	COC No: 310-93811-25685 1
Client Contact: Russ Henning	Phone:	E-Mail: Zach.Bindert@et.eurofinsus.com	State of Origin:	Page: Page 1 of 1
Company: AECOM	PWSID:			Job #:
Address: 501 Sycamore Street Suite #222	Due Date Requested:			
City: Waterloo	TAT Requested (days): Standard			
State, Zip: IA, 50703	Compliance Project: Δ Yes Δ No			
Phone:	PO #: Purchase Order not required			
Email: Russ.Henning@aecom com	WO #:			
Project Name: Black Hawk County - OW-401B and P-213C	Project #: 31017149			
Site: Iowa	SSOW#:			

Analysis Requested

Preservation Codes: N - None

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8151A - Default List: Herbicides	Total Number of containers	Special Instructions/Note:
			Preservation Code:		X	X	N	X	
OW-401B	5-30-24	1130	G	Water			X		
P-213C	5-30-24	1230	G	Water			X		

Possible Hazard Identification
☐ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* ☐ *Poison B* ☐ *Unknown* ☐ *Radiological*

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For _____ Months*

Deliverable Requested. I, II, III, IV, Other (specify)

Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Ben Porter	5-30-24	Aecom		53024 1625	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 04/02/2024

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone: 319-277-2401 Fax: 319-277-2425

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Bindert, Zach T	Carrier Tracking No(s):	COC No: 310-72994.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Zach.Bindert@et.eurofinsus.com	State of Origin: Iowa	Page: Page 1 of 1
Company: Eurofins Lancaster Laboratories Environm		Accreditations Required (See note): State - Iowa; State Program - Iowa		Job #: 310-282397-1
Address: 2425 New Holland Pike, ,	Due Date Requested: 6/12/2024			
City: Lancaster	TAT Requested (days):			
State, Zip: PA, 17601				
Phone: 717-656-2300(Tel)	PO #:			
Email:	WO #:			
Project Name: Black Hawk County - OW-401B and P-213C	Project #: 31017149			
Site: 310 - Black Hawk County (IDNR)	SSOW#:			

Analysis Requested

Preservation Codes:
-

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8151A/8151A_AP Default List	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
OW-401B (310-282397-1)	5/30/24	11:30 Central		Water			X	2	
P-213C (310-282397-2)	5/30/24	12:30 Central		Water			X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing North Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing North Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing North Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing North Central, LLC.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		5/31/24 1255				
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 6/1/24 1000	Company EUET

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 1.1/0.7 3.5/3.2

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-282397-1

Login Number: 282397

List Source: Eurofins Cedar Falls

List Number: 1

Creator: Costello, Mackenzie K

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-282397-1

Login Number: 282397
List Number: 2
Creator: McCaskey, Jonathan

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC
List Creation: 06/01/24 02:09 PM

Question	Answer	Comment
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature acceptable,where thermal pres is required(</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV:Container Temp acceptable,where thermal pres is required (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
Sample custody seals are intact.	N/A	
VOA sample vials do not have headspace >6mm in diameter (none, if from WV)?	N/A	

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ANALYTICAL REPORT

PREPARED FOR

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501 Sycamore Street
Suite #222
Waterloo, Iowa 50703

Generated 6/10/2024 9:49:10 AM

JOB DESCRIPTION

Black Hawk County Landfill (IDNR)

JOB NUMBER

310-282049-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

my EOL

Job Notes

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The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



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Job Narrative
310-282049-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 5/24/2024 11:20 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 3.1°C and 3.6°C.

GC/MS VOA
Method 8260D: The following samples were collected in a properly preserved vial; however, the pH was outside the required criteria when verified by the laboratory. The samples were analyzed within the 7-day holding time specified for unpreserved samples: OW-226B (310-282049-3) and OW-227B (310-282049-4).

Method 8260D: The continuing calibration verification (CCV) associated with batch 310-423506 recovered above the upper control limit for Carbon tetrachloride (33.4%D). The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated sample is impacted: (CCV 310-423506/3).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC/MS Semi VOA
Method 8270E: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 310-422930. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

Method 8270E: The laboratory control sample and/or the laboratory control sample duplicate (LCS/LCSD) for preparation batch 310-422930 and analytical batch 310-423476 recovered outside control limits for the following analyte(s): p-Phenylene diamine. p-Phenylene diamine has been identified as a poor performing analyte when analyzed using this method; therefore, re-extraction/re-analysis was not performed.

Method 8270E: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for preparation batch 310-422930 and analytical batch 310-423476 recovered outside control limits for the following analytes: Famphur and Kepone. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Method 8270E: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 310-422930 and analytical batch 310-423476 recovered outside control limits for the following analytes: 3,3'-Dimethylbenzidine, Methapyrilene and p-Phenylene diamine.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

PCBs
Method 8082A: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 310-422933. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

Method 8082A: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated

with preparation batch 310-422933.The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Pesticides
Method 8081B: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 310-422933. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

Method 8081B: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 310-422933.The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
Method 6020B: The initial calibration verification (ICV) result for batch 310-423570 was above the upper control limit. The affected analytes are: Silver. Sample results were non-detects, and have been reported as qualified data. OW-226B (310-282049-3), OW-227B (310-282049-4), Equipment Blank 3 (310-282049-5), OW-113B (310-282049-6), Duplicate 5 (310-282049-7), P-213C (310-282049-8) and P-214CR (310-282049-9)

Method 6020B: The low level check standard recovery associated with batch 310-423570 is outside the acceptance criteria for the following analyte(s): Silver. Sample results were non-detects, and have been reported as qualified data. OW-226B (310-282049-3), OW-227B (310-282049-4), Equipment Blank 3 (310-282049-5), OW-113B (310-282049-6), Duplicate 5 (310-282049-7), P-213C (310-282049-8) and P-214CR (310-282049-9)

Method 6020B: The laboratory control sample (LCS) for preparation batch 310-422763 and analytical batch 310-423570 recovered outside control limits for the following analytes: Silver. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported. OW-226B (310-282049-3), OW-227B (310-282049-4), Equipment Blank 3 (310-282049-5), OW-113B (310-282049-6), Duplicate 5 (310-282049-7), P-213C (310-282049-8) and P-214CR (310-282049-9)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Field Service / Mobile Lab
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Sample Summary

Client: AECOM
Job ID: 310-282049-1
Project/Site: Black Hawk County Landfill (IDNR)

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-282049-2	Trip Blank	Water	05/23/24 05:00	05/24/24 11:20
310-282049-3	OW-226B	Water	05/23/24 15:30	05/24/24 11:20
310-282049-4	OW-227B	Water	05/23/24 17:00	05/24/24 11:20
310-282049-5	Equipment Blank 3	Water	05/23/24 17:00	05/24/24 11:20
310-282049-6	OW-113B	Water	05/23/24 14:15	05/24/24 11:20
310-282049-7	Duplicate 5	Water	05/23/24 00:00	05/24/24 11:20
310-282049-8	P-213C	Water	05/23/24 10:30	05/24/24 11:20
310-282049-9	P-214CR	Water	05/23/24 13:30	05/24/24 11:20

Detection Summary

Client: AECOM
Job ID: 310-282049-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Trip Blank — Lab Sample ID: 310-282049-2

No Detections.

Client Sample ID: OW-226B — Lab Sample ID: 310-282049-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	0.755	J	1.00	0.220	ug/L	1		8260D	Total/NA
Acetone	5.36	J	10.0	3.10	ug/L	1		8260D	Total/NA
Benzene	2.02		0.500	0.220	ug/L	1		8260D	Total/NA
Arsenic	8.05		2.00	0.530	ug/L	1		6020B	Total/NA
Barium	1450		2.00	0.660	ug/L	1		6020B	Total/NA
Cadmium	0.148	J	0.200	0.100	ug/L	1		6020B	Total/NA
Chromium	9.35		5.00	1.20	ug/L	1		6020B	Total/NA
Cobalt	18.8		0.500	0.170	ug/L	1		6020B	Total/NA
Copper	3.06	J	5.00	1.80	ug/L	1		6020B	Total/NA
Lead	0.978		0.500	0.260	ug/L	1		6020B	Total/NA
Nickel	70.5		5.00	2.10	ug/L	1		6020B	Total/NA
Vanadium	2.74	J	5.00	1.10	ug/L	1		6020B	Total/NA
Total Suspended Solids	48.0		15.0	11.1	mg/L	1		I-3765-85	Total/NA
Field Turbidity	24.86				NTU	1		Field Sampling	Total/NA

Client Sample ID: OW-227B — Lab Sample ID: 310-282049-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	0.647	J	1.00	0.220	ug/L	1		8260D	Total/NA
1,4-Dichlorobenzene	0.371	J	1.00	0.230	ug/L	1		8260D	Total/NA
Acetone	8.33	J	10.0	3.10	ug/L	1		8260D	Total/NA
Benzene	2.99		0.500	0.220	ug/L	1		8260D	Total/NA
Chloroethane	0.804	J	4.00	0.790	ug/L	1		8260D	Total/NA
Arsenic	16.9		2.00	0.530	ug/L	1		6020B	Total/NA
Barium	1920		2.00	0.660	ug/L	1		6020B	Total/NA
Cadmium	0.216		0.200	0.100	ug/L	1		6020B	Total/NA
Chromium	6.53		5.00	1.20	ug/L	1		6020B	Total/NA
Cobalt	23.5		0.500	0.170	ug/L	1		6020B	Total/NA
Lead	0.659		0.500	0.260	ug/L	1		6020B	Total/NA
Nickel	78.4		5.00	2.10	ug/L	1		6020B	Total/NA
Vanadium	2.48	J	5.00	1.10	ug/L	1		6020B	Total/NA
Total Suspended Solids	68.0		15.0	11.1	mg/L	1		I-3765-85	Total/NA
Field Turbidity	9.52				NTU	1		Field Sampling	Total/NA

Client Sample ID: Equipment Blank 3 — Lab Sample ID: 310-282049-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.573	J	2.00	0.530	ug/L	1		6020B	Total/NA
Barium	24.3		2.00	0.660	ug/L	1		6020B	Total/NA

Client Sample ID: OW-113B — Lab Sample ID: 310-282049-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	2.19		2.00	0.530	ug/L	1		6020B	Total/NA
Barium	14.1		2.00	0.660	ug/L	1		6020B	Total/NA
Chromium	4.10	J	5.00	1.20	ug/L	1		6020B	Total/NA
Cobalt	14.4		0.500	0.170	ug/L	1		6020B	Total/NA
Nickel	20.9		5.00	2.10	ug/L	1		6020B	Total/NA
Total Suspended Solids	33.0		7.50	5.55	mg/L	1		I-3765-85	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: OW-113B (Continued) — Lab Sample ID: 310-282049-6

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Field Turbidity	135.60				NTU	1		Field Sampling	Total/NA

Client Sample ID: Duplicate 5 — Lab Sample ID: 310-282049-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	2.11		2.00	0.530	ug/L	1		6020B	Total/NA
Barium	13.5		2.00	0.660	ug/L	1		6020B	Total/NA
Chromium	21.0		5.00	1.20	ug/L	1		6020B	Total/NA
Cobalt	14.3		0.500	0.170	ug/L	1		6020B	Total/NA
Nickel	27.8		5.00	2.10	ug/L	1		6020B	Total/NA
Total Suspended Solids	16.3		5.00	3.70	mg/L	1		I-3765-85	Total/NA

Client Sample ID: P-213C — Lab Sample ID: 310-282049-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone (MEK)	2.30	J	10.0	2.10	ug/L	1		8260D	Total/NA
Barium	8.72		2.00	0.660	ug/L	1		6020B	Total/NA
Cobalt	3.25		0.500	0.170	ug/L	1		6020B	Total/NA
Nickel	9.60		5.00	2.10	ug/L	1		6020B	Total/NA
Field Turbidity	0.66				NTU	1		Field Sampling	Total/NA

Client Sample ID: P-214CR — Lab Sample ID: 310-282049-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	3.53	J	10.0	3.10	ug/L	1		8260D	Total/NA
Arsenic	0.830	J	2.00	0.530	ug/L	1		6020B	Total/NA
Barium	130		2.00	0.660	ug/L	1		6020B	Total/NA
Cobalt	0.190	J	0.500	0.170	ug/L	1		6020B	Total/NA
Total Suspended Solids	39.0		1.88	1.39	mg/L	1		I-3765-85	Total/NA
Field Turbidity	35.53				NTU	1		Field Sampling	Total/NA

This Detection Summary does not include radiochemical test results.

Client: AECOM
Job ID: 310-282049-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Trip Blank
Lab Sample ID: 310-282049-2
Date Collected: 05/23/24 05:00
Matrix: Water
Date Received: 05/24/24 11:20

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/29/24 11:58	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/29/24 11:58	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/29/24 11:58	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/29/24 11:58	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/29/24 11:58	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/29/24 11:58	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/29/24 11:58	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/29/24 11:58	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/29/24 11:58	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/29/24 11:58	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/29/24 11:58	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/29/24 11:58	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/29/24 11:58	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/29/24 11:58	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/29/24 11:58	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/29/24 11:58	1
Acetone	<3.10		10.0	3.10	ug/L			05/29/24 11:58	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/29/24 11:58	1
Benzene	<0.220		0.500	0.220	ug/L			05/29/24 11:58	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/29/24 11:58	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/29/24 11:58	1
Bromoform	<0.780		5.00	0.780	ug/L			05/29/24 11:58	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/29/24 11:58	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/29/24 11:58	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/29/24 11:58	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/29/24 11:58	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/29/24 11:58	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/29/24 11:58	1
Chloroform	<1.30		3.00	1.30	ug/L			05/29/24 11:58	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/29/24 11:58	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/29/24 11:58	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/29/24 11:58	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/29/24 11:58	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/29/24 11:58	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/29/24 11:58	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/29/24 11:58	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/29/24 11:58	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/29/24 11:58	1
Styrene	<0.370		1.00	0.370	ug/L			05/29/24 11:58	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/29/24 11:58	1
Toluene	<0.430		1.00	0.430	ug/L			05/29/24 11:58	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/29/24 11:58	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/29/24 11:58	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/29/24 11:58	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/29/24 11:58	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/29/24 11:58	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/29/24 11:58	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/29/24 11:58	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/29/24 11:58	1

Client: AECOM
Job ID: 310-282049-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Trip Blank
Lab Sample ID: 310-282049-2
Date Collected: 05/23/24 05:00
Matrix: Water
Date Received: 05/24/24 11:20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	114		73 - 130		05/29/24 11:58	1
Toluene-d8 (Surr)	95		80 - 120		05/29/24 11:58	1
4-Bromofluorobenzene (Surr)	104		80 - 120		05/29/24 11:58	1

Client: AECOM
Job ID: 310-282049-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-226B
Lab Sample ID: 310-282049-3
Date Collected: 05/23/24 15:30
Matrix: Water
Date Received: 05/24/24 11:20

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/29/24 16:53	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/29/24 16:53	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/29/24 16:53	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/29/24 16:53	1
1,1-Dichloroethane	**0.755**	**J**	1.00	0.220	ug/L			05/29/24 16:53	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/29/24 16:53	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/29/24 16:53	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/29/24 16:53	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/29/24 16:53	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/29/24 16:53	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/29/24 16:53	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/29/24 16:53	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/29/24 16:53	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/29/24 16:53	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/29/24 16:53	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/29/24 16:53	1
Acetone	**5.36**	**J**	10.0	3.10	ug/L			05/29/24 16:53	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/29/24 16:53	1
Benzene	**2.02**		0.500	0.220	ug/L			05/29/24 16:53	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/29/24 16:53	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/29/24 16:53	1
Bromoform	<0.780		5.00	0.780	ug/L			05/29/24 16:53	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/29/24 16:53	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/29/24 16:53	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/29/24 16:53	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/29/24 16:53	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/29/24 16:53	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/29/24 16:53	1
Chloroform	<1.30		3.00	1.30	ug/L			05/29/24 16:53	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/29/24 16:53	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/29/24 16:53	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/29/24 16:53	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/29/24 16:53	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/29/24 16:53	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/29/24 16:53	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/29/24 16:53	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/29/24 16:53	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/29/24 16:53	1
Styrene	<0.370		1.00	0.370	ug/L			05/29/24 16:53	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/29/24 16:53	1
Toluene	<0.430		1.00	0.430	ug/L			05/29/24 16:53	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/29/24 16:53	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/29/24 16:53	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/29/24 16:53	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/29/24 16:53	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/29/24 16:53	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/29/24 16:53	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/29/24 16:53	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/29/24 16:53	1

Client: AECOM
Job ID: 310-282049-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-226B
Lab Sample ID: 310-282049-3

Date Collected: 05/23/24 15:30
Matrix: Water

Date Received: 05/24/24 11:20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*118*		*73 - 130*		*05/29/24 16:53*	*1*
Toluene-d8 (Surr)	*94*		*80 - 120*		*05/29/24 16:53*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*		*05/29/24 16:53*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		05/28/24 09:00	05/31/24 19:56	1
Arsenic	**8.05**		2.00	0.530	ug/L		05/28/24 09:00	05/31/24 19:56	1
Barium	**1450**		2.00	0.660	ug/L		05/28/24 09:00	05/31/24 19:56	1
Beryllium	<0.330		1.00	0.330	ug/L		05/28/24 09:00	05/31/24 19:56	1
Cadmium	**0.148**	**J**	0.200	0.100	ug/L		05/28/24 09:00	05/31/24 19:56	1
Chromium	**9.35**		5.00	1.20	ug/L		05/28/24 09:00	05/31/24 19:56	1
Cobalt	**18.8**		0.500	0.170	ug/L		05/28/24 09:00	05/31/24 19:56	1
Copper	**3.06**	**J**	5.00	1.80	ug/L		05/28/24 09:00	05/31/24 19:56	1
Lead	**0.978**		0.500	0.260	ug/L		05/28/24 09:00	05/31/24 19:56	1
Nickel	**70.5**		5.00	2.10	ug/L		05/28/24 09:00	05/31/24 19:56	1
Selenium	<1.40		5.00	1.40	ug/L		05/28/24 09:00	05/31/24 19:56	1
Silver	<0.500	^3+ *+ ^1+	1.00	0.500	ug/L		05/28/24 09:00	06/04/24 19:58	1
Thallium	<0.570		1.00	0.570	ug/L		05/28/24 09:00	05/31/24 19:56	1
Vanadium	**2.74**	**J**	5.00	1.10	ug/L		05/28/24 09:00	05/31/24 19:56	1
Zinc	<9.70		20.0	9.70	ug/L		05/28/24 09:00	05/31/24 19:56	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide (SW846 9034)	<1.41		3.00	1.41	mg/L		05/30/24 07:53	05/30/24 09:40	1
Total Suspended Solids (USGS I-3765-85)	**48.0**		15.0	11.1	mg/L			05/29/24 10:13	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**24.86**				NTU			05/23/24 15:30	1

Client: AECOM
Job ID: 310-282049-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-227B
Lab Sample ID: 310-282049-4
Date Collected: 05/23/24 17:00
Matrix: Water
Date Received: 05/24/24 11:20

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/29/24 17:16	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/29/24 17:16	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/29/24 17:16	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/29/24 17:16	1
1,1-Dichloroethane	**0.647**	**J**	1.00	0.220	ug/L			05/29/24 17:16	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/29/24 17:16	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/29/24 17:16	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/29/24 17:16	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/29/24 17:16	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/29/24 17:16	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/29/24 17:16	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/29/24 17:16	1
1,4-Dichlorobenzene	**0.371**	**J**	1.00	0.230	ug/L			05/29/24 17:16	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/29/24 17:16	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/29/24 17:16	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/29/24 17:16	1
Acetone	**8.33**	**J**	10.0	3.10	ug/L			05/29/24 17:16	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/29/24 17:16	1
Benzene	**2.99**		0.500	0.220	ug/L			05/29/24 17:16	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/29/24 17:16	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/29/24 17:16	1
Bromoform	<0.780		5.00	0.780	ug/L			05/29/24 17:16	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/29/24 17:16	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/29/24 17:16	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/29/24 17:16	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/29/24 17:16	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/29/24 17:16	1
Chloroethane	**0.804**	**J**	4.00	0.790	ug/L			05/29/24 17:16	1
Chloroform	<1.30		3.00	1.30	ug/L			05/29/24 17:16	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/29/24 17:16	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/29/24 17:16	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/29/24 17:16	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/29/24 17:16	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/29/24 17:16	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/29/24 17:16	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/29/24 17:16	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/29/24 17:16	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/29/24 17:16	1
Styrene	<0.370		1.00	0.370	ug/L			05/29/24 17:16	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/29/24 17:16	1
Toluene	<0.430		1.00	0.430	ug/L			05/29/24 17:16	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/29/24 17:16	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/29/24 17:16	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/29/24 17:16	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/29/24 17:16	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/29/24 17:16	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/29/24 17:16	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/29/24 17:16	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/29/24 17:16	1

Client: AECOM
Job ID: 310-282049-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-227B
Lab Sample ID: 310-282049-4

Date Collected: 05/23/24 17:00
Matrix: Water

Date Received: 05/24/24 11:20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*117*		*73 - 130*		*05/29/24 17:16*	*1*
Toluene-d8 (Surr)	*95*		*80 - 120*		*05/29/24 17:16*	*1*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*		*05/29/24 17:16*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		05/28/24 09:00	05/31/24 20:00	1
Arsenic	**16.9**		2.00	0.530	ug/L		05/28/24 09:00	05/31/24 20:00	1
Barium	**1920**		2.00	0.660	ug/L		05/28/24 09:00	05/31/24 20:00	1
Beryllium	<0.330		1.00	0.330	ug/L		05/28/24 09:00	05/31/24 20:00	1
Cadmium	**0.216**		0.200	0.100	ug/L		05/28/24 09:00	05/31/24 20:00	1
Chromium	**6.53**		5.00	1.20	ug/L		05/28/24 09:00	05/31/24 20:00	1
Cobalt	**23.5**		0.500	0.170	ug/L		05/28/24 09:00	05/31/24 20:00	1
Copper	<1.80		5.00	1.80	ug/L		05/28/24 09:00	05/31/24 20:00	1
Lead	**0.659**		0.500	0.260	ug/L		05/28/24 09:00	05/31/24 20:00	1
Nickel	**78.4**		5.00	2.10	ug/L		05/28/24 09:00	05/31/24 20:00	1
Selenium	<1.40		5.00	1.40	ug/L		05/28/24 09:00	05/31/24 20:00	1
Silver	<0.500	^3+ *+ ^1+	1.00	0.500	ug/L		05/28/24 09:00	06/04/24 20:02	1
Thallium	<0.570		1.00	0.570	ug/L		05/28/24 09:00	05/31/24 20:00	1
Vanadium	**2.48**	**J**	5.00	1.10	ug/L		05/28/24 09:00	05/31/24 20:00	1
Zinc	<9.70		20.0	9.70	ug/L		05/28/24 09:00	05/31/24 20:00	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide (SW846 9034)	<1.41		3.00	1.41	mg/L		05/30/24 07:53	05/30/24 09:40	1
Total Suspended Solids (USGS I-3765-85)	**68.0**		15.0	11.1	mg/L			05/29/24 10:13	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**9.52**				NTU			05/23/24 17:00	1

Client: AECOM
Job ID: 310-282049-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Equipment Blank 3
Lab Sample ID: 310-282049-5
Date Collected: 05/23/24 17:00
Matrix: Water
Date Received: 05/24/24 11:20

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			06/04/24 15:50	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			06/04/24 15:50	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			06/04/24 15:50	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			06/04/24 15:50	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			06/04/24 15:50	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			06/04/24 15:50	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			06/04/24 15:50	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			06/04/24 15:50	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			06/04/24 15:50	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			06/04/24 15:50	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			06/04/24 15:50	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			06/04/24 15:50	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			06/04/24 15:50	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			06/04/24 15:50	1
2-Hexanone	<2.00		10.0	2.00	ug/L			06/04/24 15:50	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			06/04/24 15:50	1
Acetone	<3.10		10.0	3.10	ug/L			06/04/24 15:50	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			06/04/24 15:50	1
Benzene	<0.220		0.500	0.220	ug/L			06/04/24 15:50	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			06/04/24 15:50	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			06/04/24 15:50	1
Bromoform	<0.780		5.00	0.780	ug/L			06/04/24 15:50	1
Bromomethane	<1.10		4.00	1.10	ug/L			06/04/24 15:50	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			06/04/24 15:50	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			06/04/24 15:50	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			06/04/24 15:50	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			06/04/24 15:50	1
Chloroethane	<0.790		4.00	0.790	ug/L			06/04/24 15:50	1
Chloroform	<1.30		3.00	1.30	ug/L			06/04/24 15:50	1
Chloromethane	<0.610		3.00	0.610	ug/L			06/04/24 15:50	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			06/04/24 15:50	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			06/04/24 15:50	1
Dibromomethane	<0.330		1.00	0.330	ug/L			06/04/24 15:50	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			06/04/24 15:50	1
Iodomethane	<7.00		10.0	7.00	ug/L			06/04/24 15:50	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			06/04/24 15:50	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			06/04/24 15:50	1
o-Xylene	<0.400		1.00	0.400	ug/L			06/04/24 15:50	1
Styrene	<0.370		1.00	0.370	ug/L			06/04/24 15:50	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			06/04/24 15:50	1
Toluene	<0.430		1.00	0.430	ug/L			06/04/24 15:50	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			06/04/24 15:50	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			06/04/24 15:50	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			06/04/24 15:50	1
Trichloroethene	<0.430		1.00	0.430	ug/L			06/04/24 15:50	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			06/04/24 15:50	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			06/04/24 15:50	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			06/04/24 15:50	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			06/04/24 15:50	1

Client: AECOM
Job ID: 310-282049-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Equipment Blank 3
Lab Sample ID: 310-282049-5

Date Collected: 05/23/24 17:00
Matrix: Water

Date Received: 05/24/24 11:20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*116*		*73 - 130*		*06/04/24 15:50*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*06/04/24 15:50*	*1*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*		*06/04/24 15:50*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		05/28/24 09:00	05/31/24 20:03	1
Arsenic	**0.573**	**J**	2.00	0.530	ug/L		05/28/24 09:00	05/31/24 20:03	1
Barium	**24.3**		2.00	0.660	ug/L		05/28/24 09:00	05/31/24 20:03	1
Beryllium	<0.330		1.00	0.330	ug/L		05/28/24 09:00	05/31/24 20:03	1
Cadmium	<0.100		0.200	0.100	ug/L		05/28/24 09:00	05/31/24 20:03	1
Chromium	<1.20		5.00	1.20	ug/L		05/28/24 09:00	06/04/24 20:05	1
Cobalt	<0.170		0.500	0.170	ug/L		05/28/24 09:00	06/04/24 20:05	1
Copper	<1.80		5.00	1.80	ug/L		05/28/24 09:00	06/04/24 20:05	1
Lead	<0.260		0.500	0.260	ug/L		05/28/24 09:00	05/31/24 20:03	1
Nickel	<2.10		5.00	2.10	ug/L		05/28/24 09:00	05/31/24 20:03	1
Selenium	<1.40		5.00	1.40	ug/L		05/28/24 09:00	06/04/24 20:05	1
Silver	<0.500	^3+ *+ ^1+	1.00	0.500	ug/L		05/28/24 09:00	06/04/24 20:05	1
Thallium	<0.570		1.00	0.570	ug/L		05/28/24 09:00	05/31/24 20:03	1
Vanadium	<1.10		5.00	1.10	ug/L		05/28/24 09:00	06/04/24 20:05	1
Zinc	<9.70		20.0	9.70	ug/L		05/28/24 09:00	06/04/24 20:05	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	<1.39		1.88	1.39	mg/L			05/29/24 09:32	1

Client: AECOM
Job ID: 310-282049-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-113B
Lab Sample ID: 310-282049-6
Date Collected: 05/23/24 14:15
Matrix: Water
Date Received: 05/24/24 11:20

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			06/04/24 16:12	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			06/04/24 16:12	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			06/04/24 16:12	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			06/04/24 16:12	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			06/04/24 16:12	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			06/04/24 16:12	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			06/04/24 16:12	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			06/04/24 16:12	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			06/04/24 16:12	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			06/04/24 16:12	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			06/04/24 16:12	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			06/04/24 16:12	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			06/04/24 16:12	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			06/04/24 16:12	1
2-Hexanone	<2.00		10.0	2.00	ug/L			06/04/24 16:12	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			06/04/24 16:12	1
Acetone	<3.10		10.0	3.10	ug/L			06/04/24 16:12	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			06/04/24 16:12	1
Benzene	<0.220		0.500	0.220	ug/L			06/04/24 16:12	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			06/04/24 16:12	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			06/04/24 16:12	1
Bromoform	<0.780		5.00	0.780	ug/L			06/04/24 16:12	1
Bromomethane	<1.10		4.00	1.10	ug/L			06/04/24 16:12	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			06/04/24 16:12	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			06/04/24 16:12	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			06/04/24 16:12	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			06/04/24 16:12	1
Chloroethane	<0.790		4.00	0.790	ug/L			06/04/24 16:12	1
Chloroform	<1.30		3.00	1.30	ug/L			06/04/24 16:12	1
Chloromethane	<0.610		3.00	0.610	ug/L			06/04/24 16:12	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			06/04/24 16:12	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			06/04/24 16:12	1
Dibromomethane	<0.330		1.00	0.330	ug/L			06/04/24 16:12	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			06/04/24 16:12	1
Iodomethane	<7.00		10.0	7.00	ug/L			06/04/24 16:12	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			06/04/24 16:12	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			06/04/24 16:12	1
o-Xylene	<0.400		1.00	0.400	ug/L			06/04/24 16:12	1
Styrene	<0.370		1.00	0.370	ug/L			06/04/24 16:12	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			06/04/24 16:12	1
Toluene	<0.430		1.00	0.430	ug/L			06/04/24 16:12	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			06/04/24 16:12	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			06/04/24 16:12	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			06/04/24 16:12	1
Trichloroethene	<0.430		1.00	0.430	ug/L			06/04/24 16:12	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			06/04/24 16:12	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			06/04/24 16:12	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			06/04/24 16:12	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			06/04/24 16:12	1

Client: AECOM
Job ID: 310-282049-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-113B
Lab Sample ID: 310-282049-6

Date Collected: 05/23/24 14:15
Matrix: Water

Date Received: 05/24/24 11:20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*115*		*73 - 130*		*06/04/24 16:12*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*06/04/24 16:12*	*1*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*		*06/04/24 16:12*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		05/28/24 09:00	05/31/24 20:07	1
Arsenic	**2.19**		2.00	0.530	ug/L		05/28/24 09:00	05/31/24 20:07	1
Barium	**14.1**		2.00	0.660	ug/L		05/28/24 09:00	05/31/24 20:07	1
Beryllium	<0.330		1.00	0.330	ug/L		05/28/24 09:00	05/31/24 20:07	1
Cadmium	<0.100		0.200	0.100	ug/L		05/28/24 09:00	05/31/24 20:07	1
Chromium	**4.10**	**J**	5.00	1.20	ug/L		05/28/24 09:00	05/31/24 20:07	1
Cobalt	**14.4**		0.500	0.170	ug/L		05/28/24 09:00	05/31/24 20:07	1
Copper	<1.80		5.00	1.80	ug/L		05/28/24 09:00	05/31/24 20:07	1
Lead	<0.260		0.500	0.260	ug/L		05/28/24 09:00	05/31/24 20:07	1
Nickel	**20.9**		5.00	2.10	ug/L		05/28/24 09:00	05/31/24 20:07	1
Selenium	<1.40		5.00	1.40	ug/L		05/28/24 09:00	05/31/24 20:07	1
Silver	<0.500	^3+ *+ ^1+	1.00	0.500	ug/L		05/28/24 09:00	06/04/24 20:09	1
Thallium	<0.570		1.00	0.570	ug/L		05/28/24 09:00	05/31/24 20:07	1
Vanadium	<1.10		5.00	1.10	ug/L		05/28/24 09:00	05/31/24 20:07	1
Zinc	<9.70		20.0	9.70	ug/L		05/28/24 09:00	05/31/24 20:07	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide (SW846 9034)	<1.41		3.00	1.41	mg/L		05/30/24 07:53	05/30/24 09:40	1
Total Suspended Solids (USGS I-3765-85)	**33.0**		7.50	5.55	mg/L			05/29/24 10:13	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**135.60**				NTU			05/23/24 14:15	1

Client: AECOM
Job ID: 310-282049-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Duplicate 5
Lab Sample ID: 310-282049-7
Date Collected: 05/23/24 00:00
Matrix: Water
Date Received: 05/24/24 11:20

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			06/04/24 16:35	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			06/04/24 16:35	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			06/04/24 16:35	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			06/04/24 16:35	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			06/04/24 16:35	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			06/04/24 16:35	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			06/04/24 16:35	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			06/04/24 16:35	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			06/04/24 16:35	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			06/04/24 16:35	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			06/04/24 16:35	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			06/04/24 16:35	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			06/04/24 16:35	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			06/04/24 16:35	1
2-Hexanone	<2.00		10.0	2.00	ug/L			06/04/24 16:35	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			06/04/24 16:35	1
Acetone	<3.10		10.0	3.10	ug/L			06/04/24 16:35	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			06/04/24 16:35	1
Benzene	<0.220		0.500	0.220	ug/L			06/04/24 16:35	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			06/04/24 16:35	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			06/04/24 16:35	1
Bromoform	<0.780		5.00	0.780	ug/L			06/04/24 16:35	1
Bromomethane	<1.10		4.00	1.10	ug/L			06/04/24 16:35	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			06/04/24 16:35	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			06/04/24 16:35	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			06/04/24 16:35	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			06/04/24 16:35	1
Chloroethane	<0.790		4.00	0.790	ug/L			06/04/24 16:35	1
Chloroform	<1.30		3.00	1.30	ug/L			06/04/24 16:35	1
Chloromethane	<0.610		3.00	0.610	ug/L			06/04/24 16:35	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			06/04/24 16:35	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			06/04/24 16:35	1
Dibromomethane	<0.330		1.00	0.330	ug/L			06/04/24 16:35	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			06/04/24 16:35	1
Iodomethane	<7.00		10.0	7.00	ug/L			06/04/24 16:35	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			06/04/24 16:35	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			06/04/24 16:35	1
o-Xylene	<0.400		1.00	0.400	ug/L			06/04/24 16:35	1
Styrene	<0.370		1.00	0.370	ug/L			06/04/24 16:35	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			06/04/24 16:35	1
Toluene	<0.430		1.00	0.430	ug/L			06/04/24 16:35	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			06/04/24 16:35	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			06/04/24 16:35	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			06/04/24 16:35	1
Trichloroethene	<0.430		1.00	0.430	ug/L			06/04/24 16:35	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			06/04/24 16:35	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			06/04/24 16:35	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			06/04/24 16:35	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			06/04/24 16:35	1

Client: AECOM
Job ID: 310-282049-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Duplicate 5
Lab Sample ID: 310-282049-7

Date Collected: 05/23/24 00:00
Matrix: Water
Date Received: 05/24/24 11:20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*117*		*73 - 130*		*06/04/24 16:35*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*06/04/24 16:35*	*1*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*		*06/04/24 16:35*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		05/28/24 09:00	05/31/24 20:10	1
Arsenic	**2.11**		2.00	0.530	ug/L		05/28/24 09:00	05/31/24 20:10	1
Barium	**13.5**		2.00	0.660	ug/L		05/28/24 09:00	05/31/24 20:10	1
Beryllium	<0.330		1.00	0.330	ug/L		05/28/24 09:00	05/31/24 20:10	1
Cadmium	<0.100		0.200	0.100	ug/L		05/28/24 09:00	05/31/24 20:10	1
Chromium	**21.0**		5.00	1.20	ug/L		05/28/24 09:00	05/31/24 20:10	1
Cobalt	**14.3**		0.500	0.170	ug/L		05/28/24 09:00	05/31/24 20:10	1
Copper	<1.80		5.00	1.80	ug/L		05/28/24 09:00	05/31/24 20:10	1
Lead	<0.260		0.500	0.260	ug/L		05/28/24 09:00	05/31/24 20:10	1
Nickel	**27.8**		5.00	2.10	ug/L		05/28/24 09:00	05/31/24 20:10	1
Selenium	<1.40		5.00	1.40	ug/L		05/28/24 09:00	05/31/24 20:10	1
Silver	<0.500	^3+ *+ ^1+	1.00	0.500	ug/L		05/28/24 09:00	06/04/24 20:13	1
Thallium	<0.570		1.00	0.570	ug/L		05/28/24 09:00	05/31/24 20:10	1
Vanadium	<1.10		5.00	1.10	ug/L		05/28/24 09:00	05/31/24 20:10	1
Zinc	<9.70		20.0	9.70	ug/L		05/28/24 09:00	05/31/24 20:10	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**16.3**		5.00	3.70	mg/L			05/29/24 10:13	1

Client: AECOM
Job ID: 310-282049-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: P-213C
Lab Sample ID: 310-282049-8
Date Collected: 05/23/24 10:30
Matrix: Water
Date Received: 05/24/24 11:20

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/29/24 19:30	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/29/24 19:30	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/29/24 19:30	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/29/24 19:30	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/29/24 19:30	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/29/24 19:30	1
1,1-Dichloropropene	<0.430		1.00	0.430	ug/L			05/29/24 19:30	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/29/24 19:30	1
1,2,4-Trichlorobenzene	<0.750		5.00	0.750	ug/L			05/29/24 19:30	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/29/24 19:30	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/29/24 19:30	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/29/24 19:30	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/29/24 19:30	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/29/24 19:30	1
1,3-Dichlorobenzene	<0.300		1.00	0.300	ug/L			05/29/24 19:30	1
1,3-Dichloropropane	<0.400		1.00	0.400	ug/L			05/29/24 19:30	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/29/24 19:30	1
2,2-Dichloropropane	<0.690		4.00	0.690	ug/L			05/29/24 19:30	1
2-Butanone (MEK)	**2.30**	**J**	10.0	2.10	ug/L			05/29/24 19:30	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/29/24 19:30	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/29/24 19:30	1
Acetone	<3.10		10.0	3.10	ug/L			05/29/24 19:30	1
Acrolein	<3.60		10.0	3.60	ug/L			05/29/24 19:30	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/29/24 19:30	1
Allyl chloride	<0.700		2.00	0.700	ug/L			05/29/24 19:30	1
Benzene	<0.220		0.500	0.220	ug/L			05/29/24 19:30	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/29/24 19:30	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/29/24 19:30	1
Bromoform	<0.780		5.00	0.780	ug/L			05/29/24 19:30	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/29/24 19:30	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/29/24 19:30	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/29/24 19:30	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/29/24 19:30	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/29/24 19:30	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/29/24 19:30	1
Chloroform	<1.30		3.00	1.30	ug/L			05/29/24 19:30	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/29/24 19:30	1
Chloroprene	<0.230		1.00	0.230	ug/L			05/29/24 19:30	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/29/24 19:30	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/29/24 19:30	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/29/24 19:30	1
Dichlorodifluoromethane	<0.250		3.00	0.250	ug/L			05/29/24 19:30	1
Ethyl methacrylate	<0.680		2.00	0.680	ug/L			05/29/24 19:30	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/29/24 19:30	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/29/24 19:30	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/29/24 19:30	1
Methacrylonitrile	<3.30		10.0	3.30	ug/L			05/29/24 19:30	1
Methyl methacrylate	<0.760		2.00	0.760	ug/L			05/29/24 19:30	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/29/24 19:30	1

Client Sample ID: P-213C
Lab Sample ID: 310-282049-8
Date Collected: 05/23/24 10:30
Matrix: Water
Date Received: 05/24/24 11:20

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<3.00		5.00	3.00	ug/L			05/29/24 19:30	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/29/24 19:30	1
Propionitrile	<3.40		10.0	3.40	ug/L			05/29/24 19:30	1
Styrene	<0.370		1.00	0.370	ug/L			05/29/24 19:30	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/29/24 19:30	1
Toluene	<0.430		1.00	0.430	ug/L			05/29/24 19:30	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/29/24 19:30	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/29/24 19:30	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/29/24 19:30	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/29/24 19:30	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/29/24 19:30	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/29/24 19:30	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/29/24 19:30	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/29/24 19:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*101*		*73 - 130*		*05/29/24 19:30*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*05/29/24 19:30*	*1*
4-Bromofluorobenzene (Surr)	*106*		*80 - 120*		*05/29/24 19:30*	*1*

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4,5-Tetrachlorobenzene	<0.614		11.4	0.614	ug/L		05/29/24 07:35	06/03/24 22:25	1
1,3,5-Trinitrobenzene	<2.61		11.4	2.61	ug/L		05/29/24 07:35	06/04/24 16:39	1
1,3-Dinitrobenzene	<3.64		11.4	3.64	ug/L		05/29/24 07:35	06/03/24 22:25	1
1,4-Naphthoquinone	<4.09		11.4	4.09	ug/L		05/29/24 07:35	06/04/24 16:39	1
1,4-phenylenediamine	<2.16	*- *1	11.4	2.16	ug/L		05/29/24 07:35	06/04/24 16:39	1
1-Naphthylamine	<2.84		11.4	2.84	ug/L		05/29/24 07:35	06/04/24 16:39	1
2,3,4,6-Tetrachlorophenol	<6.02		11.4	6.02	ug/L		05/29/24 07:35	06/03/24 22:25	1
2,4,5-Trichlorophenol	<6.02		11.4	6.02	ug/L		05/29/24 07:35	06/03/24 22:25	1
2,4,6-Trichlorophenol	<5.68		11.4	5.68	ug/L		05/29/24 07:35	06/03/24 22:25	1
2,4-Dichlorophenol	<0.966		11.4	0.966	ug/L		05/29/24 07:35	06/03/24 22:25	1
2,4-Dimethylphenol	<0.659		11.4	0.659	ug/L		05/29/24 07:35	06/03/24 22:25	1
2,4-Dinitrophenol	<14.8		22.7	14.8	ug/L		05/29/24 07:35	06/03/24 22:25	1
2,4-Dinitrotoluene	<7.27		11.4	7.27	ug/L		05/29/24 07:35	06/03/24 22:25	1
2,6-Dichlorophenol	<0.784		11.4	0.784	ug/L		05/29/24 07:35	06/03/24 22:25	1
2,6-Dinitrotoluene	<0.591		11.4	0.591	ug/L		05/29/24 07:35	06/03/24 22:25	1
2-Acetylaminofluorene	<3.07		11.4	3.07	ug/L		05/29/24 07:35	06/04/24 16:39	1
2-Chloronaphthalene	<0.727		11.4	0.727	ug/L		05/29/24 07:35	06/03/24 22:25	1
2-Chlorophenol	<0.614		11.4	0.614	ug/L		05/29/24 07:35	06/03/24 22:25	1
2-Methylnaphthalene	<0.670		11.4	0.670	ug/L		05/29/24 07:35	06/03/24 22:25	1
2-Methylphenol	<0.739		11.4	0.739	ug/L		05/29/24 07:35	06/03/24 22:25	1
2-Naphthylamine	<2.39		11.4	2.39	ug/L		05/29/24 07:35	06/04/24 16:39	1
2-Nitroaniline	<6.70		11.4	6.70	ug/L		05/29/24 07:35	06/03/24 22:25	1
2-Nitrophenol	<7.73		11.4	7.73	ug/L		05/29/24 07:35	06/03/24 22:25	1
3,3'-Dichlorobenzidine	<1.59		11.4	1.59	ug/L		05/29/24 07:35	06/03/24 22:25	1
3,3'-Dimethylbenzidine	<1.70	*1	11.4	1.70	ug/L		05/29/24 07:35	06/04/24 16:39	1
3-Methylcholanthrene	<0.364		11.4	0.364	ug/L		05/29/24 07:35	06/04/24 16:39	1
3-Nitroaniline	<3.07		11.4	3.07	ug/L		05/29/24 07:35	06/03/24 22:25	1
4,6-Dinitro-2-methylphenol	<7.84		11.4	7.84	ug/L		05/29/24 07:35	06/03/24 22:25	1

Client: AECOM
Job ID: 310-282049-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: P-213C
Lab Sample ID: 310-282049-8
Date Collected: 05/23/24 10:30
Matrix: Water
Date Received: 05/24/24 11:20

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Aminobiphenyl	<2.50		11.4	2.50	ug/L		05/29/24 07:35	06/04/24 16:39	1
4-Bromophenyl phenyl ether	<0.795		11.4	0.795	ug/L		05/29/24 07:35	06/03/24 22:25	1
4-Chloro-3-methylphenol	<0.955		11.4	0.955	ug/L		05/29/24 07:35	06/03/24 22:25	1
4-Chloroaniline	<0.705		11.4	0.705	ug/L		05/29/24 07:35	06/03/24 22:25	1
4-Chlorophenyl phenyl ether	<0.784		11.4	0.784	ug/L		05/29/24 07:35	06/03/24 22:25	1
Methylphenol, 3 & 4	<0.795		11.4	0.795	ug/L		05/29/24 07:35	06/03/24 22:25	1
4-Nitroaniline	<1.48		11.4	1.48	ug/L		05/29/24 07:35	06/03/24 22:25	1
4-Nitrophenol	<8.64		11.4	8.64	ug/L		05/29/24 07:35	06/03/24 22:25	1
5-Nitro-o-toluidine	<3.18		11.4	3.18	ug/L		05/29/24 07:35	06/04/24 16:39	1
7,12-Dimethylbenz(a)anthracene	<2.16		11.4	2.16	ug/L		05/29/24 07:35	06/04/24 16:39	1
Acenaphthene	<0.727		11.4	0.727	ug/L		05/29/24 07:35	06/03/24 22:25	1
Acenaphthylene	<0.818		11.4	0.818	ug/L		05/29/24 07:35	06/03/24 22:25	1
Acetophenone	<0.784		11.4	0.784	ug/L		05/29/24 07:35	06/03/24 22:25	1
Anthracene	<0.989		11.4	0.989	ug/L		05/29/24 07:35	06/03/24 22:25	1
Benzo[a]anthracene	<0.966		11.4	0.966	ug/L		05/29/24 07:35	06/03/24 22:25	1
Benzo[a]pyrene	<9.20		11.4	9.20	ug/L		05/29/24 07:35	06/03/24 22:25	1
Benzo[b]fluoranthene	<5.57		11.4	5.57	ug/L		05/29/24 07:35	06/03/24 22:25	1
Benzo[g,h,i]perylene	<7.16		11.4	7.16	ug/L		05/29/24 07:35	06/03/24 22:25	1
Benzo[k]fluoranthene	<2.50		11.4	2.50	ug/L		05/29/24 07:35	06/03/24 22:25	1
Benzyl alcohol	<1.48		11.4	1.48	ug/L		05/29/24 07:35	06/03/24 22:25	1
Bis(2-chloroethoxy)methane	<0.864		11.4	0.864	ug/L		05/29/24 07:35	06/03/24 22:25	1
Bis(2-chloroethyl)ether	<0.932		11.4	0.932	ug/L		05/29/24 07:35	06/03/24 22:25	1
bis (2-chloroisopropyl) ether	<0.614		11.4	0.614	ug/L		05/29/24 07:35	06/03/24 22:25	1
Bis(2-ethylhexyl) phthalate	<6.25		11.4	6.25	ug/L		05/29/24 07:35	06/03/24 22:25	1
Butyl benzyl phthalate	<6.14		11.4	6.14	ug/L		05/29/24 07:35	06/03/24 22:25	1
Chlorobenzilate	<4.09		11.4	4.09	ug/L		05/29/24 07:35	06/04/24 16:39	1
Chrysene	<0.989		11.4	0.989	ug/L		05/29/24 07:35	06/03/24 22:25	1
Diallate	<4.55		11.4	4.55	ug/L		05/29/24 07:35	06/04/24 16:39	1
Dibenzo(a,h)anthracene	<4.43		11.4	4.43	ug/L		05/29/24 07:35	06/03/24 22:25	1
Dibenzofuran	<0.841		11.4	0.841	ug/L		05/29/24 07:35	06/03/24 22:25	1
Diethyl phthalate	<1.93		11.4	1.93	ug/L		05/29/24 07:35	06/03/24 22:25	1
Dimethoate	<4.09		11.4	4.09	ug/L		05/29/24 07:35	06/04/24 16:39	1
Dimethyl phthalate	<1.14		11.4	1.14	ug/L		05/29/24 07:35	06/03/24 22:25	1
Di-n-butyl phthalate	<6.36		11.4	6.36	ug/L		05/29/24 07:35	06/03/24 22:25	1
Di-n-octyl phthalate	<7.95		22.7	7.95	ug/L		05/29/24 07:35	06/03/24 22:25	1
Dinoseb	<2.73		11.4	2.73	ug/L		05/29/24 07:35	06/04/24 16:39	1
Diphenylamine	<6.82		11.4	6.82	ug/L		05/29/24 07:35	06/03/24 22:25	1
Disulfoton	<2.73		11.4	2.73	ug/L		05/29/24 07:35	06/04/24 16:39	1
Ethyl methanesulfonate	<4.09		11.4	4.09	ug/L		05/29/24 07:35	06/04/24 16:39	1
Ethyl Parathion	<2.50		11.4	2.50	ug/L		05/29/24 07:35	06/04/24 16:39	1
Famphur	<4.32	*+	11.4	4.32	ug/L		05/29/24 07:35	06/04/24 16:39	1
Fluoranthene	<1.93		11.4	1.93	ug/L		05/29/24 07:35	06/03/24 22:25	1
Fluorene	<0.898		11.4	0.898	ug/L		05/29/24 07:35	06/03/24 22:25	1
Hexachlorobenzene	<0.795		11.4	0.795	ug/L		05/29/24 07:35	06/03/24 22:25	1
Hexachlorobutadiene	<0.977		11.4	0.977	ug/L		05/29/24 07:35	06/03/24 22:25	1
Hexachlorocyclopentadiene	<5.80		11.4	5.80	ug/L		05/29/24 07:35	06/03/24 22:25	1
Hexachloroethane	<1.10		11.4	1.10	ug/L		05/29/24 07:35	06/03/24 22:25	1
Hexachloropropene	<2.95		11.4	2.95	ug/L		05/29/24 07:35	06/04/24 16:39	1
Indeno[1,2,3-cd]pyrene	<4.77		11.4	4.77	ug/L		05/29/24 07:35	06/03/24 22:25	1

Client Sample ID: P-213C
Lab Sample ID: 310-282049-8
Date Collected: 05/23/24 10:30
Matrix: Water
Date Received: 05/24/24 11:20

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Isodrin	<5.34		11.4	5.34	ug/L		05/29/24 07:35	06/04/24 16:39	1
Isophorone	<1.06		11.4	1.06	ug/L		05/29/24 07:35	06/03/24 22:25	1
Isosafrole	<2.61		11.4	2.61	ug/L		05/29/24 07:35	06/04/24 16:39	1
Kepone	<1.14	*+	11.4	1.14	ug/L		05/29/24 07:35	06/04/24 16:39	1
Methapyrilene	<0.864	*1	11.4	0.864	ug/L		05/29/24 07:35	06/04/24 16:39	1
Methyl methanesulfonate	<3.75		11.4	3.75	ug/L		05/29/24 07:35	06/04/24 16:39	1
Methyl parathion	<2.61		11.4	2.61	ug/L		05/29/24 07:35	06/04/24 16:39	1
Nitrobenzene	<0.909		11.4	0.909	ug/L		05/29/24 07:35	06/03/24 22:25	1
N-Nitrosodiethylamine	<3.86		11.4	3.86	ug/L		05/29/24 07:35	06/04/24 16:39	1
N-Nitrosodimethylamine	<0.818		11.4	0.818	ug/L		05/29/24 07:35	06/03/24 22:25	1
N-Nitrosodi-n-butylamine	<4.43		11.4	4.43	ug/L		05/29/24 07:35	06/04/24 16:39	1
N-Nitrosodi-n-propylamine	<1.05		11.4	1.05	ug/L		05/29/24 07:35	06/03/24 22:25	1
N-Nitrosodiphenylamine	<0.852		11.4	0.852	ug/L		05/29/24 07:35	06/03/24 22:25	1
N-Nitrosomethylethylamine	<5.57		11.4	5.57	ug/L		05/29/24 07:35	06/04/24 16:39	1
N-Nitrosopiperidine	<3.07		11.4	3.07	ug/L		05/29/24 07:35	06/04/24 16:39	1
N-Nitrosopyrrolidine	<4.09		11.4	4.09	ug/L		05/29/24 07:35	06/04/24 16:39	1
o,o',o''-Triethylphosphorothioate	<3.64		11.4	3.64	ug/L		05/29/24 07:35	06/04/24 16:39	1
o-Toluidine	<3.30		11.4	3.30	ug/L		05/29/24 07:35	06/04/24 16:39	1
p-Dimethylamino azobenzene	<2.50		11.4	2.50	ug/L		05/29/24 07:35	06/04/24 16:39	1
Pentachlorobenzene	<3.18		11.4	3.18	ug/L		05/29/24 07:35	06/04/24 16:39	1
Pentachloronitrobenzene	<6.59		11.4	6.59	ug/L		05/29/24 07:35	06/04/24 16:39	1
Pentachlorophenol	<10.9		11.4	10.9	ug/L		05/29/24 07:35	06/03/24 22:25	1
Phenacetin	<2.16		11.4	2.16	ug/L		05/29/24 07:35	06/04/24 16:39	1
Phenanthrene	<0.898		11.4	0.898	ug/L		05/29/24 07:35	06/03/24 22:25	1
Phenol	<1.25		11.4	1.25	ug/L		05/29/24 07:35	06/03/24 22:25	1
Phorate	<3.64		11.4	3.64	ug/L		05/29/24 07:35	06/04/24 16:39	1
Pronamide	<3.07		11.4	3.07	ug/L		05/29/24 07:35	06/04/24 16:39	1
Pyrene	<0.898		11.4	0.898	ug/L		05/29/24 07:35	06/03/24 22:25	1
Safrole	<3.18		11.4	3.18	ug/L		05/29/24 07:35	06/04/24 16:39	1
Thionazin	<3.98		11.4	3.98	ug/L		05/29/24 07:35	06/04/24 16:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorophenol (Surr)	*71*		*25 - 110*	*05/29/24 07:35*	*06/03/24 22:25*	*1*
Phenol-d5 (Surr)	*59*		*21 - 110*	*05/29/24 07:35*	*06/03/24 22:25*	*1*
Nitrobenzene-d5 (Surr)	*96*		*45 - 129*	*05/29/24 07:35*	*06/03/24 22:25*	*1*
2-Fluorobiphenyl (Surr)	*80*		*39 - 118*	*05/29/24 07:35*	*06/03/24 22:25*	*1*
2,4,6-Tribromophenol (Surr)	*86*		*27 - 136*	*05/29/24 07:35*	*06/03/24 22:25*	*1*
Terphenyl-d14 (Surr)	*90*		*12 - 144*	*05/29/24 07:35*	*06/03/24 22:25*	*1*

Method: SW846 8015C - Nonhalogenated Organic using GC/FID (Direct Aqueous Injection)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetonitrile	<2600		10000	2600	ug/L			05/28/24 17:12	1
Isobutanol	<2400		10000	2400	ug/L			05/28/24 17:12	1

Method: SW846 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	<0.0321		0.0762	0.0321	ug/L		05/29/24 07:55	06/04/24 18:30	1
4,4'-DDE	<0.0321		0.0762	0.0321	ug/L		05/29/24 07:55	06/04/24 18:30	1
4,4'-DDT	<0.0500		0.0762	0.0500	ug/L		05/29/24 07:55	06/04/24 18:30	1
Aldrin	<0.0381		0.0762	0.0381	ug/L		05/29/24 07:55	06/04/24 18:30	1

Client Sample ID: P-213C
Lab Sample ID: 310-282049-8
Date Collected: 05/23/24 10:30
Matrix: Water
Date Received: 05/24/24 11:20

Method: SW846 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
alpha-BHC	<0.0345		0.0762	0.0345	ug/L		05/29/24 07:55	06/04/24 18:30	1
beta-BHC	<0.0440		0.0762	0.0440	ug/L		05/29/24 07:55	06/04/24 18:30	1
Chlordane (technical)	<0.964		2.38	0.964	ug/L		05/29/24 07:55	06/04/24 18:30	1
delta-BHC	<0.0321		0.0762	0.0321	ug/L		05/29/24 07:55	06/04/24 18:30	1
Dieldrin	<0.0310		0.0762	0.0310	ug/L		05/29/24 07:55	06/04/24 18:30	1
Endosulfan I	<0.0393		0.0762	0.0393	ug/L		05/29/24 07:55	06/04/24 18:30	1
Endosulfan II	<0.0345		0.0762	0.0345	ug/L		05/29/24 07:55	06/04/24 18:30	1
Endosulfan sulfate	<0.0357		0.0762	0.0357	ug/L		05/29/24 07:55	06/04/24 18:30	1
Endrin	<0.0310		0.0762	0.0310	ug/L		05/29/24 07:55	06/04/24 18:30	1
Endrin aldehyde	<0.0345		0.0762	0.0345	ug/L		05/29/24 07:55	06/04/24 18:30	1
gamma-BHC (Lindane)	<0.0429		0.0762	0.0429	ug/L		05/29/24 07:55	06/04/24 18:30	1
Heptachlor	<0.0393		0.0762	0.0393	ug/L		05/29/24 07:55	06/04/24 18:30	1
Heptachlor epoxide	<0.0345		0.0762	0.0345	ug/L		05/29/24 07:55	06/04/24 18:30	1
Methoxychlor	<0.0488		0.0762	0.0488	ug/L		05/29/24 07:55	06/04/24 18:30	1
Toxaphene	<0.821		2.38	0.821	ug/L		05/29/24 07:55	06/04/24 18:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*97*		*10 - 136*	*05/29/24 07:55*	*06/04/24 18:30*	*1*
Tetrachloro-m-xylene (Surr)	*72*		*10 - 130*	*05/29/24 07:55*	*06/04/24 18:30*	*1*

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.202		0.952	0.202	ug/L		05/29/24 07:55	06/04/24 18:30	1
PCB-1221	<0.202		0.952	0.202	ug/L		05/29/24 07:55	06/04/24 18:30	1
PCB-1232	<0.202		0.952	0.202	ug/L		05/29/24 07:55	06/04/24 18:30	1
PCB-1242	<0.202		0.952	0.202	ug/L		05/29/24 07:55	06/04/24 18:30	1
PCB-1248	<0.131		0.952	0.131	ug/L		05/29/24 07:55	06/04/24 18:30	1
PCB-1254	<0.131		0.952	0.131	ug/L		05/29/24 07:55	06/04/24 18:30	1
PCB-1260	<0.131		0.952	0.131	ug/L		05/29/24 07:55	06/04/24 18:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*97*		*10 - 136*	*05/29/24 07:55*	*06/04/24 18:30*	*1*
Tetrachloro-m-xylene (Surr)	*72*		*10 - 130*	*05/29/24 07:55*	*06/04/24 18:30*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		05/28/24 09:00	05/31/24 20:14	1
Arsenic	<0.530		2.00	0.530	ug/L		05/28/24 09:00	05/31/24 20:14	1
Barium	**8.72**		2.00	0.660	ug/L		05/28/24 09:00	05/31/24 20:14	1
Beryllium	<0.330		1.00	0.330	ug/L		05/28/24 09:00	05/31/24 20:14	1
Cadmium	<0.100		0.200	0.100	ug/L		05/28/24 09:00	05/31/24 20:14	1
Chromium	<1.20		5.00	1.20	ug/L		05/28/24 09:00	05/31/24 20:14	1
Cobalt	**3.25**		0.500	0.170	ug/L		05/28/24 09:00	05/31/24 20:14	1
Copper	<1.80		5.00	1.80	ug/L		05/28/24 09:00	05/31/24 20:14	1
Lead	<0.260		0.500	0.260	ug/L		05/28/24 09:00	05/31/24 20:14	1
Nickel	**9.60**		5.00	2.10	ug/L		05/28/24 09:00	05/31/24 20:14	1
Selenium	<1.40		5.00	1.40	ug/L		05/28/24 09:00	05/31/24 20:14	1
Silver	<0.500	^3+ *+ ^1+	1.00	0.500	ug/L		05/28/24 09:00	06/04/24 20:16	1
Thallium	<0.570		1.00	0.570	ug/L		05/28/24 09:00	05/31/24 20:14	1
Vanadium	<1.10		5.00	1.10	ug/L		05/28/24 09:00	05/31/24 20:14	1

Client: AECOM
Job ID: 310-282049-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: P-213C
Lab Sample ID: 310-282049-8
Date Collected: 05/23/24 10:30
Matrix: Water
Date Received: 05/24/24 11:20

Method: SW846 6020B - Metals (ICP/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	<9.70		20.0	9.70	ug/L		05/28/24 09:00	05/31/24 20:14	1
Tin	<2.30		5.00	2.30	ug/L		05/28/24 09:00	05/31/24 20:14	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.110		0.200	0.110	ug/L		05/28/24 13:59	05/29/24 15:08	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total (SW846 9012B)	<3.50		10.0	3.50	ug/L		05/30/24 09:42	05/30/24 17:15	1
Sulfide (SW846 9034)	<1.41		3.00	1.41	mg/L		05/30/24 07:53	05/30/24 09:40	1
Total Suspended Solids (USGS I-3765-85)	<1.39		1.88	1.39	mg/L			05/29/24 10:13	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**0.66**				NTU			05/23/24 10:30	1

Client: AECOM
Job ID: 310-282049-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: P-214CR
Lab Sample ID: 310-282049-9
Date Collected: 05/23/24 13:30
Matrix: Water
Date Received: 05/24/24 11:20

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/29/24 19:52	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/29/24 19:52	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/29/24 19:52	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/29/24 19:52	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/29/24 19:52	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/29/24 19:52	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/29/24 19:52	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/29/24 19:52	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/29/24 19:52	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/29/24 19:52	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/29/24 19:52	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/29/24 19:52	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/29/24 19:52	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/29/24 19:52	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/29/24 19:52	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/29/24 19:52	1
Acetone	**3.53**	**J**	10.0	3.10	ug/L			05/29/24 19:52	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/29/24 19:52	1
Benzene	<0.220		0.500	0.220	ug/L			05/29/24 19:52	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/29/24 19:52	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/29/24 19:52	1
Bromoform	<0.780		5.00	0.780	ug/L			05/29/24 19:52	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/29/24 19:52	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/29/24 19:52	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/29/24 19:52	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/29/24 19:52	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/29/24 19:52	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/29/24 19:52	1
Chloroform	<1.30		3.00	1.30	ug/L			05/29/24 19:52	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/29/24 19:52	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/29/24 19:52	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/29/24 19:52	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/29/24 19:52	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/29/24 19:52	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/29/24 19:52	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/29/24 19:52	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/29/24 19:52	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/29/24 19:52	1
Styrene	<0.370		1.00	0.370	ug/L			05/29/24 19:52	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/29/24 19:52	1
Toluene	<0.430		1.00	0.430	ug/L			05/29/24 19:52	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/29/24 19:52	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/29/24 19:52	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/29/24 19:52	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/29/24 19:52	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/29/24 19:52	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/29/24 19:52	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/29/24 19:52	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/29/24 19:52	1

Client: AECOM
Job ID: 310-282049-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: P-214CR
Lab Sample ID: 310-282049-9

Date Collected: 05/23/24 13:30
Matrix: Water

Date Received: 05/24/24 11:20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*102*		*73 - 130*		*05/29/24 19:52*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*05/29/24 19:52*	*1*
4-Bromofluorobenzene (Surr)	*106*		*80 - 120*		*05/29/24 19:52*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		05/28/24 09:00	05/31/24 20:32	1
Arsenic	**0.830**	**J**	2.00	0.530	ug/L		05/28/24 09:00	05/31/24 20:32	1
Barium	**130**		2.00	0.660	ug/L		05/28/24 09:00	05/31/24 20:32	1
Beryllium	<0.330		1.00	0.330	ug/L		05/28/24 09:00	05/31/24 20:32	1
Cadmium	<0.100		0.200	0.100	ug/L		05/28/24 09:00	05/31/24 20:32	1
Chromium	<1.20		5.00	1.20	ug/L		05/28/24 09:00	05/31/24 20:32	1
Cobalt	**0.190**	**J**	0.500	0.170	ug/L		05/28/24 09:00	05/31/24 20:32	1
Copper	<1.80		5.00	1.80	ug/L		05/28/24 09:00	05/31/24 20:32	1
Lead	<0.260		0.500	0.260	ug/L		05/28/24 09:00	05/31/24 20:32	1
Nickel	<2.10		5.00	2.10	ug/L		05/28/24 09:00	05/31/24 20:32	1
Selenium	<1.40		5.00	1.40	ug/L		05/28/24 09:00	05/31/24 20:32	1
Silver	<0.500	^3+ *+ ^1+	1.00	0.500	ug/L		05/28/24 09:00	06/04/24 20:34	1
Thallium	<0.570		1.00	0.570	ug/L		05/28/24 09:00	05/31/24 20:32	1
Vanadium	<1.10		5.00	1.10	ug/L		05/28/24 09:00	05/31/24 20:32	1
Zinc	<9.70		20.0	9.70	ug/L		05/28/24 09:00	05/31/24 20:32	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**39.0**		1.88	1.39	mg/L			05/29/24 10:13	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**35.53**				NTU			05/23/24 13:30	1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
*-	LCS and/or LCSD is outside acceptance limits, low biased.
*+	LCS and/or LCSD is outside acceptance limits, high biased.
*1	LCS/LCSD RPD exceeds control limits.
E	Result exceeded calibration range.

GC Semi VOA

Qualifier	Qualifier Description
p	The %RPD between the primary and confirmation column/detector is >40%. The lower value has been reported.

Metals

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
^1+	Initial Calibration Verification (ICV) is outside acceptance limits, high biased.
^3+	Reporting Limit Check Standard is outside acceptance limits, high biased
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
TNTC	Too Numerous To Count

Surrogate Summary

Client: AECOM
Job ID: 310-282049-1
Project/Site: Black Hawk County Landfill (IDNR)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-282049-2	Trip Blank	114	95	104
310-282049-3	OW-226B	118	94	102
310-282049-4	OW-227B	117	95	104
310-282049-5	Equipment Blank 3	116	96	103
310-282049-6	OW-113B	115	96	103
310-282049-6 MS	OW-113B	103	99	103
310-282049-6 MSD	OW-113B	102	100	103
310-282049-7	Duplicate 5	117	96	104
310-282049-8	P-213C	101	100	106
310-282049-9	P-214CR	102	99	106
LCS 310-422854/6	Lab Control Sample	104	97	103
LCS 310-422854/7	Lab Control Sample	117	94	103
LCS 310-422943/6	Lab Control Sample	96	104	100
LCS 310-422943/7	Lab Control Sample	101	101	104
LCS 310-423506/6	Lab Control Sample	101	99	102
LCS 310-423506/7	Lab Control Sample	117	97	104
MB 310-422854/5	Method Blank	115	96	103
MB 310-422943/5	Method Blank	102	101	107
MB 310-423506/5	Method Blank	115	98	102

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		2FP	PHL	NBZ	FBP	TBP	TPHL
Lab Sample ID	Client Sample ID	(25-110)	(21-110)	(45-129)	(39-118)	(27-136)	(12-144)
310-282049-8	P-213C	71	59	96	80	86	90
LCS 310-422930/2-A	Lab Control Sample	76	59	99	86	93	95
LCSD 310-422930/3-A	Lab Control Sample Dup	73	57	95	79	92	92
MB 310-422930/1-A	Method Blank	81	64	109	90	88	96

Surrogate Legend

2FP = 2-Fluorophenol (Surr)
PHL = Phenol-d5 (Surr)
NBZ = Nitrobenzene-d5 (Surr)
FBP = 2-Fluorobiphenyl (Surr)
TBP = 2,4,6-Tribromophenol (Surr)
TPHL = Terphenyl-d14 (Surr)

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		DCB1	TCX1
Lab Sample ID	Client Sample ID	(10-136)	(10-130)
310-282049-8	P-213C	97	72

Surrogate Summary

Client: AECOM
Job ID: 310-282049-1
Project/Site: Black Hawk County Landfill (IDNR)

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)									
		DCB1	TCX1								
Lab Sample ID	Client Sample ID	(10-136)	(10-130)								
LCS 310-422933/2-A	Lab Control Sample	75	67								
LCSD 310-422933/3-A	Lab Control Sample Dup	73	54								
MB 310-422933/1-A	Method Blank	81	62								

Surrogate Legend

DCB = DCB Decachlorobiphenyl (Surr)

TCX = Tetrachloro-m-xylene (Surr)

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)									
		DCB1	TCX1								
Lab Sample ID	Client Sample ID	(10-136)	(10-130)								
310-282049-8	P-213C	97	72								
LCS 310-422933/4-A	Lab Control Sample	81	62								
LCSD 310-422933/5-A	Lab Control Sample Dup	68	44								
MB 310-422933/1-A	Method Blank	81	62								

Surrogate Legend

DCB = DCB Decachlorobiphenyl (Surr)

TCX = Tetrachloro-m-xylene (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 310-422854/5
Matrix: Water
Analysis Batch: 422854

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/29/24 10:04	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/29/24 10:04	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/29/24 10:04	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/29/24 10:04	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/29/24 10:04	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/29/24 10:04	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/29/24 10:04	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/29/24 10:04	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/29/24 10:04	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/29/24 10:04	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/29/24 10:04	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/29/24 10:04	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/29/24 10:04	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/29/24 10:04	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/29/24 10:04	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/29/24 10:04	1
Acetone	<3.10		10.0	3.10	ug/L			05/29/24 10:04	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/29/24 10:04	1
Benzene	<0.220		0.500	0.220	ug/L			05/29/24 10:04	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/29/24 10:04	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/29/24 10:04	1
Bromoform	<0.780		5.00	0.780	ug/L			05/29/24 10:04	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/29/24 10:04	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/29/24 10:04	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/29/24 10:04	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/29/24 10:04	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/29/24 10:04	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/29/24 10:04	1
Chloroform	<1.30		3.00	1.30	ug/L			05/29/24 10:04	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/29/24 10:04	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/29/24 10:04	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/29/24 10:04	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/29/24 10:04	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/29/24 10:04	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/29/24 10:04	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/29/24 10:04	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/29/24 10:04	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/29/24 10:04	1
Styrene	<0.370		1.00	0.370	ug/L			05/29/24 10:04	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/29/24 10:04	1
Toluene	<0.430		1.00	0.430	ug/L			05/29/24 10:04	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/29/24 10:04	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/29/24 10:04	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/29/24 10:04	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/29/24 10:04	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/29/24 10:04	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/29/24 10:04	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/29/24 10:04	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-422854/5
Matrix: Water
Analysis Batch: 422854

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/29/24 10:04	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*115*		*73 - 130*		*05/29/24 10:04*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*05/29/24 10:04*	*1*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*		*05/29/24 10:04*	*1*

Lab Sample ID: LCS 310-422854/6
Matrix: Water
Analysis Batch: 422854

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	20.0	22.03		ug/L		110	71 - 120
1,1,1-Trichloroethane	20.0	22.45		ug/L		112	73 - 129
1,1,2,2-Tetrachloroethane	20.0	18.78		ug/L		94	68 - 124
1,1,2-Trichloroethane	20.0	20.39		ug/L		102	73 - 123
1,1-Dichloroethane	20.0	18.91		ug/L		95	70 - 127
1,1-Dichloroethene	20.0	19.54		ug/L		98	63 - 132
1,2,3-Trichloropropane	20.0	21.42		ug/L		107	65 - 127
1,2-Dibromo-3-Chloropropane	20.0	21.03		ug/L		105	50 - 150
1,2-Dibromoethane (EDB)	20.0	21.75		ug/L		109	75 - 125
1,2-Dichlorobenzene	20.0	21.61		ug/L		108	74 - 120
1,2-Dichloroethane	20.0	20.22		ug/L		101	71 - 125
1,2-Dichloropropane	20.0	20.74		ug/L		104	73 - 124
1,4-Dichlorobenzene	20.0	21.38		ug/L		107	72 - 120
2-Butanone (MEK)	40.0	34.43		ug/L		86	50 - 150
2-Hexanone	40.0	33.50		ug/L		84	60 - 140
4-Methyl-2-pentanone (MIBK)	40.0	34.00		ug/L		85	60 - 139
Acetone	40.0	33.27		ug/L		83	50 - 150
Acrylonitrile	200	185.2		ug/L		93	50 - 150
Benzene	20.0	20.41		ug/L		102	72 - 124
Bromochloromethane	20.0	21.53		ug/L		108	73 - 130
Bromodichloromethane	20.0	21.21		ug/L		106	74 - 122
Bromoform	20.0	21.93		ug/L		110	61 - 122
Carbon disulfide	20.0	18.28		ug/L		91	59 - 135
Carbon tetrachloride	20.0	25.02		ug/L		125	67 - 132
Chlorobenzene	20.0	21.06		ug/L		105	76 - 120
Chlorodibromomethane	20.0	22.45		ug/L		112	71 - 121
Chloroform	20.0	20.31		ug/L		102	72 - 125
cis-1,2-Dichloroethene	20.0	20.27		ug/L		101	74 - 123
cis-1,3-Dichloropropene	20.0	19.98		ug/L		100	71 - 125
Dibromomethane	20.0	20.74		ug/L		104	74 - 125
Ethylbenzene	20.0	20.93		ug/L		105	74 - 122
Iodomethane	20.0	19.33		ug/L		97	10 - 150
Methylene Chloride	20.0	18.74		ug/L		94	50 - 150
Styrene	20.0	21.92		ug/L		110	74 - 121
Tetrachloroethene	20.0	22.63		ug/L		113	71 - 130
Toluene	20.0	19.96		ug/L		100	74 - 123

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-422854/6
Matrix: Water
Analysis Batch: 422854

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
trans-1,2-Dichloroethene	20.0	20.47		ug/L		102	70 - 126
trans-1,3-Dichloropropene	20.0	20.54		ug/L		103	69 - 123
trans-1,4-Dichloro-2-butene	20.0	17.55		ug/L		88	50 - 150
Trichloroethene	20.0	22.88		ug/L		114	72 - 126
Vinyl acetate	40.0	36.82		ug/L		92	50 - 150
Xylenes, Total	40.0	42.34		ug/L		106	73 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*104*		*73 - 130*
Toluene-d8 (Surr)	*97*		*80 - 120*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*

Lab Sample ID: LCS 310-422854/7
Matrix: Water
Analysis Batch: 422854

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	17.75		ug/L		89	23 - 150
Chloroethane	20.0	17.76		ug/L		89	54 - 136
Chloromethane	20.0	16.07		ug/L		80	38 - 150
Trichlorofluoromethane	20.0	23.63		ug/L		118	54 - 149
Vinyl chloride	20.0	18.00		ug/L		90	56 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*117*		*73 - 130*
Toluene-d8 (Surr)	*94*		*80 - 120*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*

Lab Sample ID: MB 310-422943/5
Matrix: Water
Analysis Batch: 422943

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/29/24 17:41	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/29/24 17:41	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/29/24 17:41	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/29/24 17:41	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/29/24 17:41	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/29/24 17:41	1
1,1-Dichloropropene	<0.430		1.00	0.430	ug/L			05/29/24 17:41	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/29/24 17:41	1
1,2,4-Trichlorobenzene	<0.750		5.00	0.750	ug/L			05/29/24 17:41	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/29/24 17:41	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/29/24 17:41	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/29/24 17:41	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/29/24 17:41	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/29/24 17:41	1
1,3-Dichlorobenzene	<0.300		1.00	0.300	ug/L			05/29/24 17:41	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-422943/5
Matrix: Water
Analysis Batch: 422943

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichloropropane	<0.400		1.00	0.400	ug/L			05/29/24 17:41	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/29/24 17:41	1
2,2-Dichloropropane	<0.690		4.00	0.690	ug/L			05/29/24 17:41	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/29/24 17:41	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/29/24 17:41	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/29/24 17:41	1
Acetone	<3.10		10.0	3.10	ug/L			05/29/24 17:41	1
Acrolein	<3.60		10.0	3.60	ug/L			05/29/24 17:41	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/29/24 17:41	1
Allyl chloride	<0.700		2.00	0.700	ug/L			05/29/24 17:41	1
Benzene	<0.220		0.500	0.220	ug/L			05/29/24 17:41	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/29/24 17:41	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/29/24 17:41	1
Bromoform	<0.780		5.00	0.780	ug/L			05/29/24 17:41	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/29/24 17:41	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/29/24 17:41	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/29/24 17:41	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/29/24 17:41	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/29/24 17:41	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/29/24 17:41	1
Chloroform	<1.30		3.00	1.30	ug/L			05/29/24 17:41	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/29/24 17:41	1
Chloroprene	<0.230		1.00	0.230	ug/L			05/29/24 17:41	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/29/24 17:41	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/29/24 17:41	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/29/24 17:41	1
Dichlorodifluoromethane	<0.250		3.00	0.250	ug/L			05/29/24 17:41	1
Ethyl methacrylate	<0.680		2.00	0.680	ug/L			05/29/24 17:41	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/29/24 17:41	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/29/24 17:41	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/29/24 17:41	1
Methacrylonitrile	<3.30		10.0	3.30	ug/L			05/29/24 17:41	1
Methyl methacrylate	<0.760		2.00	0.760	ug/L			05/29/24 17:41	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/29/24 17:41	1
Naphthalene	<3.00		5.00	3.00	ug/L			05/29/24 17:41	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/29/24 17:41	1
Propionitrile	<3.40		10.0	3.40	ug/L			05/29/24 17:41	1
Styrene	<0.370		1.00	0.370	ug/L			05/29/24 17:41	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/29/24 17:41	1
Toluene	<0.430		1.00	0.430	ug/L			05/29/24 17:41	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/29/24 17:41	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/29/24 17:41	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/29/24 17:41	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/29/24 17:41	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/29/24 17:41	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/29/24 17:41	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/29/24 17:41	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/29/24 17:41	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-422943/5
Matrix: Water
Analysis Batch: 422943

Client Sample ID: Method Blank
Prep Type: Total/NA

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	*102*		*73 - 130*		*05/29/24 17:41*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*05/29/24 17:41*	*1*
4-Bromofluorobenzene (Surr)	*107*		*80 - 120*		*05/29/24 17:41*	*1*

Lab Sample ID: LCS 310-422943/6
Matrix: Water
Analysis Batch: 422943

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	20.0	19.56		ug/L		98	71 - 120
1,1,1-Trichloroethane	20.0	18.86		ug/L		94	73 - 129
1,1,2,2-Tetrachloroethane	20.0	19.30		ug/L		97	68 - 124
1,1,2-Trichloroethane	20.0	19.50		ug/L		97	73 - 123
1,1-Dichloroethane	20.0	19.73		ug/L		99	70 - 127
1,1-Dichloroethene	20.0	19.65		ug/L		98	63 - 132
1,1-Dichloropropene	20.0	20.16		ug/L		101	69 - 132
1,2,3-Trichloropropane	20.0	18.79		ug/L		94	65 - 127
1,2,4-Trichlorobenzene	20.0	17.93		ug/L		90	68 - 124
1,2-Dibromo-3-Chloropropane	20.0	18.67		ug/L		93	50 - 150
1,2-Dibromoethane (EDB)	20.0	18.50		ug/L		92	75 - 125
1,2-Dichlorobenzene	20.0	19.72		ug/L		99	74 - 120
1,2-Dichloroethane	20.0	18.14		ug/L		91	71 - 125
1,2-Dichloropropane	20.0	19.58		ug/L		98	73 - 124
1,3-Dichlorobenzene	20.0	18.91		ug/L		95	72 - 120
1,3-Dichloropropane	20.0	19.15		ug/L		96	72 - 125
1,4-Dichlorobenzene	20.0	18.94		ug/L		95	72 - 120
2,2-Dichloropropane	20.0	17.29		ug/L		86	50 - 150
2-Butanone (MEK)	40.0	39.48		ug/L		99	50 - 150
2-Hexanone	40.0	38.58		ug/L		96	60 - 140
4-Methyl-2-pentanone (MIBK)	40.0	39.01		ug/L		98	60 - 139
Acetone	40.0	39.27		ug/L		98	50 - 150
Acrolein	94.8	95.76		ug/L		101	49 - 150
Acrylonitrile	200	197.7		ug/L		99	50 - 150
Allyl chloride	20.0	19.07		ug/L		95	49 - 150
Benzene	20.0	19.92		ug/L		100	72 - 124
Bromochloromethane	20.0	19.15		ug/L		96	73 - 130
Bromodichloromethane	20.0	18.39		ug/L		92	74 - 122
Bromoform	20.0	17.76		ug/L		89	61 - 122
Carbon disulfide	20.0	20.20		ug/L		101	59 - 135
Carbon tetrachloride	20.0	19.40		ug/L		97	67 - 132
Chlorobenzene	20.0	19.58		ug/L		98	76 - 120
Chlorodibromomethane	20.0	18.04		ug/L		90	71 - 121
Chloroform	20.0	18.43		ug/L		92	72 - 125
Chloroprene	20.0	21.09		ug/L		105	69 - 133
cis-1,2-Dichloroethene	20.0	19.18		ug/L		96	74 - 123
cis-1,3-Dichloropropene	20.0	19.66		ug/L		98	71 - 125
Dibromomethane	20.0	18.65		ug/L		93	74 - 125
Ethyl methacrylate	20.0	18.43		ug/L		92	70 - 129

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-422943/6
Matrix: Water
Analysis Batch: 422943

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	20.0	20.83		ug/L		104	74 - 122
Iodomethane	20.0	13.50		ug/L		67	10 - 150
Methacrylonitrile	200	194.5		ug/L		97	69 - 129
Methyl methacrylate	40.0	39.40		ug/L		98	68 - 131
Methylene Chloride	20.0	21.21		ug/L		106	50 - 150
Naphthalene	20.0	17.86		ug/L		89	50 - 150
Propionitrile	200	199.3		ug/L		100	63 - 135
Styrene	20.0	19.94		ug/L		100	74 - 121
Tetrachloroethene	20.0	18.92		ug/L		95	71 - 130
Toluene	20.0	19.22		ug/L		96	74 - 123
trans-1,2-Dichloroethene	20.0	18.86		ug/L		94	70 - 126
trans-1,3-Dichloropropene	20.0	18.40		ug/L		92	69 - 123
trans-1,4-Dichloro-2-butene	20.0	18.46		ug/L		92	50 - 150
Trichloroethene	20.0	19.65		ug/L		98	72 - 126
Vinyl acetate	40.0	34.99		ug/L		87	50 - 150
Xylenes, Total	40.0	40.56		ug/L		101	73 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*96*		*73 - 130*
Toluene-d8 (Surr)	*104*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*

Lab Sample ID: LCS 310-422943/7
Matrix: Water
Analysis Batch: 422943

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	16.63		ug/L		83	23 - 150
Chloroethane	20.0	19.44		ug/L		97	54 - 136
Chloromethane	20.0	20.77		ug/L		104	38 - 150
Dichlorodifluoromethane	20.0	17.03		ug/L		85	39 - 150
Trichlorofluoromethane	20.0	17.96		ug/L		90	54 - 149
Vinyl chloride	20.0	20.30		ug/L		101	56 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*101*		*73 - 130*
Toluene-d8 (Surr)	*101*		*80 - 120*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*

Lab Sample ID: MB 310-423506/5
Matrix: Water
Analysis Batch: 423506

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			06/04/24 13:33	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			06/04/24 13:33	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			06/04/24 13:33	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			06/04/24 13:33	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-423506/5
Matrix: Water
Analysis Batch: 423506

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			06/04/24 13:33	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			06/04/24 13:33	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			06/04/24 13:33	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			06/04/24 13:33	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			06/04/24 13:33	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			06/04/24 13:33	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			06/04/24 13:33	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			06/04/24 13:33	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			06/04/24 13:33	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			06/04/24 13:33	1
2-Hexanone	<2.00		10.0	2.00	ug/L			06/04/24 13:33	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			06/04/24 13:33	1
Acetone	<3.10		10.0	3.10	ug/L			06/04/24 13:33	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			06/04/24 13:33	1
Benzene	<0.220		0.500	0.220	ug/L			06/04/24 13:33	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			06/04/24 13:33	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			06/04/24 13:33	1
Bromoform	<0.780		5.00	0.780	ug/L			06/04/24 13:33	1
Bromomethane	<1.10		4.00	1.10	ug/L			06/04/24 13:33	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			06/04/24 13:33	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			06/04/24 13:33	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			06/04/24 13:33	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			06/04/24 13:33	1
Chloroethane	<0.790		4.00	0.790	ug/L			06/04/24 13:33	1
Chloroform	<1.30		3.00	1.30	ug/L			06/04/24 13:33	1
Chloromethane	<0.610		3.00	0.610	ug/L			06/04/24 13:33	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			06/04/24 13:33	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			06/04/24 13:33	1
Dibromomethane	<0.330		1.00	0.330	ug/L			06/04/24 13:33	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			06/04/24 13:33	1
Iodomethane	<7.00		10.0	7.00	ug/L			06/04/24 13:33	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			06/04/24 13:33	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			06/04/24 13:33	1
o-Xylene	<0.400		1.00	0.400	ug/L			06/04/24 13:33	1
Styrene	<0.370		1.00	0.370	ug/L			06/04/24 13:33	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			06/04/24 13:33	1
Toluene	<0.430		1.00	0.430	ug/L			06/04/24 13:33	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			06/04/24 13:33	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			06/04/24 13:33	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			06/04/24 13:33	1
Trichloroethene	<0.430		1.00	0.430	ug/L			06/04/24 13:33	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			06/04/24 13:33	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			06/04/24 13:33	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			06/04/24 13:33	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			06/04/24 13:33	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*115*		*73 - 130*		*06/04/24 13:33*	*1*

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-423506/5
Matrix: Water
Analysis Batch: 423506

Client Sample ID: Method Blank
Prep Type: Total/NA

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		80 - 120		06/04/24 13:33	1
4-Bromofluorobenzene (Surr)	102		80 - 120		06/04/24 13:33	1

Lab Sample ID: LCS 310-423506/6
Matrix: Water
Analysis Batch: 423506

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	20.0	20.64		ug/L		103	71 - 120
1,1,1-Trichloroethane	20.0	21.27		ug/L		106	73 - 129
1,1,2,2-Tetrachloroethane	20.0	18.80		ug/L		94	68 - 124
1,1,2-Trichloroethane	20.0	19.42		ug/L		97	73 - 123
1,1-Dichloroethane	20.0	17.99		ug/L		90	70 - 127
1,1-Dichloroethene	20.0	18.15		ug/L		91	63 - 132
1,2,3-Trichloropropane	20.0	19.90		ug/L		100	65 - 127
1,2-Dibromo-3-Chloropropane	20.0	19.78		ug/L		99	50 - 150
1,2-Dibromoethane (EDB)	20.0	20.62		ug/L		103	75 - 125
1,2-Dichlorobenzene	20.0	20.15		ug/L		101	74 - 120
1,2-Dichloroethane	20.0	19.37		ug/L		97	71 - 125
1,2-Dichloropropane	20.0	19.91		ug/L		100	73 - 124
1,4-Dichlorobenzene	20.0	19.99		ug/L		100	72 - 120
2-Butanone (MEK)	40.0	37.72		ug/L		94	50 - 150
2-Hexanone	40.0	39.44		ug/L		99	60 - 140
4-Methyl-2-pentanone (MIBK)	40.0	37.64		ug/L		94	60 - 139
Acetone	40.0	31.37		ug/L		78	50 - 150
Acrylonitrile	200	173.3		ug/L		87	50 - 150
Benzene	20.0	18.79		ug/L		94	72 - 124
Bromochloromethane	20.0	20.24		ug/L		101	73 - 130
Bromodichloromethane	20.0	20.32		ug/L		102	74 - 122
Bromoform	20.0	20.74		ug/L		104	61 - 122
Carbon disulfide	20.0	17.12		ug/L		86	59 - 135
Carbon tetrachloride	20.0	24.06		ug/L		120	67 - 132
Chlorobenzene	20.0	19.87		ug/L		99	76 - 120
Chlorodibromomethane	20.0	20.80		ug/L		104	71 - 121
Chloroform	20.0	19.47		ug/L		97	72 - 125
cis-1,2-Dichloroethene	20.0	18.31		ug/L		92	74 - 123
cis-1,3-Dichloropropene	20.0	20.77		ug/L		104	71 - 125
Dibromomethane	20.0	19.33		ug/L		97	74 - 125
Ethylbenzene	20.0	20.29		ug/L		101	74 - 122
Iodomethane	20.0	15.69		ug/L		78	10 - 150
Methylene Chloride	20.0	17.28		ug/L		86	50 - 150
Styrene	20.0	20.39		ug/L		102	74 - 121
Tetrachloroethene	20.0	20.67		ug/L		103	71 - 130
Toluene	20.0	19.61		ug/L		98	74 - 123
trans-1,2-Dichloroethene	20.0	18.80		ug/L		94	70 - 126
trans-1,3-Dichloropropene	20.0	20.64		ug/L		103	69 - 123
trans-1,4-Dichloro-2-butene	20.0	19.99		ug/L		100	50 - 150
Trichloroethene	20.0	20.41		ug/L		102	72 - 126

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-423506/6
Matrix: Water
Analysis Batch: 423506

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Vinyl acetate			40.0	40.38		ug/L		101	50 - 150		
Xylenes, Total			40.0	39.86		ug/L		100	73 - 123		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*101*		*73 - 130*
Toluene-d8 (Surr)	*99*		*80 - 120*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*

Lab Sample ID: LCS 310-423506/7
Matrix: Water
Analysis Batch: 423506

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Bromomethane			20.0	18.11		ug/L		91	23 - 150		
Chloroethane			20.0	20.11		ug/L		101	54 - 136		
Chloromethane			20.0	17.81		ug/L		89	38 - 150		
Trichlorofluoromethane			20.0	24.46		ug/L		122	54 - 149		
Vinyl chloride			20.0	20.68		ug/L		103	56 - 140		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*117*		*73 - 130*
Toluene-d8 (Surr)	*97*		*80 - 120*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*

Lab Sample ID: 310-282049-6 MS
Matrix: Water
Analysis Batch: 423506

Client Sample ID: OW-113B
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
1,1,1,2-Tetrachloroethane	<0.380		20.0	17.17		ug/L		86	55 - 130		
1,1,1-Trichloroethane	<0.190		20.0	19.74		ug/L		99	52 - 130		
1,1,2,2-Tetrachloroethane	<0.470		20.0	15.68		ug/L		78	54 - 130		
1,1,2-Trichloroethane	<0.450		20.0	16.37		ug/L		82	58 - 130		
1,1-Dichloroethane	<0.220		20.0	17.94		ug/L		90	49 - 130		
1,1-Dichloroethene	<0.560		20.0	18.48		ug/L		92	37 - 132		
1,2,3-Trichloropropane	<0.590		20.0	16.01		ug/L		80	49 - 130		
1,2-Dibromo-3-Chloropropane	<1.20		20.0	15.67		ug/L		78	38 - 150		
1,2-Dibromoethane (EDB)	<0.340		20.0	18.00		ug/L		90	60 - 130		
1,2-Dichlorobenzene	<0.370		20.0	16.06		ug/L		80	59 - 130		
1,2-Dichloroethane	<0.390		20.0	18.29		ug/L		91	51 - 130		
1,2-Dichloropropane	<0.270		20.0	18.44		ug/L		92	57 - 130		
1,4-Dichlorobenzene	<0.230		20.0	16.15		ug/L		81	57 - 130		
2-Butanone (MEK)	<2.10		40.0	31.96		ug/L		80	38 - 150		
2-Hexanone	<2.00		40.0	29.16		ug/L		73	46 - 140		
4-Methyl-2-pentanone (MIBK)	<2.10		40.0	29.82		ug/L		75	47 - 139		
Acetone	<3.10		40.0	29.61		ug/L		74	31 - 150		
Acrylonitrile	<2.20		200	166.1		ug/L		83	40 - 150		
Benzene	<0.220		20.0	18.76		ug/L		94	46 - 130		

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 310-282049-6 MS
Matrix: Water
Analysis Batch: 423506

Client Sample ID: OW-113B
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Bromochloromethane	<0.540		20.0	20.26		ug/L		101	57 - 130
Bromodichloromethane	<0.390		20.0	17.87		ug/L		89	57 - 130
Bromoform	<0.780		20.0	15.79		ug/L		79	44 - 130
Carbon disulfide	<0.450		20.0	20.29		ug/L		101	38 - 135
Carbon tetrachloride	<0.650		20.0	21.27		ug/L		106	45 - 132
Chlorobenzene	<0.400		20.0	16.86		ug/L		84	59 - 130
Chlorodibromomethane	<0.750		20.0	16.84		ug/L		84	54 - 130
Chloroform	<1.30		20.0	18.43		ug/L		92	51 - 130
cis-1,2-Dichloroethene	<0.210		20.0	18.10		ug/L		91	45 - 130
cis-1,3-Dichloropropene	<0.250		20.0	18.10		ug/L		90	53 - 130
Dibromomethane	<0.330		20.0	17.88		ug/L		89	59 - 130
Ethylbenzene	<0.310		20.0	17.17		ug/L		86	45 - 130
Iodomethane	<7.00		20.0	15.98		ug/L		80	10 - 150
Methylene Chloride	<1.70		20.0	18.73		ug/L		94	37 - 150
Styrene	<0.370		20.0	17.27		ug/L		86	47 - 130
Tetrachloroethene	<0.480		20.0	17.61		ug/L		88	47 - 130
Toluene	<0.430		20.0	17.80		ug/L		89	51 - 130
trans-1,2-Dichloroethene	<0.270		20.0	19.69		ug/L		98	48 - 130
trans-1,3-Dichloropropene	<0.560		20.0	17.48		ug/L		87	50 - 130
trans-1,4-Dichloro-2-butene	<1.10		20.0	15.27		ug/L		76	26 - 150
Trichloroethene	<0.430		20.0	19.08		ug/L		95	51 - 130
Vinyl acetate	<2.50		40.0	37.34		ug/L		93	29 - 150
Xylenes, Total	<0.400		40.0	35.48		ug/L		89	43 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*103*		*73 - 130*
Toluene-d8 (Surr)	*99*		*80 - 120*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*

Lab Sample ID: 310-282049-6 MSD
Matrix: Water
Analysis Batch: 423506

Client Sample ID: OW-113B
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	<0.380		20.0	17.07		ug/L		85	55 - 130	1	20
1,1,1-Trichloroethane	<0.190		20.0	18.82		ug/L		94	52 - 130	5	20
1,1,2,2-Tetrachloroethane	<0.470		20.0	15.38		ug/L		77	54 - 130	2	20
1,1,2-Trichloroethane	<0.450		20.0	15.87		ug/L		79	58 - 130	3	20
1,1-Dichloroethane	<0.220		20.0	17.00		ug/L		85	49 - 130	5	20
1,1-Dichloroethene	<0.560		20.0	17.28		ug/L		86	37 - 132	7	26
1,2,3-Trichloropropane	<0.590		20.0	16.09		ug/L		80	49 - 130	0	26
1,2-Dibromo-3-Chloropropane	<1.20		20.0	15.37		ug/L		77	38 - 150	2	20
1,2-Dibromoethane (EDB)	<0.340		20.0	17.36		ug/L		87	60 - 130	4	20
1,2-Dichlorobenzene	<0.370		20.0	16.42		ug/L		82	59 - 130	2	20
1,2-Dichloroethane	<0.390		20.0	17.70		ug/L		89	51 - 130	3	20
1,2-Dichloropropane	<0.270		20.0	17.47		ug/L		87	57 - 130	5	20
1,4-Dichlorobenzene	<0.230		20.0	16.37		ug/L		82	57 - 130	1	20
2-Butanone (MEK)	<2.10		40.0	31.17		ug/L		78	38 - 150	3	20

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 310-282049-6 MSD
Matrix: Water
Analysis Batch: 423506

Client Sample ID: OW-113B
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2-Hexanone	<2.00		40.0	30.73		ug/L		77	46 - 140	5	20
4-Methyl-2-pentanone (MIBK)	<2.10		40.0	30.69		ug/L		77	47 - 139	3	20
Acetone	<3.10		40.0	28.91		ug/L		72	31 - 150	2	29
Acrylonitrile	<2.20		200	166.3		ug/L		83	40 - 150	0	20
Benzene	<0.220		20.0	17.75		ug/L		89	46 - 130	6	20
Bromochloromethane	<0.540		20.0	19.19		ug/L		96	57 - 130	5	20
Bromodichloromethane	<0.390		20.0	17.72		ug/L		89	57 - 130	1	20
Bromoform	<0.780		20.0	16.03		ug/L		80	44 - 130	2	20
Carbon disulfide	<0.450		20.0	18.06		ug/L		90	38 - 135	12	30
Carbon tetrachloride	<0.650		20.0	20.34		ug/L		102	45 - 132	4	20
Chlorobenzene	<0.400		20.0	16.36		ug/L		82	59 - 130	3	20
Chlorodibromomethane	<0.750		20.0	17.07		ug/L		85	54 - 130	1	20
Chloroform	<1.30		20.0	18.04		ug/L		90	51 - 130	2	20
cis-1,2-Dichloroethene	<0.210		20.0	17.23		ug/L		86	45 - 130	5	20
cis-1,3-Dichloropropene	<0.250		20.0	17.52		ug/L		88	53 - 130	3	20
Dibromomethane	<0.330		20.0	17.34		ug/L		87	59 - 130	3	20
Ethylbenzene	<0.310		20.0	16.65		ug/L		83	45 - 130	3	20
Iodomethane	<7.00		20.0	18.39		ug/L		92	10 - 150	14	35
Methylene Chloride	<1.70		20.0	17.57		ug/L		88	37 - 150	6	24
Styrene	<0.370		20.0	16.95		ug/L		85	47 - 130	2	20
Tetrachloroethene	<0.480		20.0	17.49		ug/L		87	47 - 130	1	20
Toluene	<0.430		20.0	17.25		ug/L		86	51 - 130	3	20
trans-1,2-Dichloroethene	<0.270		20.0	18.04		ug/L		90	48 - 130	9	22
trans-1,3-Dichloropropene	<0.560		20.0	17.08		ug/L		85	50 - 130	2	20
trans-1,4-Dichloro-2-butene	<1.10		20.0	15.62		ug/L		78	26 - 150	2	23
Trichloroethene	<0.430		20.0	18.15		ug/L		91	51 - 130	5	20
Vinyl acetate	<2.50		40.0	37.87		ug/L		95	29 - 150	1	23
Xylenes, Total	<0.400		40.0	33.90		ug/L		85	43 - 130	5	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*102*		*73 - 130*
Toluene-d8 (Surr)	*100*		*80 - 120*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 310-422930/1-A
Matrix: Water
Analysis Batch: 423326

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 422930

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4,5-Tetrachlorobenzene	<0.540		10.0	0.540	ug/L		05/29/24 07:35	06/03/24 20:40	1
1,3-Dinitrobenzene	<3.20		10.0	3.20	ug/L		05/29/24 07:35	06/03/24 20:40	1
2,3,4,6-Tetrachlorophenol	<5.30		10.0	5.30	ug/L		05/29/24 07:35	06/03/24 20:40	1
2,4,5-Trichlorophenol	<5.30		10.0	5.30	ug/L		05/29/24 07:35	06/03/24 20:40	1
2,4,6-Trichlorophenol	<5.00		10.0	5.00	ug/L		05/29/24 07:35	06/03/24 20:40	1
2,4-Dichlorophenol	<0.850		10.0	0.850	ug/L		05/29/24 07:35	06/03/24 20:40	1
2,4-Dimethylphenol	<0.580		10.0	0.580	ug/L		05/29/24 07:35	06/03/24 20:40	1
2,4-Dinitrophenol	<13.0		20.0	13.0	ug/L		05/29/24 07:35	06/03/24 20:40	1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 310-422930/1-A
Matrix: Water
Analysis Batch: 423326

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 422930

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-Dinitrotoluene	<6.40		10.0	6.40	ug/L		05/29/24 07:35	06/03/24 20:40	1
2,6-Dichlorophenol	<0.690		10.0	0.690	ug/L		05/29/24 07:35	06/03/24 20:40	1
2,6-Dinitrotoluene	<0.520		10.0	0.520	ug/L		05/29/24 07:35	06/03/24 20:40	1
2-Chloronaphthalene	<0.640		10.0	0.640	ug/L		05/29/24 07:35	06/03/24 20:40	1
2-Chlorophenol	<0.540		10.0	0.540	ug/L		05/29/24 07:35	06/03/24 20:40	1
2-Methylnaphthalene	<0.590		10.0	0.590	ug/L		05/29/24 07:35	06/03/24 20:40	1
2-Methylphenol	<0.650		10.0	0.650	ug/L		05/29/24 07:35	06/03/24 20:40	1
2-Nitroaniline	<5.90		10.0	5.90	ug/L		05/29/24 07:35	06/03/24 20:40	1
2-Nitrophenol	<6.80		10.0	6.80	ug/L		05/29/24 07:35	06/03/24 20:40	1
3,3'-Dichlorobenzidine	<1.40		10.0	1.40	ug/L		05/29/24 07:35	06/03/24 20:40	1
3-Nitroaniline	<2.70		10.0	2.70	ug/L		05/29/24 07:35	06/03/24 20:40	1
4,6-Dinitro-2-methylphenol	<6.90		10.0	6.90	ug/L		05/29/24 07:35	06/03/24 20:40	1
4-Bromophenyl phenyl ether	<0.700		10.0	0.700	ug/L		05/29/24 07:35	06/03/24 20:40	1
4-Chloro-3-methylphenol	<0.840		10.0	0.840	ug/L		05/29/24 07:35	06/03/24 20:40	1
4-Chloroaniline	<0.620		10.0	0.620	ug/L		05/29/24 07:35	06/03/24 20:40	1
4-Chlorophenyl phenyl ether	<0.690		10.0	0.690	ug/L		05/29/24 07:35	06/03/24 20:40	1
Methylphenol, 3 & 4	<0.700		10.0	0.700	ug/L		05/29/24 07:35	06/03/24 20:40	1
4-Nitroaniline	<1.30		10.0	1.30	ug/L		05/29/24 07:35	06/03/24 20:40	1
4-Nitrophenol	<7.60		10.0	7.60	ug/L		05/29/24 07:35	06/03/24 20:40	1
Acenaphthene	<0.640		10.0	0.640	ug/L		05/29/24 07:35	06/03/24 20:40	1
Acenaphthylene	<0.720		10.0	0.720	ug/L		05/29/24 07:35	06/03/24 20:40	1
Acetophenone	<0.690		10.0	0.690	ug/L		05/29/24 07:35	06/03/24 20:40	1
Anthracene	<0.870		10.0	0.870	ug/L		05/29/24 07:35	06/03/24 20:40	1
Benzo[a]anthracene	<0.850		10.0	0.850	ug/L		05/29/24 07:35	06/03/24 20:40	1
Benzo[a]pyrene	<8.10		10.0	8.10	ug/L		05/29/24 07:35	06/03/24 20:40	1
Benzo[b]fluoranthene	<4.90		10.0	4.90	ug/L		05/29/24 07:35	06/03/24 20:40	1
Benzo[g,h,i]perylene	<6.30		10.0	6.30	ug/L		05/29/24 07:35	06/03/24 20:40	1
Benzo[k]fluoranthene	<2.20		10.0	2.20	ug/L		05/29/24 07:35	06/03/24 20:40	1
Benzyl alcohol	<1.30		10.0	1.30	ug/L		05/29/24 07:35	06/03/24 20:40	1
Bis(2-chloroethoxy)methane	<0.760		10.0	0.760	ug/L		05/29/24 07:35	06/03/24 20:40	1
Bis(2-chloroethyl)ether	<0.820		10.0	0.820	ug/L		05/29/24 07:35	06/03/24 20:40	1
bis (2-chloroisopropyl) ether	<0.540		10.0	0.540	ug/L		05/29/24 07:35	06/03/24 20:40	1
Bis(2-ethylhexyl) phthalate	<5.50		10.0	5.50	ug/L		05/29/24 07:35	06/03/24 20:40	1
Butyl benzyl phthalate	<5.40		10.0	5.40	ug/L		05/29/24 07:35	06/03/24 20:40	1
Chrysene	<0.870		10.0	0.870	ug/L		05/29/24 07:35	06/03/24 20:40	1
Dibenzo(a,h)anthracene	<3.90		10.0	3.90	ug/L		05/29/24 07:35	06/03/24 20:40	1
Dibenzofuran	<0.740		10.0	0.740	ug/L		05/29/24 07:35	06/03/24 20:40	1
Diethyl phthalate	<1.70		10.0	1.70	ug/L		05/29/24 07:35	06/03/24 20:40	1
Dimethyl phthalate	<1.00		10.0	1.00	ug/L		05/29/24 07:35	06/03/24 20:40	1
Di-n-butyl phthalate	<5.60		10.0	5.60	ug/L		05/29/24 07:35	06/03/24 20:40	1
Di-n-octyl phthalate	<7.00		20.0	7.00	ug/L		05/29/24 07:35	06/03/24 20:40	1
Diphenylamine	<6.00		10.0	6.00	ug/L		05/29/24 07:35	06/03/24 20:40	1
Fluoranthene	<1.70		10.0	1.70	ug/L		05/29/24 07:35	06/03/24 20:40	1
Fluorene	<0.790		10.0	0.790	ug/L		05/29/24 07:35	06/03/24 20:40	1
Hexachlorobenzene	<0.700		10.0	0.700	ug/L		05/29/24 07:35	06/03/24 20:40	1
Hexachlorobutadiene	<0.860		10.0	0.860	ug/L		05/29/24 07:35	06/03/24 20:40	1
Hexachlorocyclopentadiene	<5.10		10.0	5.10	ug/L		05/29/24 07:35	06/03/24 20:40	1
Hexachloroethane	<0.970		10.0	0.970	ug/L		05/29/24 07:35	06/03/24 20:40	1
Indeno[1,2,3-cd]pyrene	<4.20		10.0	4.20	ug/L		05/29/24 07:35	06/03/24 20:40	1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 310-422930/1-A
Matrix: Water
Analysis Batch: 423326

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 422930

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Isophorone	<0.930		10.0	0.930	ug/L		05/29/24 07:35	06/03/24 20:40	1
Nitrobenzene	<0.800		10.0	0.800	ug/L		05/29/24 07:35	06/03/24 20:40	1
N-Nitrosodimethylamine	<0.720		10.0	0.720	ug/L		05/29/24 07:35	06/03/24 20:40	1
N-Nitrosodi-n-propylamine	<0.920		10.0	0.920	ug/L		05/29/24 07:35	06/03/24 20:40	1
N-Nitrosodiphenylamine	<0.750		10.0	0.750	ug/L		05/29/24 07:35	06/03/24 20:40	1
Pentachlorophenol	<9.60		10.0	9.60	ug/L		05/29/24 07:35	06/03/24 20:40	1
Phenanthrene	<0.790		10.0	0.790	ug/L		05/29/24 07:35	06/03/24 20:40	1
Phenol	<1.10		10.0	1.10	ug/L		05/29/24 07:35	06/03/24 20:40	1
Pyrene	<0.790		10.0	0.790	ug/L		05/29/24 07:35	06/03/24 20:40	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorophenol (Surr)	*81*		*25 - 110*	*05/29/24 07:35*	*06/03/24 20:40*	*1*
Phenol-d5 (Surr)	*64*		*21 - 110*	*05/29/24 07:35*	*06/03/24 20:40*	*1*
Nitrobenzene-d5 (Surr)	*109*		*45 - 129*	*05/29/24 07:35*	*06/03/24 20:40*	*1*
2-Fluorobiphenyl (Surr)	*90*		*39 - 118*	*05/29/24 07:35*	*06/03/24 20:40*	*1*
2,4,6-Tribromophenol (Surr)	*88*		*27 - 136*	*05/29/24 07:35*	*06/03/24 20:40*	*1*
Terphenyl-d14 (Surr)	*96*		*12 - 144*	*05/29/24 07:35*	*06/03/24 20:40*	*1*

Lab Sample ID: MB 310-422930/1-A
Matrix: Water
Analysis Batch: 423476

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 422930

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	<2.30		10.0	2.30	ug/L		05/29/24 07:35	06/04/24 15:23	1
1,4-Naphthoquinone	<3.60		10.0	3.60	ug/L		05/29/24 07:35	06/04/24 15:23	1
1,4-phenylenediamine	<1.90		10.0	1.90	ug/L		05/29/24 07:35	06/04/24 15:23	1
1-Naphthylamine	<2.50		10.0	2.50	ug/L		05/29/24 07:35	06/04/24 15:23	1
2-Acetylaminofluorene	<2.70		10.0	2.70	ug/L		05/29/24 07:35	06/04/24 15:23	1
2-Naphthylamine	<2.10		10.0	2.10	ug/L		05/29/24 07:35	06/04/24 15:23	1
3,3'-Dimethylbenzidine	<1.50		10.0	1.50	ug/L		05/29/24 07:35	06/04/24 15:23	1
3-Methylcholanthrene	<0.320		10.0	0.320	ug/L		05/29/24 07:35	06/04/24 15:23	1
4-Aminobiphenyl	<2.20		10.0	2.20	ug/L		05/29/24 07:35	06/04/24 15:23	1
5-Nitro-o-toluidine	<2.80		10.0	2.80	ug/L		05/29/24 07:35	06/04/24 15:23	1
7,12-Dimethylbenz(a)anthracene	<1.90		10.0	1.90	ug/L		05/29/24 07:35	06/04/24 15:23	1
Chlorobenzilate	<3.60		10.0	3.60	ug/L		05/29/24 07:35	06/04/24 15:23	1
Diallate	<4.00		10.0	4.00	ug/L		05/29/24 07:35	06/04/24 15:23	1
Dimethoate	<3.60		10.0	3.60	ug/L		05/29/24 07:35	06/04/24 15:23	1
Dinoseb	<2.40		10.0	2.40	ug/L		05/29/24 07:35	06/04/24 15:23	1
Disulfoton	<2.40		10.0	2.40	ug/L		05/29/24 07:35	06/04/24 15:23	1
Ethyl methanesulfonate	<3.60		10.0	3.60	ug/L		05/29/24 07:35	06/04/24 15:23	1
Ethyl Parathion	<2.20		10.0	2.20	ug/L		05/29/24 07:35	06/04/24 15:23	1
Famphur	<3.80		10.0	3.80	ug/L		05/29/24 07:35	06/04/24 15:23	1
Hexachloropropene	<2.60		10.0	2.60	ug/L		05/29/24 07:35	06/04/24 15:23	1
Isodrin	<4.70		10.0	4.70	ug/L		05/29/24 07:35	06/04/24 15:23	1
Isosafrole	<2.30		10.0	2.30	ug/L		05/29/24 07:35	06/04/24 15:23	1
Kepone	<1.00		10.0	1.00	ug/L		05/29/24 07:35	06/04/24 15:23	1
Methapyrilene	<0.760		10.0	0.760	ug/L		05/29/24 07:35	06/04/24 15:23	1
Methyl methanesulfonate	<3.30		10.0	3.30	ug/L		05/29/24 07:35	06/04/24 15:23	1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 310-422930/1-A
Matrix: Water
Analysis Batch: 423476

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 422930

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl parathion	<2.30		10.0	2.30	ug/L		05/29/24 07:35	06/04/24 15:23	1
N-Nitrosodiethylamine	<3.40		10.0	3.40	ug/L		05/29/24 07:35	06/04/24 15:23	1
N-Nitrosodi-n-butylamine	<3.90		10.0	3.90	ug/L		05/29/24 07:35	06/04/24 15:23	1
N-Nitrosomethylethylamine	<4.90		10.0	4.90	ug/L		05/29/24 07:35	06/04/24 15:23	1
N-Nitrosopiperidine	<2.70		10.0	2.70	ug/L		05/29/24 07:35	06/04/24 15:23	1
N-Nitrosopyrrolidine	<3.60		10.0	3.60	ug/L		05/29/24 07:35	06/04/24 15:23	1
o,o',o''-Triethylphosphorothioate	<3.20		10.0	3.20	ug/L		05/29/24 07:35	06/04/24 15:23	1
o-Toluidine	<2.90		10.0	2.90	ug/L		05/29/24 07:35	06/04/24 15:23	1
p-Dimethylamino azobenzene	<2.20		10.0	2.20	ug/L		05/29/24 07:35	06/04/24 15:23	1
Pentachlorobenzene	<2.80		10.0	2.80	ug/L		05/29/24 07:35	06/04/24 15:23	1
Pentachloronitrobenzene	<5.80		10.0	5.80	ug/L		05/29/24 07:35	06/04/24 15:23	1
Phenacetin	<1.90		10.0	1.90	ug/L		05/29/24 07:35	06/04/24 15:23	1
Phorate	<3.20		10.0	3.20	ug/L		05/29/24 07:35	06/04/24 15:23	1
Pronamide	<2.70		10.0	2.70	ug/L		05/29/24 07:35	06/04/24 15:23	1
Safrole	<2.80		10.0	2.80	ug/L		05/29/24 07:35	06/04/24 15:23	1
Thionazin	<3.50		10.0	3.50	ug/L		05/29/24 07:35	06/04/24 15:23	1

Lab Sample ID: LCS 310-422930/2-A
Matrix: Water
Analysis Batch: 423326

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 422930

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2,4,5-Tetrachlorobenzene	100	80.62		ug/L		81	36 - 110
1,3-Dinitrobenzene	100	91.77		ug/L		92	45 - 138
2,3,4,6-Tetrachlorophenol	100	94.93		ug/L		95	33 - 134
2,4,5-Trichlorophenol	100	95.06		ug/L		95	35 - 133
2,4,6-Trichlorophenol	100	102.6		ug/L		103	28 - 139
2,4-Dichlorophenol	100	96.41		ug/L		96	41 - 124
2,4-Dimethylphenol	100	94.72		ug/L		95	31 - 142
2,4-Dinitrophenol	200	97.66		ug/L		49	10 - 138
2,4-Dinitrotoluene	100	88.36		ug/L		88	47 - 137
2,6-Dichlorophenol	100	96.03		ug/L		96	30 - 130
2,6-Dinitrotoluene	100	100.2		ug/L		100	51 - 130
2-Chloronaphthalene	100	89.99		ug/L		90	37 - 110
2-Chlorophenol	100	89.26		ug/L		89	44 - 117
2-Methylnaphthalene	100	80.10		ug/L		80	33 - 110
2-Methylphenol	100	87.26		ug/L		87	47 - 118
2-Nitroaniline	100	101.7		ug/L		102	50 - 135
2-Nitrophenol	100	105.7		ug/L		106	41 - 129
3-Nitroaniline	100	94.44		ug/L		94	42 - 139
4,6-Dinitro-2-methylphenol	200	162.5		ug/L		81	22 - 143
4-Bromophenyl phenyl ether	100	95.80		ug/L		96	45 - 119
4-Chloro-3-methylphenol	100	93.27		ug/L		93	49 - 130
4-Chloroaniline	100	93.86		ug/L		94	21 - 139
4-Chlorophenyl phenyl ether	100	84.59		ug/L		85	44 - 116
Methylphenol, 3 & 4	100	85.48		ug/L		85	46 - 117
4-Nitroaniline	100	97.23		ug/L		97	31 - 145
4-Nitrophenol	200	113.0		ug/L		56	18 - 110
Acenaphthene	100	98.94		ug/L		99	43 - 110

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 310-422930/2-A
Matrix: Water
Analysis Batch: 423326

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 422930

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Acenaphthylene	100	89.66		ug/L		90	40 - 110
Acetophenone	100	84.23		ug/L		84	48 - 119
Anthracene	100	94.97		ug/L		95	51 - 120
Benzo[a]anthracene	100	95.99		ug/L		96	51 - 123
Benzo[a]pyrene	100	102.4		ug/L		102	48 - 125
Benzo[b]fluoranthene	100	118.5		ug/L		118	49 - 129
Benzo[g,h,i]perylene	100	101.8		ug/L		102	43 - 139
Benzo[k]fluoranthene	100	92.00		ug/L		92	47 - 130
Benzyl alcohol	100	95.15		ug/L		95	39 - 128
Bis(2-chloroethoxy)methane	100	91.76		ug/L		92	48 - 121
Bis(2-chloroethyl)ether	100	85.65		ug/L		86	43 - 123
bis (2-chloroisopropyl) ether	100	78.80		ug/L		79	34 - 123
Bis(2-ethylhexyl) phthalate	100	101.4		ug/L		101	43 - 143
Butyl benzyl phthalate	100	101.7		ug/L		102	46 - 135
Chrysene	100	98.68		ug/L		99	51 - 125
Dibenzo(a,h)anthracene	100	116.3		ug/L		116	38 - 149
Dibenzofuran	100	85.55		ug/L		86	45 - 112
Diethyl phthalate	100	85.44		ug/L		85	43 - 135
Dimethyl phthalate	100	89.61		ug/L		90	43 - 129
Di-n-butyl phthalate	100	98.25		ug/L		98	50 - 133
Di-n-octyl phthalate	100	112.8		ug/L		113	34 - 150
Fluoranthene	100	99.38		ug/L		99	47 - 128
Fluorene	100	92.28		ug/L		92	45 - 119
Hexachlorobenzene	100	97.55		ug/L		98	48 - 119
Hexachlorobutadiene	100	75.18		ug/L		75	32 - 110
Hexachlorocyclopentadiene	100	39.69		ug/L		40	10 - 110
Hexachloroethane	100	65.44		ug/L		65	31 - 110
Indeno[1,2,3-cd]pyrene	100	117.3		ug/L		117	37 - 150
Isophorone	100	93.45		ug/L		93	50 - 125
Nitrobenzene	100	97.41		ug/L		97	47 - 116
N-Nitrosodimethylamine	100	81.30		ug/L		81	37 - 110
N-Nitrosodi-n-propylamine	100	92.89		ug/L		93	45 - 130
N-Nitrosodiphenylamine	100	100.5		ug/L		100	49 - 121
Pentachlorophenol	200	167.1		ug/L		84	26 - 133
Phenanthrene	100	92.46		ug/L		92	51 - 117
Phenol	100	64.68		ug/L		65	29 - 110
Pyrene	100	91.40		ug/L		91	48 - 127

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorophenol (Surr)	*76*		*25 - 110*
Phenol-d5 (Surr)	*59*		*21 - 110*
Nitrobenzene-d5 (Surr)	*99*		*45 - 129*
2-Fluorobiphenyl (Surr)	*86*		*39 - 118*
2,4,6-Tribromophenol (Surr)	*93*		*27 - 136*
Terphenyl-d14 (Surr)	*95*		*12 - 144*

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 310-422930/2-A
Matrix: Water
Analysis Batch: 423476

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 422930

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,3,5-Trinitrobenzene	64.0	58.26		ug/L		91	39 - 144
1,4-Naphthoquinone	64.0	62.32		ug/L		97	37 - 149
1,4-phenylenediamine	64.0	<1.90	*-	ug/L		-1	20 - 120
1-Naphthylamine	64.0	40.86		ug/L		64	19 - 110
2-Acetylaminofluorene	64.0	66.19		ug/L		103	35 - 150
2-Naphthylamine	64.0	47.60		ug/L		74	18 - 127
3,3'-Dimethylbenzidine	64.0	38.89		ug/L		61	10 - 150
3-Methylcholanthrene	64.0	65.19		ug/L		102	43 - 150
4-Aminobiphenyl	64.0	51.74		ug/L		81	24 - 138
5-Nitro-o-toluidine	64.0	66.00		ug/L		103	47 - 145
7,12-Dimethylbenz(a)anthracene	64.0	62.71		ug/L		98	51 - 129
Chlorobenzilate	64.0	61.87		ug/L		97	52 - 138
Diallate	64.0	54.82		ug/L		86	42 - 141
Dimethoate	64.0	79.59		ug/L		124	51 - 150
Dinoseb	64.0	79.32		ug/L		124	25 - 146
Disulfoton	64.0	51.71		ug/L		81	54 - 131
Ethyl methanesulfonate	64.0	52.70		ug/L		82	48 - 120
Ethyl Parathion	64.0	69.44		ug/L		109	52 - 149
Famphur	64.0	151.4	E *+	ug/L		237	44 - 150
Hexachloropropene	64.0	31.22		ug/L		49	10 - 110
Isodrin	64.0	62.48		ug/L		98	52 - 125
Methapyrilene	64.0	13.65		ug/L		21	10 - 110
Methyl methanesulfonate	64.0	37.80		ug/L		59	36 - 110
Methyl parathion	64.0	78.57		ug/L		123	50 - 150
N-Nitrosodiethylamine	64.0	56.89		ug/L		89	47 - 138
N-Nitrosodi-n-butylamine	64.0	63.59		ug/L		99	52 - 142
N-Nitrosomethylethylamine	64.0	55.77		ug/L		87	54 - 123
N-Nitrosopiperidine	64.0	57.60		ug/L		90	60 - 127
N-Nitrosopyrrolidine	64.0	59.59		ug/L		93	56 - 143
o,o',o''-Triethylphosphorothioate	64.0	63.60		ug/L		99	45 - 113
o-Toluidine	64.0	55.02		ug/L		86	24 - 142
p-Dimethylamino azobenzene	64.0	66.46		ug/L		104	42 - 138
Pentachlorobenzene	64.0	51.42		ug/L		80	33 - 110
Pentachloronitrobenzene	64.0	68.17		ug/L		107	65 - 127
Phenacetin	64.0	66.30		ug/L		104	56 - 146
Phorate	64.0	51.04		ug/L		80	57 - 135
Pronamide	64.0	65.20		ug/L		102	61 - 144
Safrole	64.0	59.88		ug/L		94	34 - 110
Thionazin	64.0	64.19		ug/L		100	52 - 147

Lab Sample ID: LCSD 310-422930/3-A
Matrix: Water
Analysis Batch: 423326

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 422930

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2,4,5-Tetrachlorobenzene	100	74.66		ug/L		75	36 - 110	8	35
1,3-Dinitrobenzene	100	87.93		ug/L		88	45 - 138	4	35
2,3,4,6-Tetrachlorophenol	100	88.29		ug/L		88	33 - 134	7	35
2,4,5-Trichlorophenol	100	88.59		ug/L		89	35 - 133	7	35

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 310-422930/3-A
Matrix: Water
Analysis Batch: 423326

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 422930

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,4,6-Trichlorophenol			100	93.80		ug/L		94	28 - 139	9	35
2,4-Dichlorophenol			100	89.72		ug/L		90	41 - 124	7	35
2,4-Dimethylphenol			100	88.39		ug/L		88	31 - 142	7	35
2,4-Dinitrophenol			200	89.93		ug/L		45	10 - 138	8	35
2,4-Dinitrotoluene			100	83.75		ug/L		84	47 - 137	5	35
2,6-Dichlorophenol			100	87.81		ug/L		88	30 - 130	9	35
2,6-Dinitrotoluene			100	91.32		ug/L		91	51 - 130	9	35
2-Chloronaphthalene			100	81.95		ug/L		82	37 - 110	9	35
2-Chlorophenol			100	81.54		ug/L		82	44 - 117	9	35
2-Methylnaphthalene			100	70.84		ug/L		71	33 - 110	12	35
2-Methylphenol			100	81.06		ug/L		81	47 - 118	7	35
2-Nitroaniline			100	96.76		ug/L		97	50 - 135	5	35
2-Nitrophenol			100	98.80		ug/L		99	41 - 129	7	35
3-Nitroaniline			100	92.01		ug/L		92	42 - 139	3	35
4,6-Dinitro-2-methylphenol			200	157.0		ug/L		79	22 - 143	3	35
4-Bromophenyl phenyl ether			100	90.29		ug/L		90	45 - 119	6	35
4-Chloro-3-methylphenol			100	88.22		ug/L		88	49 - 130	6	35
4-Chloroaniline			100	91.95		ug/L		92	21 - 139	2	35
4-Chlorophenyl phenyl ether			100	78.59		ug/L		79	44 - 116	7	35
Methylphenol, 3 & 4			100	80.29		ug/L		80	46 - 117	6	35
4-Nitroaniline			100	95.40		ug/L		95	31 - 145	2	35
4-Nitrophenol			200	109.9		ug/L		55	18 - 110	3	35
Acenaphthene			100	89.51		ug/L		90	43 - 110	10	35
Acenaphthylene			100	79.99		ug/L		80	40 - 110	11	35
Acetophenone			100	76.96		ug/L		77	48 - 119	9	35
Anthracene			100	91.52		ug/L		92	51 - 120	4	35
Benzo[a]anthracene			100	93.92		ug/L		94	51 - 123	2	35
Benzo[a]pyrene			100	97.90		ug/L		98	48 - 125	4	35
Benzo[b]fluoranthene			100	112.4		ug/L		112	49 - 129	5	35
Benzo[g,h,i]perylene			100	98.28		ug/L		98	43 - 139	4	35
Benzo[k]fluoranthene			100	88.45		ug/L		88	47 - 130	4	35
Benzyl alcohol			100	87.80		ug/L		88	39 - 128	8	35
Bis(2-chloroethoxy)methane			100	85.42		ug/L		85	48 - 121	7	35
Bis(2-chloroethyl)ether			100	78.10		ug/L		78	43 - 123	9	35
bis (2-chloroisopropyl) ether			100	71.41		ug/L		71	34 - 123	10	35
Bis(2-ethylhexyl) phthalate			100	95.91		ug/L		96	43 - 143	6	35
Butyl benzyl phthalate			100	96.85		ug/L		97	46 - 135	5	35
Chrysene			100	93.08		ug/L		93	51 - 125	6	35
Dibenzo(a,h)anthracene			100	112.8		ug/L		113	38 - 149	3	35
Dibenzofuran			100	78.61		ug/L		79	45 - 112	8	35
Diethyl phthalate			100	81.13		ug/L		81	43 - 135	5	35
Dimethyl phthalate			100	84.26		ug/L		84	43 - 129	6	35
Di-n-butyl phthalate			100	93.76		ug/L		94	50 - 133	5	35
Di-n-octyl phthalate			100	107.9		ug/L		108	34 - 150	4	35
Fluoranthene			100	99.52		ug/L		100	47 - 128	0	35
Fluorene			100	85.84		ug/L		86	45 - 119	7	35
Hexachlorobenzene			100	90.99		ug/L		91	48 - 119	7	35
Hexachlorobutadiene			100	72.42		ug/L		72	32 - 110	4	35
Hexachlorocyclopentadiene			100	32.78		ug/L		33	10 - 110	19	35

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 310-422930/3-A
Matrix: Water
Analysis Batch: 423326

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 422930

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexachloroethane			100	62.27		ug/L		62	31 - 110	5	35
Indeno[1,2,3-cd]pyrene			100	112.4		ug/L		112	37 - 150	4	35
Isophorone			100	88.39		ug/L		88	50 - 125	6	35
Nitrobenzene			100	89.95		ug/L		90	47 - 116	8	35
N-Nitrosodimethylamine			100	78.07		ug/L		78	37 - 110	4	35
N-Nitrosodi-n-propylamine			100	85.14		ug/L		85	45 - 130	9	35
N-Nitrosodiphenylamine			100	94.00		ug/L		94	49 - 121	7	35
Pentachlorophenol			200	157.5		ug/L		79	26 - 133	6	35
Phenanthrene			100	90.00		ug/L		90	51 - 117	3	35
Phenol			100	61.16		ug/L		61	29 - 110	6	35
Pyrene			100	85.87		ug/L		86	48 - 127	6	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorophenol (Surr)	*73*		*25 - 110*
Phenol-d5 (Surr)	*57*		*21 - 110*
Nitrobenzene-d5 (Surr)	*95*		*45 - 129*
2-Fluorobiphenyl (Surr)	*79*		*39 - 118*
2,4,6-Tribromophenol (Surr)	*92*		*27 - 136*
Terphenyl-d14 (Surr)	*92*		*12 - 144*

Lab Sample ID: LCSD 310-422930/3-A
Matrix: Water
Analysis Batch: 423476

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 422930

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,3,5-Trinitrobenzene			64.0	58.07		ug/L		91	39 - 144	0	35
1,4-Naphthoquinone			64.0	60.82		ug/L		95	37 - 149	2	29
1,4-phenylenediamine			64.0	<1.90	*- *1	ug/L		-0.8	20 - 120	36	35
1-Naphthylamine			64.0	42.67		ug/L		67	19 - 110	4	35
2-Acetylaminofluorene			64.0	61.70		ug/L		96	35 - 150	7	28
2-Naphthylamine			64.0	46.78		ug/L		73	18 - 127	2	35
3,3'-Dimethylbenzidine			64.0	61.08	*1	ug/L		95	10 - 150	44	35
3-Methylcholanthrene			64.0	58.24		ug/L		91	43 - 150	11	32
4-Aminobiphenyl			64.0	50.45		ug/L		79	24 - 138	3	35
5-Nitro-o-toluidine			64.0	62.27		ug/L		97	47 - 145	6	31
7,12-Dimethylbenz(a)anthracene			64.0	58.76		ug/L		92	51 - 129	7	28
Chlorobenzilate			64.0	60.44		ug/L		94	52 - 138	2	28
Diallate			64.0	52.03		ug/L		81	42 - 141	5	35
Dimethoate			64.0	74.87		ug/L		117	51 - 150	6	26
Dinoseb			64.0	78.25		ug/L		122	25 - 146	1	35
Disulfoton			64.0	48.78		ug/L		76	54 - 131	6	24
Ethyl methanesulfonate			64.0	52.04		ug/L		81	48 - 120	1	27
Ethyl Parathion			64.0	65.12		ug/L		102	52 - 149	6	26
Famphur			64.0	128.9	E *+	ug/L		201	44 - 150	16	35
Hexachloropropene			64.0	30.38		ug/L		47	10 - 110	3	35
Isodrin			64.0	61.72		ug/L		96	52 - 125	1	26
Methapyrilene			64.0	33.96	*1	ug/L		53	10 - 110	85	35
Methyl methanesulfonate			64.0	36.19		ug/L		57	36 - 110	4	26

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 310-422930/3-A
Matrix: Water
Analysis Batch: 423476

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 422930

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Methyl parathion	64.0	75.88		ug/L		119	50 - 150	3	25
N-Nitrosodiethylamine	64.0	56.27		ug/L		88	47 - 138	1	26
N-Nitrosodi-n-butylamine	64.0	56.49		ug/L		88	52 - 142	12	27
N-Nitrosomethylethylamine	64.0	51.64		ug/L		81	54 - 123	8	26
N-Nitrosopiperidine	64.0	54.63		ug/L		85	60 - 127	5	26
N-Nitrosopyrrolidine	64.0	59.00		ug/L		92	56 - 143	1	25
o,o',o''-Triethylphosphorothioate	64.0	55.47		ug/L		87	45 - 113	14	33
o-Toluidine	64.0	55.43		ug/L		87	24 - 142	1	35
p-Dimethylamino azobenzene	64.0	62.67		ug/L		98	42 - 138	6	29
Pentachlorobenzene	64.0	47.92		ug/L		75	33 - 110	7	35
Pentachloronitrobenzene	64.0	64.84		ug/L		101	65 - 127	5	29
Phenacetin	64.0	62.66		ug/L		98	56 - 146	6	25
Phorate	64.0	48.47		ug/L		76	57 - 135	5	26
Pronamide	64.0	62.82		ug/L		98	61 - 144	4	27
Safrole	64.0	49.83		ug/L		78	34 - 110	18	35
Thionazin	64.0	61.54		ug/L		96	52 - 147	4	28

Method: 8015C - Nonhalogenated Organic using GC/FID (Direct Aqueous Injection)

Lab Sample ID: MB 310-422817/4
Matrix: Water
Analysis Batch: 422817

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetonitrile	<2600		10000	2600	ug/L			05/28/24 12:59	1
Isobutanol	<2400		10000	2400	ug/L			05/28/24 12:59	1

Lab Sample ID: LCS 310-422817/5
Matrix: Water
Analysis Batch: 422817

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Acetonitrile	113000	107300		ug/L		95	67 - 132
Isobutanol	104000	98140		ug/L		94	80 - 121

Method: 8081B - Organochlorine Pesticides (GC)

Lab Sample ID: MB 310-422933/1-A
Matrix: Water
Analysis Batch: 423446

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 422933

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	<0.0270		0.0640	0.0270	ug/L		05/29/24 07:55	06/04/24 16:36	1
4,4'-DDE	<0.0270		0.0640	0.0270	ug/L		05/29/24 07:55	06/04/24 16:36	1
4,4'-DDT	<0.0420		0.0640	0.0420	ug/L		05/29/24 07:55	06/04/24 16:36	1
Aldrin	<0.0320		0.0640	0.0320	ug/L		05/29/24 07:55	06/04/24 16:36	1
alpha-BHC	<0.0290		0.0640	0.0290	ug/L		05/29/24 07:55	06/04/24 16:36	1
beta-BHC	<0.0370		0.0640	0.0370	ug/L		05/29/24 07:55	06/04/24 16:36	1
Chlordane (technical)	<0.810		2.00	0.810	ug/L		05/29/24 07:55	06/04/24 16:36	1
delta-BHC	<0.0270		0.0640	0.0270	ug/L		05/29/24 07:55	06/04/24 16:36	1

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: MB 310-422933/1-A
Matrix: Water
Analysis Batch: 423446

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 422933

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dieldrin	<0.0260		0.0640	0.0260	ug/L		05/29/24 07:55	06/04/24 16:36	1
Endosulfan I	<0.0330		0.0640	0.0330	ug/L		05/29/24 07:55	06/04/24 16:36	1
Endosulfan II	<0.0290		0.0640	0.0290	ug/L		05/29/24 07:55	06/04/24 16:36	1
Endosulfan sulfate	<0.0300		0.0640	0.0300	ug/L		05/29/24 07:55	06/04/24 16:36	1
Endrin	<0.0260		0.0640	0.0260	ug/L		05/29/24 07:55	06/04/24 16:36	1
Endrin aldehyde	<0.0290		0.0640	0.0290	ug/L		05/29/24 07:55	06/04/24 16:36	1
gamma-BHC (Lindane)	<0.0360		0.0640	0.0360	ug/L		05/29/24 07:55	06/04/24 16:36	1
Heptachlor	<0.0330		0.0640	0.0330	ug/L		05/29/24 07:55	06/04/24 16:36	1
Heptachlor epoxide	<0.0290		0.0640	0.0290	ug/L		05/29/24 07:55	06/04/24 16:36	1
Methoxychlor	<0.0410		0.0640	0.0410	ug/L		05/29/24 07:55	06/04/24 16:36	1
Toxaphene	<0.690		2.00	0.690	ug/L		05/29/24 07:55	06/04/24 16:36	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*81*		*10 - 136*	*05/29/24 07:55*	*06/04/24 16:36*	*1*
Tetrachloro-m-xylene (Surr)	*62*		*10 - 130*	*05/29/24 07:55*	*06/04/24 16:36*	*1*

Lab Sample ID: LCS 310-422933/2-A
Matrix: Water
Analysis Batch: 423446

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 422933

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
4,4'-DDD	1.00	0.9852		ug/L		99	36 - 149
4,4'-DDE	1.00	0.9159		ug/L		92	34 - 130
4,4'-DDT	1.00	1.076		ug/L		108	23 - 150
Aldrin	1.00	0.6097		ug/L		61	13 - 120
alpha-BHC	1.00	0.9943		ug/L		99	36 - 127
beta-BHC	1.00	1.016		ug/L		102	37 - 136
delta-BHC	1.00	1.005		ug/L		101	33 - 134
Dieldrin	1.00	1.009		ug/L		101	39 - 130
Endosulfan I	1.00	0.9430		ug/L		94	10 - 120
Endosulfan II	1.00	0.9579		ug/L		96	14 - 120
Endosulfan sulfate	1.00	1.036		ug/L		104	36 - 147
Endrin	1.00	1.027		ug/L		103	39 - 140
Endrin aldehyde	1.00	0.9107		ug/L		91	32 - 137
gamma-BHC (Lindane)	1.00	1.006		ug/L		101	36 - 132
Heptachlor	1.00	0.7881		ug/L		79	27 - 120
Heptachlor epoxide	1.00	1.006		ug/L		101	38 - 133
Methoxychlor	1.00	1.012		ug/L		101	10 - 150

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl (Surr)	*75*		*10 - 136*
Tetrachloro-m-xylene (Surr)	*67*		*10 - 130*

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: LCSD 310-422933/3-A
Matrix: Water
Analysis Batch: 423446

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 422933

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
4,4'-DDD			1.00	0.9680		ug/L		97	36 - 149	2	35
4,4'-DDE			1.00	0.8649		ug/L		86	34 - 130	6	35
4,4'-DDT			1.00	1.057		ug/L		106	23 - 150	2	35
Aldrin			1.00	0.5218		ug/L		52	13 - 120	16	35
alpha-BHC			1.00	0.9258		ug/L		93	36 - 127	7	35
beta-BHC			1.00	0.9711		ug/L		97	37 - 136	5	35
delta-BHC			1.00	0.9708		ug/L		97	33 - 134	3	35
Dieldrin			1.00	0.9818		ug/L		98	39 - 130	3	35
Endosulfan I			1.00	0.9096	p	ug/L		91	10 - 120	1	35
Endosulfan II			1.00	0.9414		ug/L		94	14 - 120	2	35
Endosulfan sulfate			1.00	1.021		ug/L		102	36 - 147	1	35
Endrin			1.00	1.001		ug/L		100	39 - 140	3	35
Endrin aldehyde			1.00	0.8859		ug/L		89	32 - 137	3	35
gamma-BHC (Lindane)			1.00	0.9438		ug/L		94	36 - 132	6	35
Heptachlor			1.00	0.6967		ug/L		70	27 - 120	12	35
Heptachlor epoxide			1.00	0.9677		ug/L		97	38 - 133	4	35
Methoxychlor			1.00	1.010		ug/L		101	10 - 150	0	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
DCB Decachlorobiphenyl (Surr)	*73*		*10 - 136*
Tetrachloro-m-xylene (Surr)	*54*		*10 - 130*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 310-422933/1-A
Matrix: Water
Analysis Batch: 423447

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 422933

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.170		0.800	0.170	ug/L		05/29/24 07:55	06/04/24 16:36	1
PCB-1221	<0.170		0.800	0.170	ug/L		05/29/24 07:55	06/04/24 16:36	1
PCB-1232	<0.170		0.800	0.170	ug/L		05/29/24 07:55	06/04/24 16:36	1
PCB-1242	<0.170		0.800	0.170	ug/L		05/29/24 07:55	06/04/24 16:36	1
PCB-1248	<0.110		0.800	0.110	ug/L		05/29/24 07:55	06/04/24 16:36	1
PCB-1254	<0.110		0.800	0.110	ug/L		05/29/24 07:55	06/04/24 16:36	1
PCB-1260	<0.110		0.800	0.110	ug/L		05/29/24 07:55	06/04/24 16:36	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*81*		*10 - 136*	*05/29/24 07:55*	*06/04/24 16:36*	*1*
Tetrachloro-m-xylene (Surr)	*62*		*10 - 130*	*05/29/24 07:55*	*06/04/24 16:36*	*1*

Lab Sample ID: LCS 310-422933/4-A
Matrix: Water
Analysis Batch: 423447

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 422933

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
PCB-1016			10.0	8.573		ug/L		86	30 - 133		
PCB-1260			10.0	9.241		ug/L		92	31 - 133		

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Lab Sample ID: LCS 310-422933/4-A
Matrix: Water
Analysis Batch: 423447

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 422933

Surrogate	LCS %Recovery	LCS Qualifier	Limits
DCB Decachlorobiphenyl (Surr)	81		10 - 136
Tetrachloro-m-xylene (Surr)	62		10 - 130

Lab Sample ID: LCSD 310-422933/5-A
Matrix: Water
Analysis Batch: 423447

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 422933

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
PCB-1260			10.0	7.914		ug/L		79	31 - 133	15	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
DCB Decachlorobiphenyl (Surr)	68		10 - 136
Tetrachloro-m-xylene (Surr)	44		10 - 130

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-422763/1-A
Matrix: Water
Analysis Batch: 423330

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 422763

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		05/28/24 09:00	05/31/24 18:23	1
Arsenic	<0.530		2.00	0.530	ug/L		05/28/24 09:00	05/31/24 18:23	1
Barium	<0.660		2.00	0.660	ug/L		05/28/24 09:00	05/31/24 18:23	1
Beryllium	<0.330		1.00	0.330	ug/L		05/28/24 09:00	05/31/24 18:23	1
Cadmium	<0.100		0.200	0.100	ug/L		05/28/24 09:00	05/31/24 18:23	1
Lead	<0.260		0.500	0.260	ug/L		05/28/24 09:00	05/31/24 18:23	1
Thallium	<0.570		1.00	0.570	ug/L		05/28/24 09:00	05/31/24 18:23	1

Lab Sample ID: MB 310-422763/1-A
Matrix: Water
Analysis Batch: 423570

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 422763

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.530		2.00	0.530	ug/L		05/28/24 09:00	06/04/24 17:16	1
Chromium	<1.20		5.00	1.20	ug/L		05/28/24 09:00	06/04/24 17:16	1
Cobalt	<0.170		0.500	0.170	ug/L		05/28/24 09:00	06/04/24 17:16	1
Copper	<1.80		5.00	1.80	ug/L		05/28/24 09:00	06/04/24 17:16	1
Nickel	<2.10		5.00	2.10	ug/L		05/28/24 09:00	06/04/24 17:16	1
Selenium	<1.40		5.00	1.40	ug/L		05/28/24 09:00	06/04/24 17:16	1
Silver	<0.500	^3+ ^1+	1.00	0.500	ug/L		05/28/24 09:00	06/04/24 17:16	1
Vanadium	<1.10		5.00	1.10	ug/L		05/28/24 09:00	06/04/24 17:16	1
Zinc	<9.70		20.0	9.70	ug/L		05/28/24 09:00	06/04/24 17:16	1
Tin	<2.30		5.00	2.30	ug/L		05/28/24 09:00	06/04/24 17:16	1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 310-422763/2-A
Matrix: Water
Analysis Batch: 423330

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 422763

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	200	207.2		ug/L		104	80 - 120
Arsenic	200	216.4		ug/L		108	80 - 120
Barium	100	105.3		ug/L		105	80 - 120
Beryllium	100	95.99		ug/L		96	80 - 120
Cadmium	100	91.87		ug/L		92	80 - 120
Lead	200	203.7		ug/L		102	80 - 120
Nickel	200	204.6		ug/L		102	80 - 120
Thallium	100	92.55		ug/L		93	80 - 120
Tin	200	187.6		ug/L		94	80 - 120

Lab Sample ID: LCS 310-422763/2-A
Matrix: Water
Analysis Batch: 423570

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 422763

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	200	218.1		ug/L		109	80 - 120
Chromium	100	104.0		ug/L		104	80 - 120
Cobalt	100	105.7		ug/L		106	80 - 120
Copper	200	207.6		ug/L		104	80 - 120
Selenium	400	380.8		ug/L		95	80 - 120
Silver	100	146.0	^3+ *+ ^1+	ug/L		146	80 - 120
Vanadium	100	102.0		ug/L		102	80 - 120
Zinc	200	198.0		ug/L		99	80 - 120

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 310-422881/1-A
Matrix: Water
Analysis Batch: 423023

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 422881

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.110		0.200	0.110	ug/L		05/28/24 13:59	05/29/24 14:52	1

Lab Sample ID: LCS 310-422881/2-A
Matrix: Water
Analysis Batch: 423023

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 422881

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	1.67	1.538		ug/L		92	80 - 120

Method: 9012B - Cyanide, Total andor Amenable

Lab Sample ID: MB 310-423077/1-A
Matrix: Water
Analysis Batch: 423153

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 423077

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	<3.50		10.0	3.50	ug/L		05/30/24 09:42	05/30/24 16:57	1

Method: 9012B - Cyanide, Total andor Amenable (Continued)

Lab Sample ID: LCS 310-423077/2-A
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 423153
Prep Batch: 423077

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	200	192.0		ug/L		96	90 - 110

Method: 9034 - Sulfide, Acid soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 240-614846/1-A
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 614874
Prep Batch: 614846

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.41		3.00	1.41	mg/L		05/30/24 07:53	05/30/24 09:40	1

Lab Sample ID: LCS 240-614846/2-A
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 614874
Prep Batch: 614846

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfide	8.67	9.067		mg/L		105	70 - 120

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: MB 310-422958/1
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 422958

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<3.70		5.00	3.70	mg/L			05/29/24 09:32	1

Lab Sample ID: LCS 310-422958/2
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 422958

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	104.0		mg/L		104	81 - 116

Lab Sample ID: MB 310-422966/1
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 422966

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<3.70		5.00	3.70	mg/L			05/29/24 10:13	1

Lab Sample ID: LCS 310-422966/2
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 422966

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	96.00		mg/L		96	81 - 116

GC/MS VOA

Analysis Batch: 422854

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282049-2	Trip Blank	Total/NA	Water	8260D	
310-282049-3	OW-226B	Total/NA	Water	8260D	
310-282049-4	OW-227B	Total/NA	Water	8260D	
MB 310-422854/5	Method Blank	Total/NA	Water	8260D	
LCS 310-422854/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-422854/7	Lab Control Sample	Total/NA	Water	8260D	

Analysis Batch: 422943

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282049-8	P-213C	Total/NA	Water	8260D	
310-282049-9	P-214CR	Total/NA	Water	8260D	
MB 310-422943/5	Method Blank	Total/NA	Water	8260D	
LCS 310-422943/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-422943/7	Lab Control Sample	Total/NA	Water	8260D	

Analysis Batch: 423506

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282049-5	Equipment Blank 3	Total/NA	Water	8260D	
310-282049-6	OW-113B	Total/NA	Water	8260D	
310-282049-7	Duplicate 5	Total/NA	Water	8260D	
MB 310-423506/5	Method Blank	Total/NA	Water	8260D	
LCS 310-423506/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-423506/7	Lab Control Sample	Total/NA	Water	8260D	
310-282049-6 MS	OW-113B	Total/NA	Water	8260D	
310-282049-6 MSD	OW-113B	Total/NA	Water	8260D	

GC/MS Semi VOA

Prep Batch: 422930

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282049-8	P-213C	Total/NA	Water	3510C	
MB 310-422930/1-A	Method Blank	Total/NA	Water	3510C	
LCS 310-422930/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 310-422930/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 423326

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282049-8	P-213C	Total/NA	Water	8270E	422930
MB 310-422930/1-A	Method Blank	Total/NA	Water	8270E	422930
LCS 310-422930/2-A	Lab Control Sample	Total/NA	Water	8270E	422930
LCSD 310-422930/3-A	Lab Control Sample Dup	Total/NA	Water	8270E	422930

Analysis Batch: 423476

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282049-8	P-213C	Total/NA	Water	8270E	422930
MB 310-422930/1-A	Method Blank	Total/NA	Water	8270E	422930
LCS 310-422930/2-A	Lab Control Sample	Total/NA	Water	8270E	422930
LCSD 310-422930/3-A	Lab Control Sample Dup	Total/NA	Water	8270E	422930

GC Semi VOA

Analysis Batch: 422817

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282049-8	P-213C	Total/NA	Water	8015C	
MB 310-422817/4	Method Blank	Total/NA	Water	8015C	
LCS 310-422817/5	Lab Control Sample	Total/NA	Water	8015C	

Prep Batch: 422933

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282049-8	P-213C	Total/NA	Water	3510C	
MB 310-422933/1-A	Method Blank	Total/NA	Water	3510C	
LCS 310-422933/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCS 310-422933/4-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 310-422933/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	
LCSD 310-422933/5-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 423446

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282049-8	P-213C	Total/NA	Water	8081B	422933
MB 310-422933/1-A	Method Blank	Total/NA	Water	8081B	422933
LCS 310-422933/2-A	Lab Control Sample	Total/NA	Water	8081B	422933
LCSD 310-422933/3-A	Lab Control Sample Dup	Total/NA	Water	8081B	422933

Analysis Batch: 423447

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282049-8	P-213C	Total/NA	Water	8082A	422933
MB 310-422933/1-A	Method Blank	Total/NA	Water	8082A	422933
LCS 310-422933/4-A	Lab Control Sample	Total/NA	Water	8082A	422933
LCSD 310-422933/5-A	Lab Control Sample Dup	Total/NA	Water	8082A	422933

Metals

Prep Batch: 422763

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282049-3	OW-226B	Total/NA	Water	3005A	
310-282049-4	OW-227B	Total/NA	Water	3005A	
310-282049-5	Equipment Blank 3	Total/NA	Water	3005A	
310-282049-6	OW-113B	Total/NA	Water	3005A	
310-282049-7	Duplicate 5	Total/NA	Water	3005A	
310-282049-8	P-213C	Total/NA	Water	3005A	
310-282049-9	P-214CR	Total/NA	Water	3005A	
MB 310-422763/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-422763/2-A	Lab Control Sample	Total/NA	Water	3005A	

Prep Batch: 422881

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282049-8	P-213C	Total/NA	Water	7470A	
MB 310-422881/1-A	Method Blank	Total/NA	Water	7470A	
LCS 310-422881/2-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 423023

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282049-8	P-213C	Total/NA	Water	7470A	422881
MB 310-422881/1-A	Method Blank	Total/NA	Water	7470A	422881

Metals (Continued)

Analysis Batch: 423023 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 310-422881/2-A	Lab Control Sample	Total/NA	Water	7470A	422881

Analysis Batch: 423330

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282049-3	OW-226B	Total/NA	Water	6020B	422763
310-282049-4	OW-227B	Total/NA	Water	6020B	422763
310-282049-5	Equipment Blank 3	Total/NA	Water	6020B	422763
310-282049-6	OW-113B	Total/NA	Water	6020B	422763
310-282049-7	Duplicate 5	Total/NA	Water	6020B	422763
310-282049-8	P-213C	Total/NA	Water	6020B	422763
310-282049-9	P-214CR	Total/NA	Water	6020B	422763
MB 310-422763/1-A	Method Blank	Total/NA	Water	6020B	422763
LCS 310-422763/2-A	Lab Control Sample	Total/NA	Water	6020B	422763

Analysis Batch: 423570

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282049-3	OW-226B	Total/NA	Water	6020B	422763
310-282049-4	OW-227B	Total/NA	Water	6020B	422763
310-282049-5	Equipment Blank 3	Total/NA	Water	6020B	422763
310-282049-6	OW-113B	Total/NA	Water	6020B	422763
310-282049-7	Duplicate 5	Total/NA	Water	6020B	422763
310-282049-8	P-213C	Total/NA	Water	6020B	422763
310-282049-9	P-214CR	Total/NA	Water	6020B	422763
MB 310-422763/1-A	Method Blank	Total/NA	Water	6020B	422763
LCS 310-422763/2-A	Lab Control Sample	Total/NA	Water	6020B	422763

General Chemistry

Analysis Batch: 422958

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282049-5	Equipment Blank 3	Total/NA	Water	I-3765-85	
MB 310-422958/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-422958/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Analysis Batch: 422966

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282049-3	OW-226B	Total/NA	Water	I-3765-85	
310-282049-4	OW-227B	Total/NA	Water	I-3765-85	
310-282049-6	OW-113B	Total/NA	Water	I-3765-85	
310-282049-7	Duplicate 5	Total/NA	Water	I-3765-85	
310-282049-8	P-213C	Total/NA	Water	I-3765-85	
310-282049-9	P-214CR	Total/NA	Water	I-3765-85	
MB 310-422966/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-422966/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Prep Batch: 423077

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282049-8	P-213C	Total/NA	Water	9012B	
MB 310-423077/1-A	Method Blank	Total/NA	Water	9012B	
LCS 310-423077/2-A	Lab Control Sample	Total/NA	Water	9012B	

QC Association Summary

Client: AECOM
Job ID: 310-282049-1
Project/Site: Black Hawk County Landfill (IDNR)

General Chemistry

Analysis Batch: 423153

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282049-8	P-213C	Total/NA	Water	9012B	423077
MB 310-423077/1-A	Method Blank	Total/NA	Water	9012B	423077
LCS 310-423077/2-A	Lab Control Sample	Total/NA	Water	9012B	423077

Prep Batch: 614846

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282049-3	OW-226B	Total/NA	Water	9030B	
310-282049-4	OW-227B	Total/NA	Water	9030B	
310-282049-6	OW-113B	Total/NA	Water	9030B	
310-282049-8	P-213C	Total/NA	Water	9030B	
MB 240-614846/1-A	Method Blank	Total/NA	Water	9030B	
LCS 240-614846/2-A	Lab Control Sample	Total/NA	Water	9030B	

Analysis Batch: 614874

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282049-3	OW-226B	Total/NA	Water	9034	614846
310-282049-4	OW-227B	Total/NA	Water	9034	614846
310-282049-6	OW-113B	Total/NA	Water	9034	614846
310-282049-8	P-213C	Total/NA	Water	9034	614846
MB 240-614846/1-A	Method Blank	Total/NA	Water	9034	614846
LCS 240-614846/2-A	Lab Control Sample	Total/NA	Water	9034	614846

Field Service / Mobile Lab

Analysis Batch: 423239

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282049-3	OW-226B	Total/NA	Water	Field Sampling	
310-282049-4	OW-227B	Total/NA	Water	Field Sampling	
310-282049-6	OW-113B	Total/NA	Water	Field Sampling	
310-282049-8	P-213C	Total/NA	Water	Field Sampling	
310-282049-9	P-214CR	Total/NA	Water	Field Sampling	

Client Sample ID: Trip Blank
Lab Sample ID: 310-282049-2

Date Collected: 05/23/24 05:00
Matrix: Water
Date Received: 05/24/24 11:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	422854	FE5V	EET CF	05/29/24 11:58

Client Sample ID: OW-226B
Lab Sample ID: 310-282049-3

Date Collected: 05/23/24 15:30
Matrix: Water
Date Received: 05/24/24 11:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	422854	FE5V	EET CF	05/29/24 16:53
Total/NA	Prep	3005A			422763	KM3E	EET CF	05/28/24 09:00
Total/NA	Analysis	6020B		1	423330	NFT2	EET CF	05/31/24 19:56
Total/NA	Prep	3005A			422763	KM3E	EET CF	05/28/24 09:00
Total/NA	Analysis	6020B		1	423570	NFT2	EET CF	06/04/24 19:58
Total/NA	Prep	9030B			614846	BLW	EET CLE	05/30/24 07:53
Total/NA	Analysis	9034		1	614874	BLW	EET CLE	05/30/24 09:40
Total/NA	Analysis	I-3765-85		1	422966	HE7K	EET CF	05/29/24 10:13
Total/NA	Analysis	Field Sampling		1	423239	BJ0R	EET CF	05/23/24 15:30

Client Sample ID: OW-227B
Lab Sample ID: 310-282049-4

Date Collected: 05/23/24 17:00
Matrix: Water
Date Received: 05/24/24 11:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	422854	FE5V	EET CF	05/29/24 17:16
Total/NA	Prep	3005A			422763	KM3E	EET CF	05/28/24 09:00
Total/NA	Analysis	6020B		1	423330	NFT2	EET CF	05/31/24 20:00
Total/NA	Prep	3005A			422763	KM3E	EET CF	05/28/24 09:00
Total/NA	Analysis	6020B		1	423570	NFT2	EET CF	06/04/24 20:02
Total/NA	Prep	9030B			614846	BLW	EET CLE	05/30/24 07:53
Total/NA	Analysis	9034		1	614874	BLW	EET CLE	05/30/24 09:40
Total/NA	Analysis	I-3765-85		1	422966	HE7K	EET CF	05/29/24 10:13
Total/NA	Analysis	Field Sampling		1	423239	BJ0R	EET CF	05/23/24 17:00

Client Sample ID: Equipment Blank 3
Lab Sample ID: 310-282049-5

Date Collected: 05/23/24 17:00
Matrix: Water
Date Received: 05/24/24 11:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	423506	FE5V	EET CF	06/04/24 15:50
Total/NA	Prep	3005A			422763	KM3E	EET CF	05/28/24 09:00
Total/NA	Analysis	6020B		1	423330	NFT2	EET CF	05/31/24 20:03
Total/NA	Prep	3005A			422763	KM3E	EET CF	05/28/24 09:00
Total/NA	Analysis	6020B		1	423570	NFT2	EET CF	06/04/24 20:05
Total/NA	Analysis	I-3765-85		1	422958	HE7K	EET CF	05/29/24 09:32

Lab Chronicle

Client: AECOM
Job ID: 310-282049-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-113B
Lab Sample ID: 310-282049-6

Date Collected: 05/23/24 14:15
Matrix: Water
Date Received: 05/24/24 11:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	423506	FE5V	EET CF	06/04/24 16:12
Total/NA	Prep	3005A			422763	KM3E	EET CF	05/28/24 09:00
Total/NA	Analysis	6020B		1	423330	NFT2	EET CF	05/31/24 20:07
Total/NA	Prep	3005A			422763	KM3E	EET CF	05/28/24 09:00
Total/NA	Analysis	6020B		1	423570	NFT2	EET CF	06/04/24 20:09
Total/NA	Prep	9030B			614846	BLW	EET CLE	05/30/24 07:53
Total/NA	Analysis	9034		1	614874	BLW	EET CLE	05/30/24 09:40
Total/NA	Analysis	I-3765-85		1	422966	HE7K	EET CF	05/29/24 10:13
Total/NA	Analysis	Field Sampling		1	423239	BJ0R	EET CF	05/23/24 14:15

Client Sample ID: Duplicate 5
Lab Sample ID: 310-282049-7

Date Collected: 05/23/24 00:00
Matrix: Water
Date Received: 05/24/24 11:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	423506	FE5V	EET CF	06/04/24 16:35
Total/NA	Prep	3005A			422763	KM3E	EET CF	05/28/24 09:00
Total/NA	Analysis	6020B		1	423330	NFT2	EET CF	05/31/24 20:10
Total/NA	Prep	3005A			422763	KM3E	EET CF	05/28/24 09:00
Total/NA	Analysis	6020B		1	423570	NFT2	EET CF	06/04/24 20:13
Total/NA	Analysis	I-3765-85		1	422966	HE7K	EET CF	05/29/24 10:13

Client Sample ID: P-213C
Lab Sample ID: 310-282049-8

Date Collected: 05/23/24 10:30
Matrix: Water
Date Received: 05/24/24 11:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	422943	WSE8	EET CF	05/29/24 19:30
Total/NA	Prep	3510C			422930	JT8P	EET CF	05/29/24 07:35
Total/NA	Analysis	8270E		1	423476	L0FS	EET CF	06/04/24 16:39
Total/NA	Prep	3510C			422930	JT8P	EET CF	05/29/24 07:35
Total/NA	Analysis	8270E		1	423326	L0FS	EET CF	06/03/24 22:25
Total/NA	Analysis	8015C		1	422817	V7YZ	EET CF	05/28/24 17:12
Total/NA	Prep	3510C			422933	JT8P	EET CF	05/29/24 07:55
Total/NA	Analysis	8081B		1	423446	BW2O	EET CF	06/04/24 18:30
Total/NA	Prep	3510C			422933	JT8P	EET CF	05/29/24 07:55
Total/NA	Analysis	8082A		1	423447	BW2O	EET CF	06/04/24 18:30
Total/NA	Prep	3005A			422763	KM3E	EET CF	05/28/24 09:00
Total/NA	Analysis	6020B		1	423330	NFT2	EET CF	05/31/24 20:14
Total/NA	Prep	3005A			422763	KM3E	EET CF	05/28/24 09:00
Total/NA	Analysis	6020B		1	423570	NFT2	EET CF	06/04/24 20:16
Total/NA	Prep	7470A			422881	A6US	EET CF	05/28/24 13:59
Total/NA	Analysis	7470A		1	423023	A6US	EET CF	05/29/24 15:08

Lab Chronicle

Client: AECOM
Job ID: 310-282049-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: P-213C
Lab Sample ID: 310-282049-8
Date Collected: 05/23/24 10:30
Matrix: Water
Date Received: 05/24/24 11:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	9012B			423077	WZC8	EET CF	05/30/24 09:42
Total/NA	Analysis	9012B		1	423153	ZJX4	EET CF	05/30/24 17:15
Total/NA	Prep	9030B			614846	BLW	EET CLE	05/30/24 07:53
Total/NA	Analysis	9034		1	614874	BLW	EET CLE	05/30/24 09:40
Total/NA	Analysis	I-3765-85		1	422966	HE7K	EET CF	05/29/24 10:13
Total/NA	Analysis	Field Sampling		1	423239	BJ0R	EET CF	05/23/24 10:30

Client Sample ID: P-214CR
Lab Sample ID: 310-282049-9
Date Collected: 05/23/24 13:30
Matrix: Water
Date Received: 05/24/24 11:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	422943	WSE8	EET CF	05/29/24 19:52
Total/NA	Prep	3005A			422763	KM3E	EET CF	05/28/24 09:00
Total/NA	Analysis	6020B		1	423330	NFT2	EET CF	05/31/24 20:32
Total/NA	Prep	3005A			422763	KM3E	EET CF	05/28/24 09:00
Total/NA	Analysis	6020B		1	423570	NFT2	EET CF	06/04/24 20:34
Total/NA	Analysis	I-3765-85		1	422966	HE7K	EET CF	05/29/24 10:13
Total/NA	Analysis	Field Sampling		1	423239	BJ0R	EET CF	05/23/24 13:30

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Accreditation/Certification Summary

Client: AECOM
Job ID: 310-282049-1
Project/Site: Black Hawk County Landfill (IDNR)

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8260D		Water	1,2,4-Trichlorobenzene
8260D		Water	Allyl chloride
8260D		Water	Ethyl methacrylate
8260D		Water	m,p-Xylene
8260D		Water	o-Xylene
Field Sampling		Water	Field Turbidity

Laboratory: Eurofins Cleveland

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-28-25
Georgia	State	4062	02-27-25
Illinois	NELAP	200004	07-31-24
Iowa	State	421	06-01-25
Kentucky (UST)	State	112225	02-27-25
Kentucky (WW)	State	KY98016	12-30-24
Minnesota	NELAP	039-999-348	12-31-24
New Jersey	NELAP	OH001	06-30-24
New York	NELAP	10975	04-02-25
Ohio VAP	State	ORELAP 4062	02-27-25
Oregon	NELAP	4062	02-27-25
Pennsylvania	NELAP	68-00340	08-31-24
Texas	NELAP	T104704517-22-19	08-31-24
USDA	US Federal Programs	P330-18-00281	01-05-27
Virginia	NELAP	460175	09-14-24
West Virginia DEP	State	210	12-31-24

Method Summary

Client: AECOM
Job ID: 310-282049-1
Project/Site: Black Hawk County Landfill (IDNR)

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CF
8270E	Semivolatile Organic Compounds (GC/MS)	SW846	EET CF
8015C	Nonhalogenated Organic using GC/FID (Direct Aqueous Injection)	SW846	EET CF
8081B	Organochlorine Pesticides (GC)	SW846	EET CF
8082A	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
7470A	Mercury (CVAA)	SW846	EET CF
9012B	Cyanide, Total andor Amenable	SW846	EET CF
9034	Sulfide, Acid soluble and Insoluble (Titrimetric)	SW846	EET CLE
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
Field Sampling	Field Sampling	EPA	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET CF
5030B	Purge and Trap	SW846	EET CF
7470A	Preparation, Mercury	SW846	EET CF
9012B	Cyanide, Total and/or Amenable, Distillation	SW846	EET CF
9030B	Sulfide, Distillation (Acid Soluble and Insoluble)	SW846	EET CLE

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

eurofins | Environment Testing America

310-282049 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: AECOM

City/State: CITY | STATE TX | Project:

Receipt Information

Date/Time Received: DATE 5/24/24 | TIME 0910 | Received By:

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ Lab Field Services ☒ Client Drop-off ☐ Other:

Condition of Cooler/Containers

Sample(s) received in Cooler? ☒ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☒ Yes ☐ No *If yes:* Cooler # 1 of 2

Cooler Custody Seals Present? ☐ Yes ☒ No *If yes:* Cooler custody seals intact? ☐ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☒ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☒ Yes ☐ No *If yes:* Which VOA samples are in cooler? ↓

ALL

Temperature Record

Coolant: ☒ Wet Ice ☐ Blue Ice ☐ Dry Ice ☐ Other: ☐ NONE

Thermometer ID: R | Correction Factor (°C): +0.0

Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): | Corrected Temp (°C):

Sample Container Temperature

	CONTAINER 1	CONTAINER 2
Container(s) used:	PLANT	
Uncorrected Temp (°C):	3.1	
Corrected Temp (°C):	3.1	

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE If yes, contact PM before proceeding If no, proceed with login

Additional Comments

rcvd Sample Dup #4 not 5

eurofins | Environment Testing America

Place COC scanning label here

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: AECOM

City/State: CITY | STATE IA | Project:

Receipt Information

Date/Time Received: DATE 5/24/24 | TIME 1120 | Received By: N

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ Lab Field Services ☒ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☒ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☒ Yes ☐ No *If yes:* Cooler # 2 of 2

Cooler Custody Seals Present? ☐ Yes ☒ No *If yes:* Cooler custody seals intact? ☐ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☒ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☐ Yes ☐ No *If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☒ Wet Ice ☐ Blue Ice ☐ Dry Ice ☐ Other:_____ ☐ NONE

Thermometer ID: R | Correction Factor (°C): +0.0

Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 3.6 | Corrected Temp (°C): 3.6

Sample Container Temperature

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

Eurofins Cedar Falls
3019 Venture Way

Cedar Falls, IA 50613
phone 319.277.2401 fax 319 277.2425

Chain of Custody Record

eurofins Environment Testing America

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other IDNR

Eurofins Environment Testing America

Client Contact	**Project Manager: Chris Oelkers**	COC No
AECOM	Email Christopher Oelkers@aecom com	Site Contact: / Date: 5-24-24	1 of 4 COCs
501 Sycamore Street, Suite 222	Tel/Fax:319-296-6878	Lab Contact: / Carrier:	TALS Project #
Waterloo, IA 50703	**Analysis Turnaround Time**		Sampler
(319) 232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS		**For Lab Use Only:**
(xxx) xxx-xxxx FAX	TAT if different from Below ____		Walk-in Client
Project Name Black Hawk Co IDNR	☑ 2 weeks		Lab Sampling
Site Black Hawk County Landfill	☐ 1 week		
P O #	☐ 2 days		Job / SDG No
	☐ 1 day		

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	Appendix I, TSS	Appendix II, TSS	2,4-D	4,4'-DDD	beta-BHC	delta BHC	Endosulfan I	Endosulfan sulfate	Endrin aldehyde	Silvex	Sulfide	HERBICIDES	Sample Specific Notes
OW-401B	5-23-24	1800	G	GW	2	N		X		X		X	X		X	X	X	X	X	Resample
OW-402B			G	GW		N		X												
MW-409B			G	GW		N		X												
OW-410B			G	GW		N		X												
OW-411B			G	GW		N		X												
OW-412B			G	GW		N		X												
OW-413B			G	GW		N		X												
OW-414B			G	GW		N		X												
MW-501B			G	GW		N		X												
MW-602B			G	GW		N		X												
MW-602B-FD			G	GW		N		X												
Trip Blank	5-23-24	0500	G	W	2	N		X												

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for ____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No | Cooler Temp (°C) Obs'd. ____ Corr'd ____ | Therm ID No. ____

Relinquished by: Ben Porter	Company: Aecom	Date/Time: 5-24-24	Received by:	Company:	Date/Time: 5-24-24 1120
Relinquished by:	Company:	Date/Time	Received by:	Company:	Date/Time
Relinquished by:	Company:	Date/Time	Received in Laboratory by:	Company:	Date/Time

Eurofins Cedar Falls
3019 Venture Way

Cedar Falls, IA 50613
phone 319 277.2401 fax 319.277.2425

Chain of Custody Record

eurofins Environment Testing America

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other IDNR

Eurofins Environment Testing America

Client Contact	Project Manager: Chris Oelkers	Site Contact:	Date: 5-24-24	COC No
AECOM	Email Christopher Oelkers@aecom.com			2 of 4 COCs
501 Sycamore Street, Suite 222	Tel/Fax:319-296-6878	Lab Contact:	Carrier:	TALS Project #
Waterloo, IA 50703	Analysis Turnaround Time			Sampler
(319) 232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(xxx) xxx-xxxx FAX	TAT if different from Below ____			Walk-in Client
Project Name Black Hawk Co IDNR	☑ 2 weeks			Lab Sampling
Site Black Hawk County Landfill	☐ 1 week			
P O #	☐ 2 days			Job / SDG No
	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	Appendix I, TSS	Appendix II, TSS	2,4-D	4,4'-DDD	beta-BHC	delta BHC	Endosulfan I	Endosulfan sulfate	Endrin aldehyde	Silvex	Sulfide							Sample Specific Notes
OW-220B			G	GW		N		X		X							X								
OW-221B			G	GW		N		X																	
OW-222B			G	GW		N		X																	
OW-223B			G	GW		N		X																	
OW-224B			G	GW		N		X																	
OW-225B			G	GW		N		X																	
OW-226B	5-23-24	1530	G	GW	6	N		X										X							Turbidity - 24.86 NTU
OW-227B	5-23-24	1700	G	GW	6	N		X										X							Turbidity - 9.52 NTU
MW-319B			G	GW		N		X																	
MW-320B			G	GW		N		X																	
Equipment Blank-3	5-23-24	1700	G	GW	5	N		X																	
MW-319B-FD			G	GW		N		X																	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No | Cooler Temp (°C) Obs'd.____ Corr'd.____ | Therm ID No.____

Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Ben Porter	Aecom	5-24-24			1120
Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Relinquished by	Company	Date/Time	Received in Laboratory by	Company	Date/Time

6/10/2024

Eurofins Cedar Falls
3019 Venture Way

Cedar Falls, IA 50613
phone 319.277 2401 fax 319.277 2425

Chain of Custody Record

eurofins Environment Testing America

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other IDNR

Eurofins Environment Testing America

Client Contact	Project Manager: Chris Oelkers	Site Contact:	Date: 5-24-24	COC No
AECOM	Email Christopher Oelkers@aecom com	Lab Contact:	Carrier:	3 of 4 COCs
501 Sycamore Street, Suite 222	Tel/Fax:319-296-6878			TALS Project #
Waterloo, IA 50703	**Analysis Turnaround Time**			Sampler
(319) 232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS			**For Lab Use Only:**
(xxx) xxx-xxxx FAX	TAT if different from Below _____			Walk-in Client:
Project Name Black Hawk Co IDNR	☑ 2 weeks			Lab Sampling
Site Black Hawk County Landfill	☐ 1 week			Job / SDG No
P O #	☐ 2 days			
	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Appendix I, TSS	Appendix II, TSS	2,4-D	4,4'-DDD	beta-BHC	delta BHC	Endosulfan I	Endosulfan sulfate	Endrin aldehyde	Silvex	Sulfide	Sample Specific Notes
OW-101B			G	GW		N		X											
OW-105B			G	GW		N		X											
OW-113B	5-23-24	1415	G	GW	6	N		X										X	Turbidity - 135.60 NTU
OW-114B			G	GW		N		X											
OW-205B			G	GW		N		X			X			X				X	
OW-209B			G	GW		N		X											
OW-212B			G	GW		N		X											
OW-213BR			G	GW		N		X											
OW-216BR			G	GW		N		X											
OW-219B			G	GW		N		X											
OW-219B-FD			G	GW		N		X											
Duplicate#5	5-23-24		G	GW	5	N		X											

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No | Cooler Temp (°C) Obs'd._____ Corr'd _____ | Therm ID No ._____

Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Ben Porter	Aecom	5-24-24			
Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Relinquished by	Company	Date/Time	Received in Laboratory by	Company	Date/Time

6/10/2024

› Cedar Falls
.ure Way

Cedar Falls, IA 50613
phone 319.277.2401 fax 319.277 2425

Chain of Custody Record

eurofins Environment Testing America

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other IDNR

Eurofins Environment Testing America

Client Contact	Project Manager: Chris Oelkers	Site Contact:	Date: 5-24-24	COC No
AECOM	Email Christopher Oelkers@aecom.com	Lab Contact:	Carrier:	1 of 1 COCs
501 Sycamore Street, Suite 222	Tel/Fax:319-296-6878			TALS Project #
Waterloo, IA 50703	Analysis Turnaround Time			Sampler
(319) 232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(xxx) xxx-xxxx FAX	TAT if different from Below			Walk-in Client.
Project Name Black Hawk Co IDNR	☑ 2 weeks			Lab Sampling
Site Black Hawk County Landfill	☐ 1 week			Job / SDG No
P O #	☐ 2 days ☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	Appendix I, TSS	Appendix II, TSS	2,4-D	4,4'-DDD	beta-BHC	delta BHC	Endosulfan I	Endosulfan sulfate	Endrin aldehyde	Silvex	Sulfide	Sample Specific Notes
GUW3-1			G	GW		N		X											
GUX-1			G	GW		N		X											
P-213C	5-23-24	1030	G	GW	18	N			X										Turbidity - 0.66 NTU
P-214CR	5-23-24	1330	G	GW	5	N		X											Turbidity - 35.53 NTU
P-215CR			G	GW		N		X											
P-216CR			G	GW		N		X											
P-402A			G	GW		N		X											
P-402C			G	GW		N		X											
P-604C			G	GW		N		X											
P-703C			G	GW		N		X											
P-703C-FD			G	GW		N		X											

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No | Cooler Temp (°C) Obs'd _____ Corr'd. _____ | Therm ID No. _____

Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Ben Porter	Aecom	5-24-24			5/24/24 1120
Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Relinquished by	Company	Date/Time	Received in Laboratory by	Company	Date/Time

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone: 319-277-2401 Fax: 319-277-2425

1.8\3.2

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Bindert, Zach T	Carrier Tracking No(s):	COC No: 310-72802.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Zach.Bindert@et.eurofinsus.com	State of Origin: Iowa	Page: Page 1 of 1
Company: Eurofins Environment Testing North Centr		Accreditations Required (See note): State - Iowa; State Program - Iowa		Job #: 310-282049-1
Address: 180 S. Van Buren Avenue,	Due Date Requested: 6/10/2024			Preservation Codes: -
City: Barberton	TAT Requested (days):			
State, Zip: OH, 44203				
Phone: 330-497-9396(Tel) 330-497-0772(Fax)	PO #:			
Email:	WO #:			
Project Name: Black Hawk County Landfill (IDNR)	Project #: 31017149			
Site: 310 - Black Hawk County (IDNR)	SSOW#:			Other: G022 ~~M049~~ 5-25-24

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9034_Calc/9030B Sulfide	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
OW-226B (310-282049-3)	5/23/24	15:30 Central		Water			X	1	
OW-227B (310-282049-4)	5/23/24	17:00 Central		Water			X	1	
OW-113B (310-282049-6)	5/23/24	14:15 Central		Water			X	1	
P-213C (310-282049-8)	5/23/24	10:30 Central		Water			X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing North Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing North Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing North Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing North Central, LLC.

Possible Hazard Identification *Unconfirmed*	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)* ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by: [signature]	Date/Time: 5/24/24 1445	Company	Received by: JESSICA RIGDON	Date/Time: 5-25-24 0930	Company EETNC
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:		

Ver: 04/02/2024 6/10/2024

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone: 319-277-2401 Fax: 319-277-2425

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Bindert, Zach T	Carrier Tracking No(s):	COC No: 310-72803.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Zach.Bindert@et.eurofinsus.com	State of Origin: Iowa	Page: Page 1 of 1
Company: Eurofins Lancaster Laboratories Environm		Accreditations Required (See note): State - Iowa; State Program - Iowa		Job #: 310-282049-1
Address: 2425 New Holland Pike, ,	Due Date Requested: 6/10/2024			Preservation Codes: -
City: Lancaster	TAT Requested (days):			
State, Zip: PA, 17601				
Phone: 717-656-2300(Tel)	PO #:			
Email:	WO #:			
Project Name: Black Hawk County Landfill (IDNR)	Project #: 31017149			
Site: 310 - Black Hawk County (IDNR)	SSOW#:			Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8151A/8151A_AP Default List	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
OW-401B (310-282049-1)	5/23/24	18:00 Central		Water			X	2	
P-213C (310-282049-8)	5/23/24	10:30 Central		Water			X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing North Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing North Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing North Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing North Central, LLC.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		5/24/24 1958				
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 5/25/24 0955	Company EURT

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 6.5-10.1/6.2-9.8

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-282049-1

Login Number: 282049

List Source: Eurofins Cedar Falls

List Number: 1

Creator: Homolar, Dana J

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Chris Oelkers
AECOM
501 Sycamore Street
Suite #222
Waterloo, Iowa 50703

Generated 6/10/2024 9:49:10 AM

JOB DESCRIPTION

Black Hawk County Landfill (IDNR)

JOB NUMBER

310-282049-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

my EOL

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



Generated
6/10/2024 9:49:10 AM

Authorized for release by
Zach Bindert, Client Service Manager
Zach.Bindert@et.eurofinsus.com
(319)277-2401

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Job Narrative
310-282049-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 5/24/2024 11:20 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 3.1°C and 3.6°C.

GC/MS VOA
Method 8260D: The following samples were collected in a properly preserved vial; however, the pH was outside the required criteria when verified by the laboratory. The samples were analyzed within the 7-day holding time specified for unpreserved samples: OW-226B (310-282049-3) and OW-227B (310-282049-4).

Method 8260D: The continuing calibration verification (CCV) associated with batch 310-423506 recovered above the upper control limit for Carbon tetrachloride (33.4%D). The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated sample is impacted: (CCV 310-423506/3).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC/MS Semi VOA
Method 8270E: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 310-422930. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

Method 8270E: The laboratory control sample and/or the laboratory control sample duplicate (LCS/LCSD) for preparation batch 310-422930 and analytical batch 310-423476 recovered outside control limits for the following analyte(s): p-Phenylene diamine. p-Phenylene diamine has been identified as a poor performing analyte when analyzed using this method; therefore, re-extraction/re-analysis was not performed.

Method 8270E: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for preparation batch 310-422930 and analytical batch 310-423476 recovered outside control limits for the following analytes: Famphur and Kepone. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Method 8270E: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 310-422930 and analytical batch 310-423476 recovered outside control limits for the following analytes: 3,3'-Dimethylbenzidine, Methapyrilene and p-Phenylene diamine.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

PCBs
Method 8082A: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 310-422933. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

Method 8082A: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated

with preparation batch 310-422933.The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Pesticides
Method 8081B: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 310-422933. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

Method 8081B: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 310-422933.The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
Method 6020B: The initial calibration verification (ICV) result for batch 310-423570 was above the upper control limit. The affected analytes are: Silver. Sample results were non-detects, and have been reported as qualified data. OW-226B (310-282049-3), OW-227B (310-282049-4), Equipment Blank 3 (310-282049-5), OW-113B (310-282049-6), Duplicate 5 (310-282049-7), P-213C (310-282049-8) and P-214CR (310-282049-9)

Method 6020B: The low level check standard recovery associated with batch 310-423570 is outside the acceptance criteria for the following analyte(s): Silver. Sample results were non-detects, and have been reported as qualified data. OW-226B (310-282049-3), OW-227B (310-282049-4), Equipment Blank 3 (310-282049-5), OW-113B (310-282049-6), Duplicate 5 (310-282049-7), P-213C (310-282049-8) and P-214CR (310-282049-9)

Method 6020B: The laboratory control sample (LCS) for preparation batch 310-422763 and analytical batch 310-423570 recovered outside control limits for the following analytes: Silver. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported. OW-226B (310-282049-3), OW-227B (310-282049-4), Equipment Blank 3 (310-282049-5), OW-113B (310-282049-6), Duplicate 5 (310-282049-7), P-213C (310-282049-8) and P-214CR (310-282049-9)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Field Service / Mobile Lab
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Sample Summary

Client: AECOM
Job ID: 310-282049-1
Project/Site: Black Hawk County Landfill (IDNR)

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-282049-2	Trip Blank	Water	05/23/24 05:00	05/24/24 11:20
310-282049-3	OW-226B	Water	05/23/24 15:30	05/24/24 11:20
310-282049-4	OW-227B	Water	05/23/24 17:00	05/24/24 11:20
310-282049-5	Equipment Blank 3	Water	05/23/24 17:00	05/24/24 11:20
310-282049-6	OW-113B	Water	05/23/24 14:15	05/24/24 11:20
310-282049-7	Duplicate 5	Water	05/23/24 00:00	05/24/24 11:20
310-282049-8	P-213C	Water	05/23/24 10:30	05/24/24 11:20
310-282049-9	P-214CR	Water	05/23/24 13:30	05/24/24 11:20

Detection Summary

Client: AECOM
Job ID: 310-282049-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Trip Blank — Lab Sample ID: 310-282049-2

No Detections.

Client Sample ID: OW-226B — Lab Sample ID: 310-282049-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	0.755	J	1.00	0.220	ug/L	1		8260D	Total/NA
Acetone	5.36	J	10.0	3.10	ug/L	1		8260D	Total/NA
Benzene	2.02		0.500	0.220	ug/L	1		8260D	Total/NA
Arsenic	8.05		2.00	0.530	ug/L	1		6020B	Total/NA
Barium	1450		2.00	0.660	ug/L	1		6020B	Total/NA
Cadmium	0.148	J	0.200	0.100	ug/L	1		6020B	Total/NA
Chromium	9.35		5.00	1.20	ug/L	1		6020B	Total/NA
Cobalt	18.8		0.500	0.170	ug/L	1		6020B	Total/NA
Copper	3.06	J	5.00	1.80	ug/L	1		6020B	Total/NA
Lead	0.978		0.500	0.260	ug/L	1		6020B	Total/NA
Nickel	70.5		5.00	2.10	ug/L	1		6020B	Total/NA
Vanadium	2.74	J	5.00	1.10	ug/L	1		6020B	Total/NA
Total Suspended Solids	48.0		15.0	11.1	mg/L	1		I-3765-85	Total/NA
Field Turbidity	24.86				NTU	1		Field Sampling	Total/NA

Client Sample ID: OW-227B — Lab Sample ID: 310-282049-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	0.647	J	1.00	0.220	ug/L	1		8260D	Total/NA
1,4-Dichlorobenzene	0.371	J	1.00	0.230	ug/L	1		8260D	Total/NA
Acetone	8.33	J	10.0	3.10	ug/L	1		8260D	Total/NA
Benzene	2.99		0.500	0.220	ug/L	1		8260D	Total/NA
Chloroethane	0.804	J	4.00	0.790	ug/L	1		8260D	Total/NA
Arsenic	16.9		2.00	0.530	ug/L	1		6020B	Total/NA
Barium	1920		2.00	0.660	ug/L	1		6020B	Total/NA
Cadmium	0.216		0.200	0.100	ug/L	1		6020B	Total/NA
Chromium	6.53		5.00	1.20	ug/L	1		6020B	Total/NA
Cobalt	23.5		0.500	0.170	ug/L	1		6020B	Total/NA
Lead	0.659		0.500	0.260	ug/L	1		6020B	Total/NA
Nickel	78.4		5.00	2.10	ug/L	1		6020B	Total/NA
Vanadium	2.48	J	5.00	1.10	ug/L	1		6020B	Total/NA
Total Suspended Solids	68.0		15.0	11.1	mg/L	1		I-3765-85	Total/NA
Field Turbidity	9.52				NTU	1		Field Sampling	Total/NA

Client Sample ID: Equipment Blank 3 — Lab Sample ID: 310-282049-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.573	J	2.00	0.530	ug/L	1		6020B	Total/NA
Barium	24.3		2.00	0.660	ug/L	1		6020B	Total/NA

Client Sample ID: OW-113B — Lab Sample ID: 310-282049-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	2.19		2.00	0.530	ug/L	1		6020B	Total/NA
Barium	14.1		2.00	0.660	ug/L	1		6020B	Total/NA
Chromium	4.10	J	5.00	1.20	ug/L	1		6020B	Total/NA
Cobalt	14.4		0.500	0.170	ug/L	1		6020B	Total/NA
Nickel	20.9		5.00	2.10	ug/L	1		6020B	Total/NA
Total Suspended Solids	33.0		7.50	5.55	mg/L	1		I-3765-85	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: OW-113B (Continued) — Lab Sample ID: 310-282049-6

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Field Turbidity	135.60				NTU	1		Field Sampling	Total/NA

Client Sample ID: Duplicate 5 — Lab Sample ID: 310-282049-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	2.11		2.00	0.530	ug/L	1		6020B	Total/NA
Barium	13.5		2.00	0.660	ug/L	1		6020B	Total/NA
Chromium	21.0		5.00	1.20	ug/L	1		6020B	Total/NA
Cobalt	14.3		0.500	0.170	ug/L	1		6020B	Total/NA
Nickel	27.8		5.00	2.10	ug/L	1		6020B	Total/NA
Total Suspended Solids	16.3		5.00	3.70	mg/L	1		I-3765-85	Total/NA

Client Sample ID: P-213C — Lab Sample ID: 310-282049-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone (MEK)	2.30	J	10.0	2.10	ug/L	1		8260D	Total/NA
Barium	8.72		2.00	0.660	ug/L	1		6020B	Total/NA
Cobalt	3.25		0.500	0.170	ug/L	1		6020B	Total/NA
Nickel	9.60		5.00	2.10	ug/L	1		6020B	Total/NA
Field Turbidity	0.66				NTU	1		Field Sampling	Total/NA

Client Sample ID: P-214CR — Lab Sample ID: 310-282049-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	3.53	J	10.0	3.10	ug/L	1		8260D	Total/NA
Arsenic	0.830	J	2.00	0.530	ug/L	1		6020B	Total/NA
Barium	130		2.00	0.660	ug/L	1		6020B	Total/NA
Cobalt	0.190	J	0.500	0.170	ug/L	1		6020B	Total/NA
Total Suspended Solids	39.0		1.88	1.39	mg/L	1		I-3765-85	Total/NA
Field Turbidity	35.53				NTU	1		Field Sampling	Total/NA

This Detection Summary does not include radiochemical test results.

Client: AECOM
Job ID: 310-282049-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Trip Blank
Lab Sample ID: 310-282049-2
Date Collected: 05/23/24 05:00
Matrix: Water
Date Received: 05/24/24 11:20

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/29/24 11:58	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/29/24 11:58	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/29/24 11:58	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/29/24 11:58	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/29/24 11:58	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/29/24 11:58	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/29/24 11:58	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/29/24 11:58	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/29/24 11:58	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/29/24 11:58	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/29/24 11:58	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/29/24 11:58	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/29/24 11:58	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/29/24 11:58	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/29/24 11:58	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/29/24 11:58	1
Acetone	<3.10		10.0	3.10	ug/L			05/29/24 11:58	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/29/24 11:58	1
Benzene	<0.220		0.500	0.220	ug/L			05/29/24 11:58	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/29/24 11:58	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/29/24 11:58	1
Bromoform	<0.780		5.00	0.780	ug/L			05/29/24 11:58	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/29/24 11:58	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/29/24 11:58	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/29/24 11:58	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/29/24 11:58	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/29/24 11:58	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/29/24 11:58	1
Chloroform	<1.30		3.00	1.30	ug/L			05/29/24 11:58	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/29/24 11:58	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/29/24 11:58	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/29/24 11:58	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/29/24 11:58	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/29/24 11:58	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/29/24 11:58	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/29/24 11:58	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/29/24 11:58	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/29/24 11:58	1
Styrene	<0.370		1.00	0.370	ug/L			05/29/24 11:58	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/29/24 11:58	1
Toluene	<0.430		1.00	0.430	ug/L			05/29/24 11:58	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/29/24 11:58	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/29/24 11:58	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/29/24 11:58	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/29/24 11:58	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/29/24 11:58	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/29/24 11:58	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/29/24 11:58	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/29/24 11:58	1

Client: AECOM
Job ID: 310-282049-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Trip Blank
Lab Sample ID: 310-282049-2
Date Collected: 05/23/24 05:00
Matrix: Water
Date Received: 05/24/24 11:20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	114		73 - 130		05/29/24 11:58	1
Toluene-d8 (Surr)	95		80 - 120		05/29/24 11:58	1
4-Bromofluorobenzene (Surr)	104		80 - 120		05/29/24 11:58	1

Client: AECOM
Job ID: 310-282049-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-226B
Lab Sample ID: 310-282049-3
Date Collected: 05/23/24 15:30
Matrix: Water
Date Received: 05/24/24 11:20

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/29/24 16:53	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/29/24 16:53	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/29/24 16:53	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/29/24 16:53	1
1,1-Dichloroethane	**0.755**	**J**	1.00	0.220	ug/L			05/29/24 16:53	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/29/24 16:53	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/29/24 16:53	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/29/24 16:53	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/29/24 16:53	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/29/24 16:53	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/29/24 16:53	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/29/24 16:53	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/29/24 16:53	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/29/24 16:53	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/29/24 16:53	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/29/24 16:53	1
Acetone	**5.36**	**J**	10.0	3.10	ug/L			05/29/24 16:53	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/29/24 16:53	1
Benzene	**2.02**		0.500	0.220	ug/L			05/29/24 16:53	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/29/24 16:53	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/29/24 16:53	1
Bromoform	<0.780		5.00	0.780	ug/L			05/29/24 16:53	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/29/24 16:53	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/29/24 16:53	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/29/24 16:53	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/29/24 16:53	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/29/24 16:53	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/29/24 16:53	1
Chloroform	<1.30		3.00	1.30	ug/L			05/29/24 16:53	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/29/24 16:53	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/29/24 16:53	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/29/24 16:53	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/29/24 16:53	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/29/24 16:53	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/29/24 16:53	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/29/24 16:53	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/29/24 16:53	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/29/24 16:53	1
Styrene	<0.370		1.00	0.370	ug/L			05/29/24 16:53	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/29/24 16:53	1
Toluene	<0.430		1.00	0.430	ug/L			05/29/24 16:53	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/29/24 16:53	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/29/24 16:53	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/29/24 16:53	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/29/24 16:53	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/29/24 16:53	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/29/24 16:53	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/29/24 16:53	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/29/24 16:53	1

Client: AECOM
Job ID: 310-282049-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-226B
Lab Sample ID: 310-282049-3

Date Collected: 05/23/24 15:30
Matrix: Water

Date Received: 05/24/24 11:20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*118*		*73 - 130*		*05/29/24 16:53*	*1*
Toluene-d8 (Surr)	*94*		*80 - 120*		*05/29/24 16:53*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*		*05/29/24 16:53*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		05/28/24 09:00	05/31/24 19:56	1
Arsenic	**8.05**		2.00	0.530	ug/L		05/28/24 09:00	05/31/24 19:56	1
Barium	**1450**		2.00	0.660	ug/L		05/28/24 09:00	05/31/24 19:56	1
Beryllium	<0.330		1.00	0.330	ug/L		05/28/24 09:00	05/31/24 19:56	1
Cadmium	**0.148**	**J**	0.200	0.100	ug/L		05/28/24 09:00	05/31/24 19:56	1
Chromium	**9.35**		5.00	1.20	ug/L		05/28/24 09:00	05/31/24 19:56	1
Cobalt	**18.8**		0.500	0.170	ug/L		05/28/24 09:00	05/31/24 19:56	1
Copper	**3.06**	**J**	5.00	1.80	ug/L		05/28/24 09:00	05/31/24 19:56	1
Lead	**0.978**		0.500	0.260	ug/L		05/28/24 09:00	05/31/24 19:56	1
Nickel	**70.5**		5.00	2.10	ug/L		05/28/24 09:00	05/31/24 19:56	1
Selenium	<1.40		5.00	1.40	ug/L		05/28/24 09:00	05/31/24 19:56	1
Silver	<0.500	^3+ *+ ^1+	1.00	0.500	ug/L		05/28/24 09:00	06/04/24 19:58	1
Thallium	<0.570		1.00	0.570	ug/L		05/28/24 09:00	05/31/24 19:56	1
Vanadium	**2.74**	**J**	5.00	1.10	ug/L		05/28/24 09:00	05/31/24 19:56	1
Zinc	<9.70		20.0	9.70	ug/L		05/28/24 09:00	05/31/24 19:56	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide (SW846 9034)	<1.41		3.00	1.41	mg/L		05/30/24 07:53	05/30/24 09:40	1
Total Suspended Solids (USGS I-3765-85)	**48.0**		15.0	11.1	mg/L			05/29/24 10:13	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**24.86**				NTU			05/23/24 15:30	1

Client: AECOM
Job ID: 310-282049-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-227B
Lab Sample ID: 310-282049-4
Date Collected: 05/23/24 17:00
Matrix: Water
Date Received: 05/24/24 11:20

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/29/24 17:16	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/29/24 17:16	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/29/24 17:16	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/29/24 17:16	1
1,1-Dichloroethane	**0.647**	**J**	1.00	0.220	ug/L			05/29/24 17:16	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/29/24 17:16	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/29/24 17:16	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/29/24 17:16	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/29/24 17:16	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/29/24 17:16	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/29/24 17:16	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/29/24 17:16	1
1,4-Dichlorobenzene	**0.371**	**J**	1.00	0.230	ug/L			05/29/24 17:16	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/29/24 17:16	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/29/24 17:16	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/29/24 17:16	1
Acetone	**8.33**	**J**	10.0	3.10	ug/L			05/29/24 17:16	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/29/24 17:16	1
Benzene	**2.99**		0.500	0.220	ug/L			05/29/24 17:16	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/29/24 17:16	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/29/24 17:16	1
Bromoform	<0.780		5.00	0.780	ug/L			05/29/24 17:16	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/29/24 17:16	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/29/24 17:16	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/29/24 17:16	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/29/24 17:16	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/29/24 17:16	1
Chloroethane	**0.804**	**J**	4.00	0.790	ug/L			05/29/24 17:16	1
Chloroform	<1.30		3.00	1.30	ug/L			05/29/24 17:16	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/29/24 17:16	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/29/24 17:16	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/29/24 17:16	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/29/24 17:16	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/29/24 17:16	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/29/24 17:16	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/29/24 17:16	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/29/24 17:16	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/29/24 17:16	1
Styrene	<0.370		1.00	0.370	ug/L			05/29/24 17:16	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/29/24 17:16	1
Toluene	<0.430		1.00	0.430	ug/L			05/29/24 17:16	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/29/24 17:16	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/29/24 17:16	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/29/24 17:16	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/29/24 17:16	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/29/24 17:16	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/29/24 17:16	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/29/24 17:16	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/29/24 17:16	1

Client: AECOM
Job ID: 310-282049-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-227B
Lab Sample ID: 310-282049-4

Date Collected: 05/23/24 17:00
Matrix: Water

Date Received: 05/24/24 11:20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*117*		*73 - 130*		*05/29/24 17:16*	*1*
Toluene-d8 (Surr)	*95*		*80 - 120*		*05/29/24 17:16*	*1*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*		*05/29/24 17:16*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		05/28/24 09:00	05/31/24 20:00	1
Arsenic	**16.9**		2.00	0.530	ug/L		05/28/24 09:00	05/31/24 20:00	1
Barium	**1920**		2.00	0.660	ug/L		05/28/24 09:00	05/31/24 20:00	1
Beryllium	<0.330		1.00	0.330	ug/L		05/28/24 09:00	05/31/24 20:00	1
Cadmium	**0.216**		0.200	0.100	ug/L		05/28/24 09:00	05/31/24 20:00	1
Chromium	**6.53**		5.00	1.20	ug/L		05/28/24 09:00	05/31/24 20:00	1
Cobalt	**23.5**		0.500	0.170	ug/L		05/28/24 09:00	05/31/24 20:00	1
Copper	<1.80		5.00	1.80	ug/L		05/28/24 09:00	05/31/24 20:00	1
Lead	**0.659**		0.500	0.260	ug/L		05/28/24 09:00	05/31/24 20:00	1
Nickel	**78.4**		5.00	2.10	ug/L		05/28/24 09:00	05/31/24 20:00	1
Selenium	<1.40		5.00	1.40	ug/L		05/28/24 09:00	05/31/24 20:00	1
Silver	<0.500	^3+ *+ ^1+	1.00	0.500	ug/L		05/28/24 09:00	06/04/24 20:02	1
Thallium	<0.570		1.00	0.570	ug/L		05/28/24 09:00	05/31/24 20:00	1
Vanadium	**2.48**	**J**	5.00	1.10	ug/L		05/28/24 09:00	05/31/24 20:00	1
Zinc	<9.70		20.0	9.70	ug/L		05/28/24 09:00	05/31/24 20:00	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide (SW846 9034)	<1.41		3.00	1.41	mg/L		05/30/24 07:53	05/30/24 09:40	1
Total Suspended Solids (USGS I-3765-85)	**68.0**		15.0	11.1	mg/L			05/29/24 10:13	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**9.52**				NTU			05/23/24 17:00	1

Client: AECOM
Job ID: 310-282049-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Equipment Blank 3
Lab Sample ID: 310-282049-5
Date Collected: 05/23/24 17:00
Matrix: Water
Date Received: 05/24/24 11:20

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			06/04/24 15:50	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			06/04/24 15:50	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			06/04/24 15:50	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			06/04/24 15:50	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			06/04/24 15:50	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			06/04/24 15:50	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			06/04/24 15:50	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			06/04/24 15:50	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			06/04/24 15:50	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			06/04/24 15:50	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			06/04/24 15:50	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			06/04/24 15:50	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			06/04/24 15:50	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			06/04/24 15:50	1
2-Hexanone	<2.00		10.0	2.00	ug/L			06/04/24 15:50	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			06/04/24 15:50	1
Acetone	<3.10		10.0	3.10	ug/L			06/04/24 15:50	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			06/04/24 15:50	1
Benzene	<0.220		0.500	0.220	ug/L			06/04/24 15:50	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			06/04/24 15:50	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			06/04/24 15:50	1
Bromoform	<0.780		5.00	0.780	ug/L			06/04/24 15:50	1
Bromomethane	<1.10		4.00	1.10	ug/L			06/04/24 15:50	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			06/04/24 15:50	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			06/04/24 15:50	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			06/04/24 15:50	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			06/04/24 15:50	1
Chloroethane	<0.790		4.00	0.790	ug/L			06/04/24 15:50	1
Chloroform	<1.30		3.00	1.30	ug/L			06/04/24 15:50	1
Chloromethane	<0.610		3.00	0.610	ug/L			06/04/24 15:50	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			06/04/24 15:50	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			06/04/24 15:50	1
Dibromomethane	<0.330		1.00	0.330	ug/L			06/04/24 15:50	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			06/04/24 15:50	1
Iodomethane	<7.00		10.0	7.00	ug/L			06/04/24 15:50	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			06/04/24 15:50	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			06/04/24 15:50	1
o-Xylene	<0.400		1.00	0.400	ug/L			06/04/24 15:50	1
Styrene	<0.370		1.00	0.370	ug/L			06/04/24 15:50	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			06/04/24 15:50	1
Toluene	<0.430		1.00	0.430	ug/L			06/04/24 15:50	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			06/04/24 15:50	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			06/04/24 15:50	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			06/04/24 15:50	1
Trichloroethene	<0.430		1.00	0.430	ug/L			06/04/24 15:50	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			06/04/24 15:50	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			06/04/24 15:50	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			06/04/24 15:50	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			06/04/24 15:50	1

Client: AECOM
Job ID: 310-282049-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Equipment Blank 3
Lab Sample ID: 310-282049-5

Date Collected: 05/23/24 17:00
Matrix: Water

Date Received: 05/24/24 11:20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*116*		*73 - 130*		*06/04/24 15:50*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*06/04/24 15:50*	*1*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*		*06/04/24 15:50*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		05/28/24 09:00	05/31/24 20:03	1
Arsenic	**0.573**	**J**	2.00	0.530	ug/L		05/28/24 09:00	05/31/24 20:03	1
Barium	**24.3**		2.00	0.660	ug/L		05/28/24 09:00	05/31/24 20:03	1
Beryllium	<0.330		1.00	0.330	ug/L		05/28/24 09:00	05/31/24 20:03	1
Cadmium	<0.100		0.200	0.100	ug/L		05/28/24 09:00	05/31/24 20:03	1
Chromium	<1.20		5.00	1.20	ug/L		05/28/24 09:00	06/04/24 20:05	1
Cobalt	<0.170		0.500	0.170	ug/L		05/28/24 09:00	06/04/24 20:05	1
Copper	<1.80		5.00	1.80	ug/L		05/28/24 09:00	06/04/24 20:05	1
Lead	<0.260		0.500	0.260	ug/L		05/28/24 09:00	05/31/24 20:03	1
Nickel	<2.10		5.00	2.10	ug/L		05/28/24 09:00	05/31/24 20:03	1
Selenium	<1.40		5.00	1.40	ug/L		05/28/24 09:00	06/04/24 20:05	1
Silver	<0.500	^3+ *+ ^1+	1.00	0.500	ug/L		05/28/24 09:00	06/04/24 20:05	1
Thallium	<0.570		1.00	0.570	ug/L		05/28/24 09:00	05/31/24 20:03	1
Vanadium	<1.10		5.00	1.10	ug/L		05/28/24 09:00	06/04/24 20:05	1
Zinc	<9.70		20.0	9.70	ug/L		05/28/24 09:00	06/04/24 20:05	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	<1.39		1.88	1.39	mg/L			05/29/24 09:32	1

Client: AECOM
Job ID: 310-282049-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-113B
Lab Sample ID: 310-282049-6
Date Collected: 05/23/24 14:15
Matrix: Water
Date Received: 05/24/24 11:20

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			06/04/24 16:12	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			06/04/24 16:12	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			06/04/24 16:12	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			06/04/24 16:12	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			06/04/24 16:12	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			06/04/24 16:12	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			06/04/24 16:12	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			06/04/24 16:12	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			06/04/24 16:12	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			06/04/24 16:12	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			06/04/24 16:12	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			06/04/24 16:12	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			06/04/24 16:12	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			06/04/24 16:12	1
2-Hexanone	<2.00		10.0	2.00	ug/L			06/04/24 16:12	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			06/04/24 16:12	1
Acetone	<3.10		10.0	3.10	ug/L			06/04/24 16:12	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			06/04/24 16:12	1
Benzene	<0.220		0.500	0.220	ug/L			06/04/24 16:12	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			06/04/24 16:12	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			06/04/24 16:12	1
Bromoform	<0.780		5.00	0.780	ug/L			06/04/24 16:12	1
Bromomethane	<1.10		4.00	1.10	ug/L			06/04/24 16:12	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			06/04/24 16:12	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			06/04/24 16:12	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			06/04/24 16:12	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			06/04/24 16:12	1
Chloroethane	<0.790		4.00	0.790	ug/L			06/04/24 16:12	1
Chloroform	<1.30		3.00	1.30	ug/L			06/04/24 16:12	1
Chloromethane	<0.610		3.00	0.610	ug/L			06/04/24 16:12	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			06/04/24 16:12	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			06/04/24 16:12	1
Dibromomethane	<0.330		1.00	0.330	ug/L			06/04/24 16:12	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			06/04/24 16:12	1
Iodomethane	<7.00		10.0	7.00	ug/L			06/04/24 16:12	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			06/04/24 16:12	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			06/04/24 16:12	1
o-Xylene	<0.400		1.00	0.400	ug/L			06/04/24 16:12	1
Styrene	<0.370		1.00	0.370	ug/L			06/04/24 16:12	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			06/04/24 16:12	1
Toluene	<0.430		1.00	0.430	ug/L			06/04/24 16:12	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			06/04/24 16:12	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			06/04/24 16:12	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			06/04/24 16:12	1
Trichloroethene	<0.430		1.00	0.430	ug/L			06/04/24 16:12	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			06/04/24 16:12	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			06/04/24 16:12	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			06/04/24 16:12	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			06/04/24 16:12	1

Client: AECOM
Job ID: 310-282049-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-113B
Lab Sample ID: 310-282049-6

Date Collected: 05/23/24 14:15
Matrix: Water

Date Received: 05/24/24 11:20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*115*		*73 - 130*		*06/04/24 16:12*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*06/04/24 16:12*	*1*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*		*06/04/24 16:12*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		05/28/24 09:00	05/31/24 20:07	1
Arsenic	**2.19**		2.00	0.530	ug/L		05/28/24 09:00	05/31/24 20:07	1
Barium	**14.1**		2.00	0.660	ug/L		05/28/24 09:00	05/31/24 20:07	1
Beryllium	<0.330		1.00	0.330	ug/L		05/28/24 09:00	05/31/24 20:07	1
Cadmium	<0.100		0.200	0.100	ug/L		05/28/24 09:00	05/31/24 20:07	1
Chromium	**4.10**	**J**	5.00	1.20	ug/L		05/28/24 09:00	05/31/24 20:07	1
Cobalt	**14.4**		0.500	0.170	ug/L		05/28/24 09:00	05/31/24 20:07	1
Copper	<1.80		5.00	1.80	ug/L		05/28/24 09:00	05/31/24 20:07	1
Lead	<0.260		0.500	0.260	ug/L		05/28/24 09:00	05/31/24 20:07	1
Nickel	**20.9**		5.00	2.10	ug/L		05/28/24 09:00	05/31/24 20:07	1
Selenium	<1.40		5.00	1.40	ug/L		05/28/24 09:00	05/31/24 20:07	1
Silver	<0.500	^3+ *+ ^1+	1.00	0.500	ug/L		05/28/24 09:00	06/04/24 20:09	1
Thallium	<0.570		1.00	0.570	ug/L		05/28/24 09:00	05/31/24 20:07	1
Vanadium	<1.10		5.00	1.10	ug/L		05/28/24 09:00	05/31/24 20:07	1
Zinc	<9.70		20.0	9.70	ug/L		05/28/24 09:00	05/31/24 20:07	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide (SW846 9034)	<1.41		3.00	1.41	mg/L		05/30/24 07:53	05/30/24 09:40	1
Total Suspended Solids (USGS I-3765-85)	**33.0**		7.50	5.55	mg/L			05/29/24 10:13	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**135.60**				NTU			05/23/24 14:15	1

Client: AECOM
Job ID: 310-282049-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Duplicate 5
Lab Sample ID: 310-282049-7
Date Collected: 05/23/24 00:00
Matrix: Water
Date Received: 05/24/24 11:20

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			06/04/24 16:35	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			06/04/24 16:35	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			06/04/24 16:35	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			06/04/24 16:35	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			06/04/24 16:35	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			06/04/24 16:35	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			06/04/24 16:35	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			06/04/24 16:35	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			06/04/24 16:35	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			06/04/24 16:35	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			06/04/24 16:35	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			06/04/24 16:35	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			06/04/24 16:35	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			06/04/24 16:35	1
2-Hexanone	<2.00		10.0	2.00	ug/L			06/04/24 16:35	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			06/04/24 16:35	1
Acetone	<3.10		10.0	3.10	ug/L			06/04/24 16:35	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			06/04/24 16:35	1
Benzene	<0.220		0.500	0.220	ug/L			06/04/24 16:35	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			06/04/24 16:35	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			06/04/24 16:35	1
Bromoform	<0.780		5.00	0.780	ug/L			06/04/24 16:35	1
Bromomethane	<1.10		4.00	1.10	ug/L			06/04/24 16:35	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			06/04/24 16:35	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			06/04/24 16:35	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			06/04/24 16:35	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			06/04/24 16:35	1
Chloroethane	<0.790		4.00	0.790	ug/L			06/04/24 16:35	1
Chloroform	<1.30		3.00	1.30	ug/L			06/04/24 16:35	1
Chloromethane	<0.610		3.00	0.610	ug/L			06/04/24 16:35	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			06/04/24 16:35	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			06/04/24 16:35	1
Dibromomethane	<0.330		1.00	0.330	ug/L			06/04/24 16:35	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			06/04/24 16:35	1
Iodomethane	<7.00		10.0	7.00	ug/L			06/04/24 16:35	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			06/04/24 16:35	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			06/04/24 16:35	1
o-Xylene	<0.400		1.00	0.400	ug/L			06/04/24 16:35	1
Styrene	<0.370		1.00	0.370	ug/L			06/04/24 16:35	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			06/04/24 16:35	1
Toluene	<0.430		1.00	0.430	ug/L			06/04/24 16:35	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			06/04/24 16:35	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			06/04/24 16:35	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			06/04/24 16:35	1
Trichloroethene	<0.430		1.00	0.430	ug/L			06/04/24 16:35	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			06/04/24 16:35	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			06/04/24 16:35	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			06/04/24 16:35	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			06/04/24 16:35	1

Client: AECOM
Job ID: 310-282049-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Duplicate 5
Lab Sample ID: 310-282049-7

Date Collected: 05/23/24 00:00
Matrix: Water
Date Received: 05/24/24 11:20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*117*		*73 - 130*		*06/04/24 16:35*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*06/04/24 16:35*	*1*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*		*06/04/24 16:35*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		05/28/24 09:00	05/31/24 20:10	1
Arsenic	**2.11**		2.00	0.530	ug/L		05/28/24 09:00	05/31/24 20:10	1
Barium	**13.5**		2.00	0.660	ug/L		05/28/24 09:00	05/31/24 20:10	1
Beryllium	<0.330		1.00	0.330	ug/L		05/28/24 09:00	05/31/24 20:10	1
Cadmium	<0.100		0.200	0.100	ug/L		05/28/24 09:00	05/31/24 20:10	1
Chromium	**21.0**		5.00	1.20	ug/L		05/28/24 09:00	05/31/24 20:10	1
Cobalt	**14.3**		0.500	0.170	ug/L		05/28/24 09:00	05/31/24 20:10	1
Copper	<1.80		5.00	1.80	ug/L		05/28/24 09:00	05/31/24 20:10	1
Lead	<0.260		0.500	0.260	ug/L		05/28/24 09:00	05/31/24 20:10	1
Nickel	**27.8**		5.00	2.10	ug/L		05/28/24 09:00	05/31/24 20:10	1
Selenium	<1.40		5.00	1.40	ug/L		05/28/24 09:00	05/31/24 20:10	1
Silver	<0.500	^3+ *+ ^1+	1.00	0.500	ug/L		05/28/24 09:00	06/04/24 20:13	1
Thallium	<0.570		1.00	0.570	ug/L		05/28/24 09:00	05/31/24 20:10	1
Vanadium	<1.10		5.00	1.10	ug/L		05/28/24 09:00	05/31/24 20:10	1
Zinc	<9.70		20.0	9.70	ug/L		05/28/24 09:00	05/31/24 20:10	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**16.3**		5.00	3.70	mg/L			05/29/24 10:13	1

Client: AECOM
Job ID: 310-282049-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: P-213C
Lab Sample ID: 310-282049-8
Date Collected: 05/23/24 10:30
Matrix: Water
Date Received: 05/24/24 11:20

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/29/24 19:30	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/29/24 19:30	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/29/24 19:30	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/29/24 19:30	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/29/24 19:30	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/29/24 19:30	1
1,1-Dichloropropene	<0.430		1.00	0.430	ug/L			05/29/24 19:30	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/29/24 19:30	1
1,2,4-Trichlorobenzene	<0.750		5.00	0.750	ug/L			05/29/24 19:30	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/29/24 19:30	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/29/24 19:30	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/29/24 19:30	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/29/24 19:30	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/29/24 19:30	1
1,3-Dichlorobenzene	<0.300		1.00	0.300	ug/L			05/29/24 19:30	1
1,3-Dichloropropane	<0.400		1.00	0.400	ug/L			05/29/24 19:30	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/29/24 19:30	1
2,2-Dichloropropane	<0.690		4.00	0.690	ug/L			05/29/24 19:30	1
2-Butanone (MEK)	**2.30**	**J**	10.0	2.10	ug/L			05/29/24 19:30	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/29/24 19:30	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/29/24 19:30	1
Acetone	<3.10		10.0	3.10	ug/L			05/29/24 19:30	1
Acrolein	<3.60		10.0	3.60	ug/L			05/29/24 19:30	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/29/24 19:30	1
Allyl chloride	<0.700		2.00	0.700	ug/L			05/29/24 19:30	1
Benzene	<0.220		0.500	0.220	ug/L			05/29/24 19:30	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/29/24 19:30	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/29/24 19:30	1
Bromoform	<0.780		5.00	0.780	ug/L			05/29/24 19:30	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/29/24 19:30	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/29/24 19:30	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/29/24 19:30	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/29/24 19:30	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/29/24 19:30	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/29/24 19:30	1
Chloroform	<1.30		3.00	1.30	ug/L			05/29/24 19:30	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/29/24 19:30	1
Chloroprene	<0.230		1.00	0.230	ug/L			05/29/24 19:30	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/29/24 19:30	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/29/24 19:30	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/29/24 19:30	1
Dichlorodifluoromethane	<0.250		3.00	0.250	ug/L			05/29/24 19:30	1
Ethyl methacrylate	<0.680		2.00	0.680	ug/L			05/29/24 19:30	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/29/24 19:30	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/29/24 19:30	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/29/24 19:30	1
Methacrylonitrile	<3.30		10.0	3.30	ug/L			05/29/24 19:30	1
Methyl methacrylate	<0.760		2.00	0.760	ug/L			05/29/24 19:30	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/29/24 19:30	1

Client Sample ID: P-213C
Lab Sample ID: 310-282049-8
Date Collected: 05/23/24 10:30
Matrix: Water
Date Received: 05/24/24 11:20

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<3.00		5.00	3.00	ug/L			05/29/24 19:30	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/29/24 19:30	1
Propionitrile	<3.40		10.0	3.40	ug/L			05/29/24 19:30	1
Styrene	<0.370		1.00	0.370	ug/L			05/29/24 19:30	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/29/24 19:30	1
Toluene	<0.430		1.00	0.430	ug/L			05/29/24 19:30	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/29/24 19:30	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/29/24 19:30	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/29/24 19:30	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/29/24 19:30	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/29/24 19:30	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/29/24 19:30	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/29/24 19:30	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/29/24 19:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*101*		*73 - 130*		*05/29/24 19:30*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*05/29/24 19:30*	*1*
4-Bromofluorobenzene (Surr)	*106*		*80 - 120*		*05/29/24 19:30*	*1*

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4,5-Tetrachlorobenzene	<0.614		11.4	0.614	ug/L		05/29/24 07:35	06/03/24 22:25	1
1,3,5-Trinitrobenzene	<2.61		11.4	2.61	ug/L		05/29/24 07:35	06/04/24 16:39	1
1,3-Dinitrobenzene	<3.64		11.4	3.64	ug/L		05/29/24 07:35	06/03/24 22:25	1
1,4-Naphthoquinone	<4.09		11.4	4.09	ug/L		05/29/24 07:35	06/04/24 16:39	1
1,4-phenylenediamine	<2.16	*- *1	11.4	2.16	ug/L		05/29/24 07:35	06/04/24 16:39	1
1-Naphthylamine	<2.84		11.4	2.84	ug/L		05/29/24 07:35	06/04/24 16:39	1
2,3,4,6-Tetrachlorophenol	<6.02		11.4	6.02	ug/L		05/29/24 07:35	06/03/24 22:25	1
2,4,5-Trichlorophenol	<6.02		11.4	6.02	ug/L		05/29/24 07:35	06/03/24 22:25	1
2,4,6-Trichlorophenol	<5.68		11.4	5.68	ug/L		05/29/24 07:35	06/03/24 22:25	1
2,4-Dichlorophenol	<0.966		11.4	0.966	ug/L		05/29/24 07:35	06/03/24 22:25	1
2,4-Dimethylphenol	<0.659		11.4	0.659	ug/L		05/29/24 07:35	06/03/24 22:25	1
2,4-Dinitrophenol	<14.8		22.7	14.8	ug/L		05/29/24 07:35	06/03/24 22:25	1
2,4-Dinitrotoluene	<7.27		11.4	7.27	ug/L		05/29/24 07:35	06/03/24 22:25	1
2,6-Dichlorophenol	<0.784		11.4	0.784	ug/L		05/29/24 07:35	06/03/24 22:25	1
2,6-Dinitrotoluene	<0.591		11.4	0.591	ug/L		05/29/24 07:35	06/03/24 22:25	1
2-Acetylaminofluorene	<3.07		11.4	3.07	ug/L		05/29/24 07:35	06/04/24 16:39	1
2-Chloronaphthalene	<0.727		11.4	0.727	ug/L		05/29/24 07:35	06/03/24 22:25	1
2-Chlorophenol	<0.614		11.4	0.614	ug/L		05/29/24 07:35	06/03/24 22:25	1
2-Methylnaphthalene	<0.670		11.4	0.670	ug/L		05/29/24 07:35	06/03/24 22:25	1
2-Methylphenol	<0.739		11.4	0.739	ug/L		05/29/24 07:35	06/03/24 22:25	1
2-Naphthylamine	<2.39		11.4	2.39	ug/L		05/29/24 07:35	06/04/24 16:39	1
2-Nitroaniline	<6.70		11.4	6.70	ug/L		05/29/24 07:35	06/03/24 22:25	1
2-Nitrophenol	<7.73		11.4	7.73	ug/L		05/29/24 07:35	06/03/24 22:25	1
3,3'-Dichlorobenzidine	<1.59		11.4	1.59	ug/L		05/29/24 07:35	06/03/24 22:25	1
3,3'-Dimethylbenzidine	<1.70	*1	11.4	1.70	ug/L		05/29/24 07:35	06/04/24 16:39	1
3-Methylcholanthrene	<0.364		11.4	0.364	ug/L		05/29/24 07:35	06/04/24 16:39	1
3-Nitroaniline	<3.07		11.4	3.07	ug/L		05/29/24 07:35	06/03/24 22:25	1
4,6-Dinitro-2-methylphenol	<7.84		11.4	7.84	ug/L		05/29/24 07:35	06/03/24 22:25	1

Client: AECOM
Job ID: 310-282049-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: P-213C
Lab Sample ID: 310-282049-8
Date Collected: 05/23/24 10:30
Matrix: Water
Date Received: 05/24/24 11:20

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Aminobiphenyl	<2.50		11.4	2.50	ug/L		05/29/24 07:35	06/04/24 16:39	1
4-Bromophenyl phenyl ether	<0.795		11.4	0.795	ug/L		05/29/24 07:35	06/03/24 22:25	1
4-Chloro-3-methylphenol	<0.955		11.4	0.955	ug/L		05/29/24 07:35	06/03/24 22:25	1
4-Chloroaniline	<0.705		11.4	0.705	ug/L		05/29/24 07:35	06/03/24 22:25	1
4-Chlorophenyl phenyl ether	<0.784		11.4	0.784	ug/L		05/29/24 07:35	06/03/24 22:25	1
Methylphenol, 3 & 4	<0.795		11.4	0.795	ug/L		05/29/24 07:35	06/03/24 22:25	1
4-Nitroaniline	<1.48		11.4	1.48	ug/L		05/29/24 07:35	06/03/24 22:25	1
4-Nitrophenol	<8.64		11.4	8.64	ug/L		05/29/24 07:35	06/03/24 22:25	1
5-Nitro-o-toluidine	<3.18		11.4	3.18	ug/L		05/29/24 07:35	06/04/24 16:39	1
7,12-Dimethylbenz(a)anthracene	<2.16		11.4	2.16	ug/L		05/29/24 07:35	06/04/24 16:39	1
Acenaphthene	<0.727		11.4	0.727	ug/L		05/29/24 07:35	06/03/24 22:25	1
Acenaphthylene	<0.818		11.4	0.818	ug/L		05/29/24 07:35	06/03/24 22:25	1
Acetophenone	<0.784		11.4	0.784	ug/L		05/29/24 07:35	06/03/24 22:25	1
Anthracene	<0.989		11.4	0.989	ug/L		05/29/24 07:35	06/03/24 22:25	1
Benzo[a]anthracene	<0.966		11.4	0.966	ug/L		05/29/24 07:35	06/03/24 22:25	1
Benzo[a]pyrene	<9.20		11.4	9.20	ug/L		05/29/24 07:35	06/03/24 22:25	1
Benzo[b]fluoranthene	<5.57		11.4	5.57	ug/L		05/29/24 07:35	06/03/24 22:25	1
Benzo[g,h,i]perylene	<7.16		11.4	7.16	ug/L		05/29/24 07:35	06/03/24 22:25	1
Benzo[k]fluoranthene	<2.50		11.4	2.50	ug/L		05/29/24 07:35	06/03/24 22:25	1
Benzyl alcohol	<1.48		11.4	1.48	ug/L		05/29/24 07:35	06/03/24 22:25	1
Bis(2-chloroethoxy)methane	<0.864		11.4	0.864	ug/L		05/29/24 07:35	06/03/24 22:25	1
Bis(2-chloroethyl)ether	<0.932		11.4	0.932	ug/L		05/29/24 07:35	06/03/24 22:25	1
bis (2-chloroisopropyl) ether	<0.614		11.4	0.614	ug/L		05/29/24 07:35	06/03/24 22:25	1
Bis(2-ethylhexyl) phthalate	<6.25		11.4	6.25	ug/L		05/29/24 07:35	06/03/24 22:25	1
Butyl benzyl phthalate	<6.14		11.4	6.14	ug/L		05/29/24 07:35	06/03/24 22:25	1
Chlorobenzilate	<4.09		11.4	4.09	ug/L		05/29/24 07:35	06/04/24 16:39	1
Chrysene	<0.989		11.4	0.989	ug/L		05/29/24 07:35	06/03/24 22:25	1
Diallate	<4.55		11.4	4.55	ug/L		05/29/24 07:35	06/04/24 16:39	1
Dibenzo(a,h)anthracene	<4.43		11.4	4.43	ug/L		05/29/24 07:35	06/03/24 22:25	1
Dibenzofuran	<0.841		11.4	0.841	ug/L		05/29/24 07:35	06/03/24 22:25	1
Diethyl phthalate	<1.93		11.4	1.93	ug/L		05/29/24 07:35	06/03/24 22:25	1
Dimethoate	<4.09		11.4	4.09	ug/L		05/29/24 07:35	06/04/24 16:39	1
Dimethyl phthalate	<1.14		11.4	1.14	ug/L		05/29/24 07:35	06/03/24 22:25	1
Di-n-butyl phthalate	<6.36		11.4	6.36	ug/L		05/29/24 07:35	06/03/24 22:25	1
Di-n-octyl phthalate	<7.95		22.7	7.95	ug/L		05/29/24 07:35	06/03/24 22:25	1
Dinoseb	<2.73		11.4	2.73	ug/L		05/29/24 07:35	06/04/24 16:39	1
Diphenylamine	<6.82		11.4	6.82	ug/L		05/29/24 07:35	06/03/24 22:25	1
Disulfoton	<2.73		11.4	2.73	ug/L		05/29/24 07:35	06/04/24 16:39	1
Ethyl methanesulfonate	<4.09		11.4	4.09	ug/L		05/29/24 07:35	06/04/24 16:39	1
Ethyl Parathion	<2.50		11.4	2.50	ug/L		05/29/24 07:35	06/04/24 16:39	1
Famphur	<4.32	*+	11.4	4.32	ug/L		05/29/24 07:35	06/04/24 16:39	1
Fluoranthene	<1.93		11.4	1.93	ug/L		05/29/24 07:35	06/03/24 22:25	1
Fluorene	<0.898		11.4	0.898	ug/L		05/29/24 07:35	06/03/24 22:25	1
Hexachlorobenzene	<0.795		11.4	0.795	ug/L		05/29/24 07:35	06/03/24 22:25	1
Hexachlorobutadiene	<0.977		11.4	0.977	ug/L		05/29/24 07:35	06/03/24 22:25	1
Hexachlorocyclopentadiene	<5.80		11.4	5.80	ug/L		05/29/24 07:35	06/03/24 22:25	1
Hexachloroethane	<1.10		11.4	1.10	ug/L		05/29/24 07:35	06/03/24 22:25	1
Hexachloropropene	<2.95		11.4	2.95	ug/L		05/29/24 07:35	06/04/24 16:39	1
Indeno[1,2,3-cd]pyrene	<4.77		11.4	4.77	ug/L		05/29/24 07:35	06/03/24 22:25	1

Client Sample ID: P-213C
Lab Sample ID: 310-282049-8
Date Collected: 05/23/24 10:30
Matrix: Water
Date Received: 05/24/24 11:20

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Isodrin	<5.34		11.4	5.34	ug/L		05/29/24 07:35	06/04/24 16:39	1
Isophorone	<1.06		11.4	1.06	ug/L		05/29/24 07:35	06/03/24 22:25	1
Isosafrole	<2.61		11.4	2.61	ug/L		05/29/24 07:35	06/04/24 16:39	1
Kepone	<1.14	*+	11.4	1.14	ug/L		05/29/24 07:35	06/04/24 16:39	1
Methapyrilene	<0.864	*1	11.4	0.864	ug/L		05/29/24 07:35	06/04/24 16:39	1
Methyl methanesulfonate	<3.75		11.4	3.75	ug/L		05/29/24 07:35	06/04/24 16:39	1
Methyl parathion	<2.61		11.4	2.61	ug/L		05/29/24 07:35	06/04/24 16:39	1
Nitrobenzene	<0.909		11.4	0.909	ug/L		05/29/24 07:35	06/03/24 22:25	1
N-Nitrosodiethylamine	<3.86		11.4	3.86	ug/L		05/29/24 07:35	06/04/24 16:39	1
N-Nitrosodimethylamine	<0.818		11.4	0.818	ug/L		05/29/24 07:35	06/03/24 22:25	1
N-Nitrosodi-n-butylamine	<4.43		11.4	4.43	ug/L		05/29/24 07:35	06/04/24 16:39	1
N-Nitrosodi-n-propylamine	<1.05		11.4	1.05	ug/L		05/29/24 07:35	06/03/24 22:25	1
N-Nitrosodiphenylamine	<0.852		11.4	0.852	ug/L		05/29/24 07:35	06/03/24 22:25	1
N-Nitrosomethylethylamine	<5.57		11.4	5.57	ug/L		05/29/24 07:35	06/04/24 16:39	1
N-Nitrosopiperidine	<3.07		11.4	3.07	ug/L		05/29/24 07:35	06/04/24 16:39	1
N-Nitrosopyrrolidine	<4.09		11.4	4.09	ug/L		05/29/24 07:35	06/04/24 16:39	1
o,o',o''-Triethylphosphorothioate	<3.64		11.4	3.64	ug/L		05/29/24 07:35	06/04/24 16:39	1
o-Toluidine	<3.30		11.4	3.30	ug/L		05/29/24 07:35	06/04/24 16:39	1
p-Dimethylamino azobenzene	<2.50		11.4	2.50	ug/L		05/29/24 07:35	06/04/24 16:39	1
Pentachlorobenzene	<3.18		11.4	3.18	ug/L		05/29/24 07:35	06/04/24 16:39	1
Pentachloronitrobenzene	<6.59		11.4	6.59	ug/L		05/29/24 07:35	06/04/24 16:39	1
Pentachlorophenol	<10.9		11.4	10.9	ug/L		05/29/24 07:35	06/03/24 22:25	1
Phenacetin	<2.16		11.4	2.16	ug/L		05/29/24 07:35	06/04/24 16:39	1
Phenanthrene	<0.898		11.4	0.898	ug/L		05/29/24 07:35	06/03/24 22:25	1
Phenol	<1.25		11.4	1.25	ug/L		05/29/24 07:35	06/03/24 22:25	1
Phorate	<3.64		11.4	3.64	ug/L		05/29/24 07:35	06/04/24 16:39	1
Pronamide	<3.07		11.4	3.07	ug/L		05/29/24 07:35	06/04/24 16:39	1
Pyrene	<0.898		11.4	0.898	ug/L		05/29/24 07:35	06/03/24 22:25	1
Safrole	<3.18		11.4	3.18	ug/L		05/29/24 07:35	06/04/24 16:39	1
Thionazin	<3.98		11.4	3.98	ug/L		05/29/24 07:35	06/04/24 16:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorophenol (Surr)	*71*		*25 - 110*	*05/29/24 07:35*	*06/03/24 22:25*	*1*
Phenol-d5 (Surr)	*59*		*21 - 110*	*05/29/24 07:35*	*06/03/24 22:25*	*1*
Nitrobenzene-d5 (Surr)	*96*		*45 - 129*	*05/29/24 07:35*	*06/03/24 22:25*	*1*
2-Fluorobiphenyl (Surr)	*80*		*39 - 118*	*05/29/24 07:35*	*06/03/24 22:25*	*1*
2,4,6-Tribromophenol (Surr)	*86*		*27 - 136*	*05/29/24 07:35*	*06/03/24 22:25*	*1*
Terphenyl-d14 (Surr)	*90*		*12 - 144*	*05/29/24 07:35*	*06/03/24 22:25*	*1*

Method: SW846 8015C - Nonhalogenated Organic using GC/FID (Direct Aqueous Injection)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetonitrile	<2600		10000	2600	ug/L			05/28/24 17:12	1
Isobutanol	<2400		10000	2400	ug/L			05/28/24 17:12	1

Method: SW846 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	<0.0321		0.0762	0.0321	ug/L		05/29/24 07:55	06/04/24 18:30	1
4,4'-DDE	<0.0321		0.0762	0.0321	ug/L		05/29/24 07:55	06/04/24 18:30	1
4,4'-DDT	<0.0500		0.0762	0.0500	ug/L		05/29/24 07:55	06/04/24 18:30	1
Aldrin	<0.0381		0.0762	0.0381	ug/L		05/29/24 07:55	06/04/24 18:30	1

Client Sample ID: P-213C
Lab Sample ID: 310-282049-8
Date Collected: 05/23/24 10:30
Matrix: Water
Date Received: 05/24/24 11:20

Method: SW846 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
alpha-BHC	<0.0345		0.0762	0.0345	ug/L		05/29/24 07:55	06/04/24 18:30	1
beta-BHC	<0.0440		0.0762	0.0440	ug/L		05/29/24 07:55	06/04/24 18:30	1
Chlordane (technical)	<0.964		2.38	0.964	ug/L		05/29/24 07:55	06/04/24 18:30	1
delta-BHC	<0.0321		0.0762	0.0321	ug/L		05/29/24 07:55	06/04/24 18:30	1
Dieldrin	<0.0310		0.0762	0.0310	ug/L		05/29/24 07:55	06/04/24 18:30	1
Endosulfan I	<0.0393		0.0762	0.0393	ug/L		05/29/24 07:55	06/04/24 18:30	1
Endosulfan II	<0.0345		0.0762	0.0345	ug/L		05/29/24 07:55	06/04/24 18:30	1
Endosulfan sulfate	<0.0357		0.0762	0.0357	ug/L		05/29/24 07:55	06/04/24 18:30	1
Endrin	<0.0310		0.0762	0.0310	ug/L		05/29/24 07:55	06/04/24 18:30	1
Endrin aldehyde	<0.0345		0.0762	0.0345	ug/L		05/29/24 07:55	06/04/24 18:30	1
gamma-BHC (Lindane)	<0.0429		0.0762	0.0429	ug/L		05/29/24 07:55	06/04/24 18:30	1
Heptachlor	<0.0393		0.0762	0.0393	ug/L		05/29/24 07:55	06/04/24 18:30	1
Heptachlor epoxide	<0.0345		0.0762	0.0345	ug/L		05/29/24 07:55	06/04/24 18:30	1
Methoxychlor	<0.0488		0.0762	0.0488	ug/L		05/29/24 07:55	06/04/24 18:30	1
Toxaphene	<0.821		2.38	0.821	ug/L		05/29/24 07:55	06/04/24 18:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*97*		*10 - 136*	*05/29/24 07:55*	*06/04/24 18:30*	*1*
Tetrachloro-m-xylene (Surr)	*72*		*10 - 130*	*05/29/24 07:55*	*06/04/24 18:30*	*1*

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.202		0.952	0.202	ug/L		05/29/24 07:55	06/04/24 18:30	1
PCB-1221	<0.202		0.952	0.202	ug/L		05/29/24 07:55	06/04/24 18:30	1
PCB-1232	<0.202		0.952	0.202	ug/L		05/29/24 07:55	06/04/24 18:30	1
PCB-1242	<0.202		0.952	0.202	ug/L		05/29/24 07:55	06/04/24 18:30	1
PCB-1248	<0.131		0.952	0.131	ug/L		05/29/24 07:55	06/04/24 18:30	1
PCB-1254	<0.131		0.952	0.131	ug/L		05/29/24 07:55	06/04/24 18:30	1
PCB-1260	<0.131		0.952	0.131	ug/L		05/29/24 07:55	06/04/24 18:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*97*		*10 - 136*	*05/29/24 07:55*	*06/04/24 18:30*	*1*
Tetrachloro-m-xylene (Surr)	*72*		*10 - 130*	*05/29/24 07:55*	*06/04/24 18:30*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		05/28/24 09:00	05/31/24 20:14	1
Arsenic	<0.530		2.00	0.530	ug/L		05/28/24 09:00	05/31/24 20:14	1
Barium	**8.72**		2.00	0.660	ug/L		05/28/24 09:00	05/31/24 20:14	1
Beryllium	<0.330		1.00	0.330	ug/L		05/28/24 09:00	05/31/24 20:14	1
Cadmium	<0.100		0.200	0.100	ug/L		05/28/24 09:00	05/31/24 20:14	1
Chromium	<1.20		5.00	1.20	ug/L		05/28/24 09:00	05/31/24 20:14	1
Cobalt	**3.25**		0.500	0.170	ug/L		05/28/24 09:00	05/31/24 20:14	1
Copper	<1.80		5.00	1.80	ug/L		05/28/24 09:00	05/31/24 20:14	1
Lead	<0.260		0.500	0.260	ug/L		05/28/24 09:00	05/31/24 20:14	1
Nickel	**9.60**		5.00	2.10	ug/L		05/28/24 09:00	05/31/24 20:14	1
Selenium	<1.40		5.00	1.40	ug/L		05/28/24 09:00	05/31/24 20:14	1
Silver	<0.500	^3+ *+ ^1+	1.00	0.500	ug/L		05/28/24 09:00	06/04/24 20:16	1
Thallium	<0.570		1.00	0.570	ug/L		05/28/24 09:00	05/31/24 20:14	1
Vanadium	<1.10		5.00	1.10	ug/L		05/28/24 09:00	05/31/24 20:14	1

Client: AECOM
Job ID: 310-282049-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: P-213C
Lab Sample ID: 310-282049-8
Date Collected: 05/23/24 10:30
Matrix: Water
Date Received: 05/24/24 11:20

Method: SW846 6020B - Metals (ICP/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	<9.70		20.0	9.70	ug/L		05/28/24 09:00	05/31/24 20:14	1
Tin	<2.30		5.00	2.30	ug/L		05/28/24 09:00	05/31/24 20:14	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.110		0.200	0.110	ug/L		05/28/24 13:59	05/29/24 15:08	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total (SW846 9012B)	<3.50		10.0	3.50	ug/L		05/30/24 09:42	05/30/24 17:15	1
Sulfide (SW846 9034)	<1.41		3.00	1.41	mg/L		05/30/24 07:53	05/30/24 09:40	1
Total Suspended Solids (USGS I-3765-85)	<1.39		1.88	1.39	mg/L			05/29/24 10:13	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**0.66**				NTU			05/23/24 10:30	1

Client: AECOM
Job ID: 310-282049-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: P-214CR
Lab Sample ID: 310-282049-9
Date Collected: 05/23/24 13:30
Matrix: Water
Date Received: 05/24/24 11:20

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/29/24 19:52	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/29/24 19:52	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/29/24 19:52	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/29/24 19:52	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/29/24 19:52	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/29/24 19:52	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/29/24 19:52	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/29/24 19:52	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/29/24 19:52	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/29/24 19:52	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/29/24 19:52	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/29/24 19:52	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/29/24 19:52	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/29/24 19:52	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/29/24 19:52	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/29/24 19:52	1
Acetone	**3.53**	**J**	10.0	3.10	ug/L			05/29/24 19:52	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/29/24 19:52	1
Benzene	<0.220		0.500	0.220	ug/L			05/29/24 19:52	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/29/24 19:52	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/29/24 19:52	1
Bromoform	<0.780		5.00	0.780	ug/L			05/29/24 19:52	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/29/24 19:52	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/29/24 19:52	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/29/24 19:52	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/29/24 19:52	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/29/24 19:52	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/29/24 19:52	1
Chloroform	<1.30		3.00	1.30	ug/L			05/29/24 19:52	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/29/24 19:52	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/29/24 19:52	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/29/24 19:52	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/29/24 19:52	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/29/24 19:52	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/29/24 19:52	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/29/24 19:52	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/29/24 19:52	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/29/24 19:52	1
Styrene	<0.370		1.00	0.370	ug/L			05/29/24 19:52	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/29/24 19:52	1
Toluene	<0.430		1.00	0.430	ug/L			05/29/24 19:52	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/29/24 19:52	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/29/24 19:52	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/29/24 19:52	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/29/24 19:52	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/29/24 19:52	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/29/24 19:52	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/29/24 19:52	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/29/24 19:52	1

Client: AECOM
Job ID: 310-282049-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: P-214CR
Lab Sample ID: 310-282049-9

Date Collected: 05/23/24 13:30
Matrix: Water

Date Received: 05/24/24 11:20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*102*		*73 - 130*		*05/29/24 19:52*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*05/29/24 19:52*	*1*
4-Bromofluorobenzene (Surr)	*106*		*80 - 120*		*05/29/24 19:52*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		05/28/24 09:00	05/31/24 20:32	1
Arsenic	**0.830**	**J**	2.00	0.530	ug/L		05/28/24 09:00	05/31/24 20:32	1
Barium	**130**		2.00	0.660	ug/L		05/28/24 09:00	05/31/24 20:32	1
Beryllium	<0.330		1.00	0.330	ug/L		05/28/24 09:00	05/31/24 20:32	1
Cadmium	<0.100		0.200	0.100	ug/L		05/28/24 09:00	05/31/24 20:32	1
Chromium	<1.20		5.00	1.20	ug/L		05/28/24 09:00	05/31/24 20:32	1
Cobalt	**0.190**	**J**	0.500	0.170	ug/L		05/28/24 09:00	05/31/24 20:32	1
Copper	<1.80		5.00	1.80	ug/L		05/28/24 09:00	05/31/24 20:32	1
Lead	<0.260		0.500	0.260	ug/L		05/28/24 09:00	05/31/24 20:32	1
Nickel	<2.10		5.00	2.10	ug/L		05/28/24 09:00	05/31/24 20:32	1
Selenium	<1.40		5.00	1.40	ug/L		05/28/24 09:00	05/31/24 20:32	1
Silver	<0.500	^3+ *+ ^1+	1.00	0.500	ug/L		05/28/24 09:00	06/04/24 20:34	1
Thallium	<0.570		1.00	0.570	ug/L		05/28/24 09:00	05/31/24 20:32	1
Vanadium	<1.10		5.00	1.10	ug/L		05/28/24 09:00	05/31/24 20:32	1
Zinc	<9.70		20.0	9.70	ug/L		05/28/24 09:00	05/31/24 20:32	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**39.0**		1.88	1.39	mg/L			05/29/24 10:13	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**35.53**				NTU			05/23/24 13:30	1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
*-	LCS and/or LCSD is outside acceptance limits, low biased.
*+	LCS and/or LCSD is outside acceptance limits, high biased.
*1	LCS/LCSD RPD exceeds control limits.
E	Result exceeded calibration range.

GC Semi VOA

Qualifier	Qualifier Description
p	The %RPD between the primary and confirmation column/detector is >40%. The lower value has been reported.

Metals

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
^1+	Initial Calibration Verification (ICV) is outside acceptance limits, high biased.
^3+	Reporting Limit Check Standard is outside acceptance limits, high biased
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
TNTC	Too Numerous To Count

Surrogate Summary

Client: AECOM
Job ID: 310-282049-1
Project/Site: Black Hawk County Landfill (IDNR)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-282049-2	Trip Blank	114	95	104
310-282049-3	OW-226B	118	94	102
310-282049-4	OW-227B	117	95	104
310-282049-5	Equipment Blank 3	116	96	103
310-282049-6	OW-113B	115	96	103
310-282049-6 MS	OW-113B	103	99	103
310-282049-6 MSD	OW-113B	102	100	103
310-282049-7	Duplicate 5	117	96	104
310-282049-8	P-213C	101	100	106
310-282049-9	P-214CR	102	99	106
LCS 310-422854/6	Lab Control Sample	104	97	103
LCS 310-422854/7	Lab Control Sample	117	94	103
LCS 310-422943/6	Lab Control Sample	96	104	100
LCS 310-422943/7	Lab Control Sample	101	101	104
LCS 310-423506/6	Lab Control Sample	101	99	102
LCS 310-423506/7	Lab Control Sample	117	97	104
MB 310-422854/5	Method Blank	115	96	103
MB 310-422943/5	Method Blank	102	101	107
MB 310-423506/5	Method Blank	115	98	102

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		2FP	PHL	NBZ	FBP	TBP	TPHL
Lab Sample ID	Client Sample ID	(25-110)	(21-110)	(45-129)	(39-118)	(27-136)	(12-144)
310-282049-8	P-213C	71	59	96	80	86	90
LCS 310-422930/2-A	Lab Control Sample	76	59	99	86	93	95
LCSD 310-422930/3-A	Lab Control Sample Dup	73	57	95	79	92	92
MB 310-422930/1-A	Method Blank	81	64	109	90	88	96

Surrogate Legend

2FP = 2-Fluorophenol (Surr)
PHL = Phenol-d5 (Surr)
NBZ = Nitrobenzene-d5 (Surr)
FBP = 2-Fluorobiphenyl (Surr)
TBP = 2,4,6-Tribromophenol (Surr)
TPHL = Terphenyl-d14 (Surr)

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		DCB1	TCX1
Lab Sample ID	Client Sample ID	(10-136)	(10-130)
310-282049-8	P-213C	97	72

Surrogate Summary

Client: AECOM
Job ID: 310-282049-1
Project/Site: Black Hawk County Landfill (IDNR)

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)									
		DCB1	TCX1								
Lab Sample ID	Client Sample ID	(10-136)	(10-130)								
LCS 310-422933/2-A	Lab Control Sample	75	67								
LCSD 310-422933/3-A	Lab Control Sample Dup	73	54								
MB 310-422933/1-A	Method Blank	81	62								

Surrogate Legend

DCB = DCB Decachlorobiphenyl (Surr)

TCX = Tetrachloro-m-xylene (Surr)

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)									
		DCB1	TCX1								
Lab Sample ID	Client Sample ID	(10-136)	(10-130)								
310-282049-8	P-213C	97	72								
LCS 310-422933/4-A	Lab Control Sample	81	62								
LCSD 310-422933/5-A	Lab Control Sample Dup	68	44								
MB 310-422933/1-A	Method Blank	81	62								

Surrogate Legend

DCB = DCB Decachlorobiphenyl (Surr)

TCX = Tetrachloro-m-xylene (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 310-422854/5
Matrix: Water
Analysis Batch: 422854

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/29/24 10:04	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/29/24 10:04	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/29/24 10:04	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/29/24 10:04	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/29/24 10:04	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/29/24 10:04	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/29/24 10:04	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/29/24 10:04	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/29/24 10:04	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/29/24 10:04	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/29/24 10:04	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/29/24 10:04	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/29/24 10:04	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/29/24 10:04	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/29/24 10:04	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/29/24 10:04	1
Acetone	<3.10		10.0	3.10	ug/L			05/29/24 10:04	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/29/24 10:04	1
Benzene	<0.220		0.500	0.220	ug/L			05/29/24 10:04	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/29/24 10:04	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/29/24 10:04	1
Bromoform	<0.780		5.00	0.780	ug/L			05/29/24 10:04	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/29/24 10:04	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/29/24 10:04	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/29/24 10:04	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/29/24 10:04	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/29/24 10:04	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/29/24 10:04	1
Chloroform	<1.30		3.00	1.30	ug/L			05/29/24 10:04	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/29/24 10:04	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/29/24 10:04	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/29/24 10:04	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/29/24 10:04	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/29/24 10:04	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/29/24 10:04	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/29/24 10:04	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/29/24 10:04	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/29/24 10:04	1
Styrene	<0.370		1.00	0.370	ug/L			05/29/24 10:04	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/29/24 10:04	1
Toluene	<0.430		1.00	0.430	ug/L			05/29/24 10:04	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/29/24 10:04	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/29/24 10:04	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/29/24 10:04	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/29/24 10:04	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/29/24 10:04	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/29/24 10:04	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/29/24 10:04	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-422854/5
Matrix: Water
Analysis Batch: 422854

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/29/24 10:04	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*115*		*73 - 130*		*05/29/24 10:04*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*05/29/24 10:04*	*1*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*		*05/29/24 10:04*	*1*

Lab Sample ID: LCS 310-422854/6
Matrix: Water
Analysis Batch: 422854

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	20.0	22.03		ug/L		110	71 - 120
1,1,1-Trichloroethane	20.0	22.45		ug/L		112	73 - 129
1,1,2,2-Tetrachloroethane	20.0	18.78		ug/L		94	68 - 124
1,1,2-Trichloroethane	20.0	20.39		ug/L		102	73 - 123
1,1-Dichloroethane	20.0	18.91		ug/L		95	70 - 127
1,1-Dichloroethene	20.0	19.54		ug/L		98	63 - 132
1,2,3-Trichloropropane	20.0	21.42		ug/L		107	65 - 127
1,2-Dibromo-3-Chloropropane	20.0	21.03		ug/L		105	50 - 150
1,2-Dibromoethane (EDB)	20.0	21.75		ug/L		109	75 - 125
1,2-Dichlorobenzene	20.0	21.61		ug/L		108	74 - 120
1,2-Dichloroethane	20.0	20.22		ug/L		101	71 - 125
1,2-Dichloropropane	20.0	20.74		ug/L		104	73 - 124
1,4-Dichlorobenzene	20.0	21.38		ug/L		107	72 - 120
2-Butanone (MEK)	40.0	34.43		ug/L		86	50 - 150
2-Hexanone	40.0	33.50		ug/L		84	60 - 140
4-Methyl-2-pentanone (MIBK)	40.0	34.00		ug/L		85	60 - 139
Acetone	40.0	33.27		ug/L		83	50 - 150
Acrylonitrile	200	185.2		ug/L		93	50 - 150
Benzene	20.0	20.41		ug/L		102	72 - 124
Bromochloromethane	20.0	21.53		ug/L		108	73 - 130
Bromodichloromethane	20.0	21.21		ug/L		106	74 - 122
Bromoform	20.0	21.93		ug/L		110	61 - 122
Carbon disulfide	20.0	18.28		ug/L		91	59 - 135
Carbon tetrachloride	20.0	25.02		ug/L		125	67 - 132
Chlorobenzene	20.0	21.06		ug/L		105	76 - 120
Chlorodibromomethane	20.0	22.45		ug/L		112	71 - 121
Chloroform	20.0	20.31		ug/L		102	72 - 125
cis-1,2-Dichloroethene	20.0	20.27		ug/L		101	74 - 123
cis-1,3-Dichloropropene	20.0	19.98		ug/L		100	71 - 125
Dibromomethane	20.0	20.74		ug/L		104	74 - 125
Ethylbenzene	20.0	20.93		ug/L		105	74 - 122
Iodomethane	20.0	19.33		ug/L		97	10 - 150
Methylene Chloride	20.0	18.74		ug/L		94	50 - 150
Styrene	20.0	21.92		ug/L		110	74 - 121
Tetrachloroethene	20.0	22.63		ug/L		113	71 - 130
Toluene	20.0	19.96		ug/L		100	74 - 123

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-422854/6
Matrix: Water
Analysis Batch: 422854

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
trans-1,2-Dichloroethene	20.0	20.47		ug/L		102	70 - 126
trans-1,3-Dichloropropene	20.0	20.54		ug/L		103	69 - 123
trans-1,4-Dichloro-2-butene	20.0	17.55		ug/L		88	50 - 150
Trichloroethene	20.0	22.88		ug/L		114	72 - 126
Vinyl acetate	40.0	36.82		ug/L		92	50 - 150
Xylenes, Total	40.0	42.34		ug/L		106	73 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*104*		*73 - 130*
Toluene-d8 (Surr)	*97*		*80 - 120*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*

Lab Sample ID: LCS 310-422854/7
Matrix: Water
Analysis Batch: 422854

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	17.75		ug/L		89	23 - 150
Chloroethane	20.0	17.76		ug/L		89	54 - 136
Chloromethane	20.0	16.07		ug/L		80	38 - 150
Trichlorofluoromethane	20.0	23.63		ug/L		118	54 - 149
Vinyl chloride	20.0	18.00		ug/L		90	56 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*117*		*73 - 130*
Toluene-d8 (Surr)	*94*		*80 - 120*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*

Lab Sample ID: MB 310-422943/5
Matrix: Water
Analysis Batch: 422943

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			05/29/24 17:41	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			05/29/24 17:41	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			05/29/24 17:41	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			05/29/24 17:41	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			05/29/24 17:41	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			05/29/24 17:41	1
1,1-Dichloropropene	<0.430		1.00	0.430	ug/L			05/29/24 17:41	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			05/29/24 17:41	1
1,2,4-Trichlorobenzene	<0.750		5.00	0.750	ug/L			05/29/24 17:41	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			05/29/24 17:41	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			05/29/24 17:41	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			05/29/24 17:41	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			05/29/24 17:41	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			05/29/24 17:41	1
1,3-Dichlorobenzene	<0.300		1.00	0.300	ug/L			05/29/24 17:41	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-422943/5
Matrix: Water
Analysis Batch: 422943

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichloropropane	<0.400		1.00	0.400	ug/L			05/29/24 17:41	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			05/29/24 17:41	1
2,2-Dichloropropane	<0.690		4.00	0.690	ug/L			05/29/24 17:41	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			05/29/24 17:41	1
2-Hexanone	<2.00		10.0	2.00	ug/L			05/29/24 17:41	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			05/29/24 17:41	1
Acetone	<3.10		10.0	3.10	ug/L			05/29/24 17:41	1
Acrolein	<3.60		10.0	3.60	ug/L			05/29/24 17:41	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			05/29/24 17:41	1
Allyl chloride	<0.700		2.00	0.700	ug/L			05/29/24 17:41	1
Benzene	<0.220		0.500	0.220	ug/L			05/29/24 17:41	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			05/29/24 17:41	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			05/29/24 17:41	1
Bromoform	<0.780		5.00	0.780	ug/L			05/29/24 17:41	1
Bromomethane	<1.10		4.00	1.10	ug/L			05/29/24 17:41	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			05/29/24 17:41	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			05/29/24 17:41	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			05/29/24 17:41	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			05/29/24 17:41	1
Chloroethane	<0.790		4.00	0.790	ug/L			05/29/24 17:41	1
Chloroform	<1.30		3.00	1.30	ug/L			05/29/24 17:41	1
Chloromethane	<0.610		3.00	0.610	ug/L			05/29/24 17:41	1
Chloroprene	<0.230		1.00	0.230	ug/L			05/29/24 17:41	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			05/29/24 17:41	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			05/29/24 17:41	1
Dibromomethane	<0.330		1.00	0.330	ug/L			05/29/24 17:41	1
Dichlorodifluoromethane	<0.250		3.00	0.250	ug/L			05/29/24 17:41	1
Ethyl methacrylate	<0.680		2.00	0.680	ug/L			05/29/24 17:41	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			05/29/24 17:41	1
Iodomethane	<7.00		10.0	7.00	ug/L			05/29/24 17:41	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			05/29/24 17:41	1
Methacrylonitrile	<3.30		10.0	3.30	ug/L			05/29/24 17:41	1
Methyl methacrylate	<0.760		2.00	0.760	ug/L			05/29/24 17:41	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			05/29/24 17:41	1
Naphthalene	<3.00		5.00	3.00	ug/L			05/29/24 17:41	1
o-Xylene	<0.400		1.00	0.400	ug/L			05/29/24 17:41	1
Propionitrile	<3.40		10.0	3.40	ug/L			05/29/24 17:41	1
Styrene	<0.370		1.00	0.370	ug/L			05/29/24 17:41	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			05/29/24 17:41	1
Toluene	<0.430		1.00	0.430	ug/L			05/29/24 17:41	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			05/29/24 17:41	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			05/29/24 17:41	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			05/29/24 17:41	1
Trichloroethene	<0.430		1.00	0.430	ug/L			05/29/24 17:41	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			05/29/24 17:41	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			05/29/24 17:41	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			05/29/24 17:41	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			05/29/24 17:41	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-422943/5
Matrix: Water
Analysis Batch: 422943

Client Sample ID: Method Blank
Prep Type: Total/NA

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	*102*		*73 - 130*		*05/29/24 17:41*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*05/29/24 17:41*	*1*
4-Bromofluorobenzene (Surr)	*107*		*80 - 120*		*05/29/24 17:41*	*1*

Lab Sample ID: LCS 310-422943/6
Matrix: Water
Analysis Batch: 422943

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	20.0	19.56		ug/L		98	71 - 120
1,1,1-Trichloroethane	20.0	18.86		ug/L		94	73 - 129
1,1,2,2-Tetrachloroethane	20.0	19.30		ug/L		97	68 - 124
1,1,2-Trichloroethane	20.0	19.50		ug/L		97	73 - 123
1,1-Dichloroethane	20.0	19.73		ug/L		99	70 - 127
1,1-Dichloroethene	20.0	19.65		ug/L		98	63 - 132
1,1-Dichloropropene	20.0	20.16		ug/L		101	69 - 132
1,2,3-Trichloropropane	20.0	18.79		ug/L		94	65 - 127
1,2,4-Trichlorobenzene	20.0	17.93		ug/L		90	68 - 124
1,2-Dibromo-3-Chloropropane	20.0	18.67		ug/L		93	50 - 150
1,2-Dibromoethane (EDB)	20.0	18.50		ug/L		92	75 - 125
1,2-Dichlorobenzene	20.0	19.72		ug/L		99	74 - 120
1,2-Dichloroethane	20.0	18.14		ug/L		91	71 - 125
1,2-Dichloropropane	20.0	19.58		ug/L		98	73 - 124
1,3-Dichlorobenzene	20.0	18.91		ug/L		95	72 - 120
1,3-Dichloropropane	20.0	19.15		ug/L		96	72 - 125
1,4-Dichlorobenzene	20.0	18.94		ug/L		95	72 - 120
2,2-Dichloropropane	20.0	17.29		ug/L		86	50 - 150
2-Butanone (MEK)	40.0	39.48		ug/L		99	50 - 150
2-Hexanone	40.0	38.58		ug/L		96	60 - 140
4-Methyl-2-pentanone (MIBK)	40.0	39.01		ug/L		98	60 - 139
Acetone	40.0	39.27		ug/L		98	50 - 150
Acrolein	94.8	95.76		ug/L		101	49 - 150
Acrylonitrile	200	197.7		ug/L		99	50 - 150
Allyl chloride	20.0	19.07		ug/L		95	49 - 150
Benzene	20.0	19.92		ug/L		100	72 - 124
Bromochloromethane	20.0	19.15		ug/L		96	73 - 130
Bromodichloromethane	20.0	18.39		ug/L		92	74 - 122
Bromoform	20.0	17.76		ug/L		89	61 - 122
Carbon disulfide	20.0	20.20		ug/L		101	59 - 135
Carbon tetrachloride	20.0	19.40		ug/L		97	67 - 132
Chlorobenzene	20.0	19.58		ug/L		98	76 - 120
Chlorodibromomethane	20.0	18.04		ug/L		90	71 - 121
Chloroform	20.0	18.43		ug/L		92	72 - 125
Chloroprene	20.0	21.09		ug/L		105	69 - 133
cis-1,2-Dichloroethene	20.0	19.18		ug/L		96	74 - 123
cis-1,3-Dichloropropene	20.0	19.66		ug/L		98	71 - 125
Dibromomethane	20.0	18.65		ug/L		93	74 - 125
Ethyl methacrylate	20.0	18.43		ug/L		92	70 - 129

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-422943/6
Matrix: Water
Analysis Batch: 422943

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	20.0	20.83		ug/L		104	74 - 122
Iodomethane	20.0	13.50		ug/L		67	10 - 150
Methacrylonitrile	200	194.5		ug/L		97	69 - 129
Methyl methacrylate	40.0	39.40		ug/L		98	68 - 131
Methylene Chloride	20.0	21.21		ug/L		106	50 - 150
Naphthalene	20.0	17.86		ug/L		89	50 - 150
Propionitrile	200	199.3		ug/L		100	63 - 135
Styrene	20.0	19.94		ug/L		100	74 - 121
Tetrachloroethene	20.0	18.92		ug/L		95	71 - 130
Toluene	20.0	19.22		ug/L		96	74 - 123
trans-1,2-Dichloroethene	20.0	18.86		ug/L		94	70 - 126
trans-1,3-Dichloropropene	20.0	18.40		ug/L		92	69 - 123
trans-1,4-Dichloro-2-butene	20.0	18.46		ug/L		92	50 - 150
Trichloroethene	20.0	19.65		ug/L		98	72 - 126
Vinyl acetate	40.0	34.99		ug/L		87	50 - 150
Xylenes, Total	40.0	40.56		ug/L		101	73 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*96*		*73 - 130*
Toluene-d8 (Surr)	*104*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*

Lab Sample ID: LCS 310-422943/7
Matrix: Water
Analysis Batch: 422943

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	16.63		ug/L		83	23 - 150
Chloroethane	20.0	19.44		ug/L		97	54 - 136
Chloromethane	20.0	20.77		ug/L		104	38 - 150
Dichlorodifluoromethane	20.0	17.03		ug/L		85	39 - 150
Trichlorofluoromethane	20.0	17.96		ug/L		90	54 - 149
Vinyl chloride	20.0	20.30		ug/L		101	56 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*101*		*73 - 130*
Toluene-d8 (Surr)	*101*		*80 - 120*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*

Lab Sample ID: MB 310-423506/5
Matrix: Water
Analysis Batch: 423506

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			06/04/24 13:33	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			06/04/24 13:33	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			06/04/24 13:33	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			06/04/24 13:33	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-423506/5
Matrix: Water
Analysis Batch: 423506

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			06/04/24 13:33	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			06/04/24 13:33	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			06/04/24 13:33	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			06/04/24 13:33	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			06/04/24 13:33	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			06/04/24 13:33	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			06/04/24 13:33	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			06/04/24 13:33	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			06/04/24 13:33	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			06/04/24 13:33	1
2-Hexanone	<2.00		10.0	2.00	ug/L			06/04/24 13:33	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			06/04/24 13:33	1
Acetone	<3.10		10.0	3.10	ug/L			06/04/24 13:33	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			06/04/24 13:33	1
Benzene	<0.220		0.500	0.220	ug/L			06/04/24 13:33	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			06/04/24 13:33	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			06/04/24 13:33	1
Bromoform	<0.780		5.00	0.780	ug/L			06/04/24 13:33	1
Bromomethane	<1.10		4.00	1.10	ug/L			06/04/24 13:33	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			06/04/24 13:33	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			06/04/24 13:33	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			06/04/24 13:33	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			06/04/24 13:33	1
Chloroethane	<0.790		4.00	0.790	ug/L			06/04/24 13:33	1
Chloroform	<1.30		3.00	1.30	ug/L			06/04/24 13:33	1
Chloromethane	<0.610		3.00	0.610	ug/L			06/04/24 13:33	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			06/04/24 13:33	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			06/04/24 13:33	1
Dibromomethane	<0.330		1.00	0.330	ug/L			06/04/24 13:33	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			06/04/24 13:33	1
Iodomethane	<7.00		10.0	7.00	ug/L			06/04/24 13:33	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			06/04/24 13:33	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			06/04/24 13:33	1
o-Xylene	<0.400		1.00	0.400	ug/L			06/04/24 13:33	1
Styrene	<0.370		1.00	0.370	ug/L			06/04/24 13:33	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			06/04/24 13:33	1
Toluene	<0.430		1.00	0.430	ug/L			06/04/24 13:33	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			06/04/24 13:33	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			06/04/24 13:33	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			06/04/24 13:33	1
Trichloroethene	<0.430		1.00	0.430	ug/L			06/04/24 13:33	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			06/04/24 13:33	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			06/04/24 13:33	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			06/04/24 13:33	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			06/04/24 13:33	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*115*		*73 - 130*		*06/04/24 13:33*	*1*

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-423506/5
Matrix: Water
Analysis Batch: 423506

Client Sample ID: Method Blank
Prep Type: Total/NA

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		80 - 120		06/04/24 13:33	1
4-Bromofluorobenzene (Surr)	102		80 - 120		06/04/24 13:33	1

Lab Sample ID: LCS 310-423506/6
Matrix: Water
Analysis Batch: 423506

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	20.0	20.64		ug/L		103	71 - 120
1,1,1-Trichloroethane	20.0	21.27		ug/L		106	73 - 129
1,1,2,2-Tetrachloroethane	20.0	18.80		ug/L		94	68 - 124
1,1,2-Trichloroethane	20.0	19.42		ug/L		97	73 - 123
1,1-Dichloroethane	20.0	17.99		ug/L		90	70 - 127
1,1-Dichloroethene	20.0	18.15		ug/L		91	63 - 132
1,2,3-Trichloropropane	20.0	19.90		ug/L		100	65 - 127
1,2-Dibromo-3-Chloropropane	20.0	19.78		ug/L		99	50 - 150
1,2-Dibromoethane (EDB)	20.0	20.62		ug/L		103	75 - 125
1,2-Dichlorobenzene	20.0	20.15		ug/L		101	74 - 120
1,2-Dichloroethane	20.0	19.37		ug/L		97	71 - 125
1,2-Dichloropropane	20.0	19.91		ug/L		100	73 - 124
1,4-Dichlorobenzene	20.0	19.99		ug/L		100	72 - 120
2-Butanone (MEK)	40.0	37.72		ug/L		94	50 - 150
2-Hexanone	40.0	39.44		ug/L		99	60 - 140
4-Methyl-2-pentanone (MIBK)	40.0	37.64		ug/L		94	60 - 139
Acetone	40.0	31.37		ug/L		78	50 - 150
Acrylonitrile	200	173.3		ug/L		87	50 - 150
Benzene	20.0	18.79		ug/L		94	72 - 124
Bromochloromethane	20.0	20.24		ug/L		101	73 - 130
Bromodichloromethane	20.0	20.32		ug/L		102	74 - 122
Bromoform	20.0	20.74		ug/L		104	61 - 122
Carbon disulfide	20.0	17.12		ug/L		86	59 - 135
Carbon tetrachloride	20.0	24.06		ug/L		120	67 - 132
Chlorobenzene	20.0	19.87		ug/L		99	76 - 120
Chlorodibromomethane	20.0	20.80		ug/L		104	71 - 121
Chloroform	20.0	19.47		ug/L		97	72 - 125
cis-1,2-Dichloroethene	20.0	18.31		ug/L		92	74 - 123
cis-1,3-Dichloropropene	20.0	20.77		ug/L		104	71 - 125
Dibromomethane	20.0	19.33		ug/L		97	74 - 125
Ethylbenzene	20.0	20.29		ug/L		101	74 - 122
Iodomethane	20.0	15.69		ug/L		78	10 - 150
Methylene Chloride	20.0	17.28		ug/L		86	50 - 150
Styrene	20.0	20.39		ug/L		102	74 - 121
Tetrachloroethene	20.0	20.67		ug/L		103	71 - 130
Toluene	20.0	19.61		ug/L		98	74 - 123
trans-1,2-Dichloroethene	20.0	18.80		ug/L		94	70 - 126
trans-1,3-Dichloropropene	20.0	20.64		ug/L		103	69 - 123
trans-1,4-Dichloro-2-butene	20.0	19.99		ug/L		100	50 - 150
Trichloroethene	20.0	20.41		ug/L		102	72 - 126

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-423506/6
Matrix: Water
Analysis Batch: 423506

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Vinyl acetate			40.0	40.38		ug/L		101	50 - 150		
Xylenes, Total			40.0	39.86		ug/L		100	73 - 123		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*101*		*73 - 130*
Toluene-d8 (Surr)	*99*		*80 - 120*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*

Lab Sample ID: LCS 310-423506/7
Matrix: Water
Analysis Batch: 423506

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Bromomethane			20.0	18.11		ug/L		91	23 - 150		
Chloroethane			20.0	20.11		ug/L		101	54 - 136		
Chloromethane			20.0	17.81		ug/L		89	38 - 150		
Trichlorofluoromethane			20.0	24.46		ug/L		122	54 - 149		
Vinyl chloride			20.0	20.68		ug/L		103	56 - 140		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*117*		*73 - 130*
Toluene-d8 (Surr)	*97*		*80 - 120*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*

Lab Sample ID: 310-282049-6 MS
Matrix: Water
Analysis Batch: 423506

Client Sample ID: OW-113B
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
1,1,1,2-Tetrachloroethane	<0.380		20.0	17.17		ug/L		86	55 - 130		
1,1,1-Trichloroethane	<0.190		20.0	19.74		ug/L		99	52 - 130		
1,1,2,2-Tetrachloroethane	<0.470		20.0	15.68		ug/L		78	54 - 130		
1,1,2-Trichloroethane	<0.450		20.0	16.37		ug/L		82	58 - 130		
1,1-Dichloroethane	<0.220		20.0	17.94		ug/L		90	49 - 130		
1,1-Dichloroethene	<0.560		20.0	18.48		ug/L		92	37 - 132		
1,2,3-Trichloropropane	<0.590		20.0	16.01		ug/L		80	49 - 130		
1,2-Dibromo-3-Chloropropane	<1.20		20.0	15.67		ug/L		78	38 - 150		
1,2-Dibromoethane (EDB)	<0.340		20.0	18.00		ug/L		90	60 - 130		
1,2-Dichlorobenzene	<0.370		20.0	16.06		ug/L		80	59 - 130		
1,2-Dichloroethane	<0.390		20.0	18.29		ug/L		91	51 - 130		
1,2-Dichloropropane	<0.270		20.0	18.44		ug/L		92	57 - 130		
1,4-Dichlorobenzene	<0.230		20.0	16.15		ug/L		81	57 - 130		
2-Butanone (MEK)	<2.10		40.0	31.96		ug/L		80	38 - 150		
2-Hexanone	<2.00		40.0	29.16		ug/L		73	46 - 140		
4-Methyl-2-pentanone (MIBK)	<2.10		40.0	29.82		ug/L		75	47 - 139		
Acetone	<3.10		40.0	29.61		ug/L		74	31 - 150		
Acrylonitrile	<2.20		200	166.1		ug/L		83	40 - 150		
Benzene	<0.220		20.0	18.76		ug/L		94	46 - 130		

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 310-282049-6 MS
Matrix: Water
Analysis Batch: 423506

Client Sample ID: OW-113B
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Bromochloromethane	<0.540		20.0	20.26		ug/L		101	57 - 130
Bromodichloromethane	<0.390		20.0	17.87		ug/L		89	57 - 130
Bromoform	<0.780		20.0	15.79		ug/L		79	44 - 130
Carbon disulfide	<0.450		20.0	20.29		ug/L		101	38 - 135
Carbon tetrachloride	<0.650		20.0	21.27		ug/L		106	45 - 132
Chlorobenzene	<0.400		20.0	16.86		ug/L		84	59 - 130
Chlorodibromomethane	<0.750		20.0	16.84		ug/L		84	54 - 130
Chloroform	<1.30		20.0	18.43		ug/L		92	51 - 130
cis-1,2-Dichloroethene	<0.210		20.0	18.10		ug/L		91	45 - 130
cis-1,3-Dichloropropene	<0.250		20.0	18.10		ug/L		90	53 - 130
Dibromomethane	<0.330		20.0	17.88		ug/L		89	59 - 130
Ethylbenzene	<0.310		20.0	17.17		ug/L		86	45 - 130
Iodomethane	<7.00		20.0	15.98		ug/L		80	10 - 150
Methylene Chloride	<1.70		20.0	18.73		ug/L		94	37 - 150
Styrene	<0.370		20.0	17.27		ug/L		86	47 - 130
Tetrachloroethene	<0.480		20.0	17.61		ug/L		88	47 - 130
Toluene	<0.430		20.0	17.80		ug/L		89	51 - 130
trans-1,2-Dichloroethene	<0.270		20.0	19.69		ug/L		98	48 - 130
trans-1,3-Dichloropropene	<0.560		20.0	17.48		ug/L		87	50 - 130
trans-1,4-Dichloro-2-butene	<1.10		20.0	15.27		ug/L		76	26 - 150
Trichloroethene	<0.430		20.0	19.08		ug/L		95	51 - 130
Vinyl acetate	<2.50		40.0	37.34		ug/L		93	29 - 150
Xylenes, Total	<0.400		40.0	35.48		ug/L		89	43 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*103*		*73 - 130*
Toluene-d8 (Surr)	*99*		*80 - 120*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*

Lab Sample ID: 310-282049-6 MSD
Matrix: Water
Analysis Batch: 423506

Client Sample ID: OW-113B
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	<0.380		20.0	17.07		ug/L		85	55 - 130	1	20
1,1,1-Trichloroethane	<0.190		20.0	18.82		ug/L		94	52 - 130	5	20
1,1,2,2-Tetrachloroethane	<0.470		20.0	15.38		ug/L		77	54 - 130	2	20
1,1,2-Trichloroethane	<0.450		20.0	15.87		ug/L		79	58 - 130	3	20
1,1-Dichloroethane	<0.220		20.0	17.00		ug/L		85	49 - 130	5	20
1,1-Dichloroethene	<0.560		20.0	17.28		ug/L		86	37 - 132	7	26
1,2,3-Trichloropropane	<0.590		20.0	16.09		ug/L		80	49 - 130	0	26
1,2-Dibromo-3-Chloropropane	<1.20		20.0	15.37		ug/L		77	38 - 150	2	20
1,2-Dibromoethane (EDB)	<0.340		20.0	17.36		ug/L		87	60 - 130	4	20
1,2-Dichlorobenzene	<0.370		20.0	16.42		ug/L		82	59 - 130	2	20
1,2-Dichloroethane	<0.390		20.0	17.70		ug/L		89	51 - 130	3	20
1,2-Dichloropropane	<0.270		20.0	17.47		ug/L		87	57 - 130	5	20
1,4-Dichlorobenzene	<0.230		20.0	16.37		ug/L		82	57 - 130	1	20
2-Butanone (MEK)	<2.10		40.0	31.17		ug/L		78	38 - 150	3	20

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 310-282049-6 MSD
Matrix: Water
Analysis Batch: 423506

Client Sample ID: OW-113B
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2-Hexanone	<2.00		40.0	30.73		ug/L		77	46 - 140	5	20
4-Methyl-2-pentanone (MIBK)	<2.10		40.0	30.69		ug/L		77	47 - 139	3	20
Acetone	<3.10		40.0	28.91		ug/L		72	31 - 150	2	29
Acrylonitrile	<2.20		200	166.3		ug/L		83	40 - 150	0	20
Benzene	<0.220		20.0	17.75		ug/L		89	46 - 130	6	20
Bromochloromethane	<0.540		20.0	19.19		ug/L		96	57 - 130	5	20
Bromodichloromethane	<0.390		20.0	17.72		ug/L		89	57 - 130	1	20
Bromoform	<0.780		20.0	16.03		ug/L		80	44 - 130	2	20
Carbon disulfide	<0.450		20.0	18.06		ug/L		90	38 - 135	12	30
Carbon tetrachloride	<0.650		20.0	20.34		ug/L		102	45 - 132	4	20
Chlorobenzene	<0.400		20.0	16.36		ug/L		82	59 - 130	3	20
Chlorodibromomethane	<0.750		20.0	17.07		ug/L		85	54 - 130	1	20
Chloroform	<1.30		20.0	18.04		ug/L		90	51 - 130	2	20
cis-1,2-Dichloroethene	<0.210		20.0	17.23		ug/L		86	45 - 130	5	20
cis-1,3-Dichloropropene	<0.250		20.0	17.52		ug/L		88	53 - 130	3	20
Dibromomethane	<0.330		20.0	17.34		ug/L		87	59 - 130	3	20
Ethylbenzene	<0.310		20.0	16.65		ug/L		83	45 - 130	3	20
Iodomethane	<7.00		20.0	18.39		ug/L		92	10 - 150	14	35
Methylene Chloride	<1.70		20.0	17.57		ug/L		88	37 - 150	6	24
Styrene	<0.370		20.0	16.95		ug/L		85	47 - 130	2	20
Tetrachloroethene	<0.480		20.0	17.49		ug/L		87	47 - 130	1	20
Toluene	<0.430		20.0	17.25		ug/L		86	51 - 130	3	20
trans-1,2-Dichloroethene	<0.270		20.0	18.04		ug/L		90	48 - 130	9	22
trans-1,3-Dichloropropene	<0.560		20.0	17.08		ug/L		85	50 - 130	2	20
trans-1,4-Dichloro-2-butene	<1.10		20.0	15.62		ug/L		78	26 - 150	2	23
Trichloroethene	<0.430		20.0	18.15		ug/L		91	51 - 130	5	20
Vinyl acetate	<2.50		40.0	37.87		ug/L		95	29 - 150	1	23
Xylenes, Total	<0.400		40.0	33.90		ug/L		85	43 - 130	5	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*102*		*73 - 130*
Toluene-d8 (Surr)	*100*		*80 - 120*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 310-422930/1-A
Matrix: Water
Analysis Batch: 423326

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 422930

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4,5-Tetrachlorobenzene	<0.540		10.0	0.540	ug/L		05/29/24 07:35	06/03/24 20:40	1
1,3-Dinitrobenzene	<3.20		10.0	3.20	ug/L		05/29/24 07:35	06/03/24 20:40	1
2,3,4,6-Tetrachlorophenol	<5.30		10.0	5.30	ug/L		05/29/24 07:35	06/03/24 20:40	1
2,4,5-Trichlorophenol	<5.30		10.0	5.30	ug/L		05/29/24 07:35	06/03/24 20:40	1
2,4,6-Trichlorophenol	<5.00		10.0	5.00	ug/L		05/29/24 07:35	06/03/24 20:40	1
2,4-Dichlorophenol	<0.850		10.0	0.850	ug/L		05/29/24 07:35	06/03/24 20:40	1
2,4-Dimethylphenol	<0.580		10.0	0.580	ug/L		05/29/24 07:35	06/03/24 20:40	1
2,4-Dinitrophenol	<13.0		20.0	13.0	ug/L		05/29/24 07:35	06/03/24 20:40	1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 310-422930/1-A
Matrix: Water
Analysis Batch: 423326

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 422930

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-Dinitrotoluene	<6.40		10.0	6.40	ug/L		05/29/24 07:35	06/03/24 20:40	1
2,6-Dichlorophenol	<0.690		10.0	0.690	ug/L		05/29/24 07:35	06/03/24 20:40	1
2,6-Dinitrotoluene	<0.520		10.0	0.520	ug/L		05/29/24 07:35	06/03/24 20:40	1
2-Chloronaphthalene	<0.640		10.0	0.640	ug/L		05/29/24 07:35	06/03/24 20:40	1
2-Chlorophenol	<0.540		10.0	0.540	ug/L		05/29/24 07:35	06/03/24 20:40	1
2-Methylnaphthalene	<0.590		10.0	0.590	ug/L		05/29/24 07:35	06/03/24 20:40	1
2-Methylphenol	<0.650		10.0	0.650	ug/L		05/29/24 07:35	06/03/24 20:40	1
2-Nitroaniline	<5.90		10.0	5.90	ug/L		05/29/24 07:35	06/03/24 20:40	1
2-Nitrophenol	<6.80		10.0	6.80	ug/L		05/29/24 07:35	06/03/24 20:40	1
3,3'-Dichlorobenzidine	<1.40		10.0	1.40	ug/L		05/29/24 07:35	06/03/24 20:40	1
3-Nitroaniline	<2.70		10.0	2.70	ug/L		05/29/24 07:35	06/03/24 20:40	1
4,6-Dinitro-2-methylphenol	<6.90		10.0	6.90	ug/L		05/29/24 07:35	06/03/24 20:40	1
4-Bromophenyl phenyl ether	<0.700		10.0	0.700	ug/L		05/29/24 07:35	06/03/24 20:40	1
4-Chloro-3-methylphenol	<0.840		10.0	0.840	ug/L		05/29/24 07:35	06/03/24 20:40	1
4-Chloroaniline	<0.620		10.0	0.620	ug/L		05/29/24 07:35	06/03/24 20:40	1
4-Chlorophenyl phenyl ether	<0.690		10.0	0.690	ug/L		05/29/24 07:35	06/03/24 20:40	1
Methylphenol, 3 & 4	<0.700		10.0	0.700	ug/L		05/29/24 07:35	06/03/24 20:40	1
4-Nitroaniline	<1.30		10.0	1.30	ug/L		05/29/24 07:35	06/03/24 20:40	1
4-Nitrophenol	<7.60		10.0	7.60	ug/L		05/29/24 07:35	06/03/24 20:40	1
Acenaphthene	<0.640		10.0	0.640	ug/L		05/29/24 07:35	06/03/24 20:40	1
Acenaphthylene	<0.720		10.0	0.720	ug/L		05/29/24 07:35	06/03/24 20:40	1
Acetophenone	<0.690		10.0	0.690	ug/L		05/29/24 07:35	06/03/24 20:40	1
Anthracene	<0.870		10.0	0.870	ug/L		05/29/24 07:35	06/03/24 20:40	1
Benzo[a]anthracene	<0.850		10.0	0.850	ug/L		05/29/24 07:35	06/03/24 20:40	1
Benzo[a]pyrene	<8.10		10.0	8.10	ug/L		05/29/24 07:35	06/03/24 20:40	1
Benzo[b]fluoranthene	<4.90		10.0	4.90	ug/L		05/29/24 07:35	06/03/24 20:40	1
Benzo[g,h,i]perylene	<6.30		10.0	6.30	ug/L		05/29/24 07:35	06/03/24 20:40	1
Benzo[k]fluoranthene	<2.20		10.0	2.20	ug/L		05/29/24 07:35	06/03/24 20:40	1
Benzyl alcohol	<1.30		10.0	1.30	ug/L		05/29/24 07:35	06/03/24 20:40	1
Bis(2-chloroethoxy)methane	<0.760		10.0	0.760	ug/L		05/29/24 07:35	06/03/24 20:40	1
Bis(2-chloroethyl)ether	<0.820		10.0	0.820	ug/L		05/29/24 07:35	06/03/24 20:40	1
bis (2-chloroisopropyl) ether	<0.540		10.0	0.540	ug/L		05/29/24 07:35	06/03/24 20:40	1
Bis(2-ethylhexyl) phthalate	<5.50		10.0	5.50	ug/L		05/29/24 07:35	06/03/24 20:40	1
Butyl benzyl phthalate	<5.40		10.0	5.40	ug/L		05/29/24 07:35	06/03/24 20:40	1
Chrysene	<0.870		10.0	0.870	ug/L		05/29/24 07:35	06/03/24 20:40	1
Dibenzo(a,h)anthracene	<3.90		10.0	3.90	ug/L		05/29/24 07:35	06/03/24 20:40	1
Dibenzofuran	<0.740		10.0	0.740	ug/L		05/29/24 07:35	06/03/24 20:40	1
Diethyl phthalate	<1.70		10.0	1.70	ug/L		05/29/24 07:35	06/03/24 20:40	1
Dimethyl phthalate	<1.00		10.0	1.00	ug/L		05/29/24 07:35	06/03/24 20:40	1
Di-n-butyl phthalate	<5.60		10.0	5.60	ug/L		05/29/24 07:35	06/03/24 20:40	1
Di-n-octyl phthalate	<7.00		20.0	7.00	ug/L		05/29/24 07:35	06/03/24 20:40	1
Diphenylamine	<6.00		10.0	6.00	ug/L		05/29/24 07:35	06/03/24 20:40	1
Fluoranthene	<1.70		10.0	1.70	ug/L		05/29/24 07:35	06/03/24 20:40	1
Fluorene	<0.790		10.0	0.790	ug/L		05/29/24 07:35	06/03/24 20:40	1
Hexachlorobenzene	<0.700		10.0	0.700	ug/L		05/29/24 07:35	06/03/24 20:40	1
Hexachlorobutadiene	<0.860		10.0	0.860	ug/L		05/29/24 07:35	06/03/24 20:40	1
Hexachlorocyclopentadiene	<5.10		10.0	5.10	ug/L		05/29/24 07:35	06/03/24 20:40	1
Hexachloroethane	<0.970		10.0	0.970	ug/L		05/29/24 07:35	06/03/24 20:40	1
Indeno[1,2,3-cd]pyrene	<4.20		10.0	4.20	ug/L		05/29/24 07:35	06/03/24 20:40	1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 310-422930/1-A
Matrix: Water
Analysis Batch: 423326

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 422930

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Isophorone	<0.930		10.0	0.930	ug/L		05/29/24 07:35	06/03/24 20:40	1
Nitrobenzene	<0.800		10.0	0.800	ug/L		05/29/24 07:35	06/03/24 20:40	1
N-Nitrosodimethylamine	<0.720		10.0	0.720	ug/L		05/29/24 07:35	06/03/24 20:40	1
N-Nitrosodi-n-propylamine	<0.920		10.0	0.920	ug/L		05/29/24 07:35	06/03/24 20:40	1
N-Nitrosodiphenylamine	<0.750		10.0	0.750	ug/L		05/29/24 07:35	06/03/24 20:40	1
Pentachlorophenol	<9.60		10.0	9.60	ug/L		05/29/24 07:35	06/03/24 20:40	1
Phenanthrene	<0.790		10.0	0.790	ug/L		05/29/24 07:35	06/03/24 20:40	1
Phenol	<1.10		10.0	1.10	ug/L		05/29/24 07:35	06/03/24 20:40	1
Pyrene	<0.790		10.0	0.790	ug/L		05/29/24 07:35	06/03/24 20:40	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorophenol (Surr)	*81*		*25 - 110*	*05/29/24 07:35*	*06/03/24 20:40*	*1*
Phenol-d5 (Surr)	*64*		*21 - 110*	*05/29/24 07:35*	*06/03/24 20:40*	*1*
Nitrobenzene-d5 (Surr)	*109*		*45 - 129*	*05/29/24 07:35*	*06/03/24 20:40*	*1*
2-Fluorobiphenyl (Surr)	*90*		*39 - 118*	*05/29/24 07:35*	*06/03/24 20:40*	*1*
2,4,6-Tribromophenol (Surr)	*88*		*27 - 136*	*05/29/24 07:35*	*06/03/24 20:40*	*1*
Terphenyl-d14 (Surr)	*96*		*12 - 144*	*05/29/24 07:35*	*06/03/24 20:40*	*1*

Lab Sample ID: MB 310-422930/1-A
Matrix: Water
Analysis Batch: 423476

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 422930

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	<2.30		10.0	2.30	ug/L		05/29/24 07:35	06/04/24 15:23	1
1,4-Naphthoquinone	<3.60		10.0	3.60	ug/L		05/29/24 07:35	06/04/24 15:23	1
1,4-phenylenediamine	<1.90		10.0	1.90	ug/L		05/29/24 07:35	06/04/24 15:23	1
1-Naphthylamine	<2.50		10.0	2.50	ug/L		05/29/24 07:35	06/04/24 15:23	1
2-Acetylaminofluorene	<2.70		10.0	2.70	ug/L		05/29/24 07:35	06/04/24 15:23	1
2-Naphthylamine	<2.10		10.0	2.10	ug/L		05/29/24 07:35	06/04/24 15:23	1
3,3'-Dimethylbenzidine	<1.50		10.0	1.50	ug/L		05/29/24 07:35	06/04/24 15:23	1
3-Methylcholanthrene	<0.320		10.0	0.320	ug/L		05/29/24 07:35	06/04/24 15:23	1
4-Aminobiphenyl	<2.20		10.0	2.20	ug/L		05/29/24 07:35	06/04/24 15:23	1
5-Nitro-o-toluidine	<2.80		10.0	2.80	ug/L		05/29/24 07:35	06/04/24 15:23	1
7,12-Dimethylbenz(a)anthracene	<1.90		10.0	1.90	ug/L		05/29/24 07:35	06/04/24 15:23	1
Chlorobenzilate	<3.60		10.0	3.60	ug/L		05/29/24 07:35	06/04/24 15:23	1
Diallate	<4.00		10.0	4.00	ug/L		05/29/24 07:35	06/04/24 15:23	1
Dimethoate	<3.60		10.0	3.60	ug/L		05/29/24 07:35	06/04/24 15:23	1
Dinoseb	<2.40		10.0	2.40	ug/L		05/29/24 07:35	06/04/24 15:23	1
Disulfoton	<2.40		10.0	2.40	ug/L		05/29/24 07:35	06/04/24 15:23	1
Ethyl methanesulfonate	<3.60		10.0	3.60	ug/L		05/29/24 07:35	06/04/24 15:23	1
Ethyl Parathion	<2.20		10.0	2.20	ug/L		05/29/24 07:35	06/04/24 15:23	1
Famphur	<3.80		10.0	3.80	ug/L		05/29/24 07:35	06/04/24 15:23	1
Hexachloropropene	<2.60		10.0	2.60	ug/L		05/29/24 07:35	06/04/24 15:23	1
Isodrin	<4.70		10.0	4.70	ug/L		05/29/24 07:35	06/04/24 15:23	1
Isosafrole	<2.30		10.0	2.30	ug/L		05/29/24 07:35	06/04/24 15:23	1
Kepone	<1.00		10.0	1.00	ug/L		05/29/24 07:35	06/04/24 15:23	1
Methapyrilene	<0.760		10.0	0.760	ug/L		05/29/24 07:35	06/04/24 15:23	1
Methyl methanesulfonate	<3.30		10.0	3.30	ug/L		05/29/24 07:35	06/04/24 15:23	1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 310-422930/1-A
Matrix: Water
Analysis Batch: 423476

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 422930

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl parathion	<2.30		10.0	2.30	ug/L		05/29/24 07:35	06/04/24 15:23	1
N-Nitrosodiethylamine	<3.40		10.0	3.40	ug/L		05/29/24 07:35	06/04/24 15:23	1
N-Nitrosodi-n-butylamine	<3.90		10.0	3.90	ug/L		05/29/24 07:35	06/04/24 15:23	1
N-Nitrosomethylethylamine	<4.90		10.0	4.90	ug/L		05/29/24 07:35	06/04/24 15:23	1
N-Nitrosopiperidine	<2.70		10.0	2.70	ug/L		05/29/24 07:35	06/04/24 15:23	1
N-Nitrosopyrrolidine	<3.60		10.0	3.60	ug/L		05/29/24 07:35	06/04/24 15:23	1
o,o',o''-Triethylphosphorothioate	<3.20		10.0	3.20	ug/L		05/29/24 07:35	06/04/24 15:23	1
o-Toluidine	<2.90		10.0	2.90	ug/L		05/29/24 07:35	06/04/24 15:23	1
p-Dimethylamino azobenzene	<2.20		10.0	2.20	ug/L		05/29/24 07:35	06/04/24 15:23	1
Pentachlorobenzene	<2.80		10.0	2.80	ug/L		05/29/24 07:35	06/04/24 15:23	1
Pentachloronitrobenzene	<5.80		10.0	5.80	ug/L		05/29/24 07:35	06/04/24 15:23	1
Phenacetin	<1.90		10.0	1.90	ug/L		05/29/24 07:35	06/04/24 15:23	1
Phorate	<3.20		10.0	3.20	ug/L		05/29/24 07:35	06/04/24 15:23	1
Pronamide	<2.70		10.0	2.70	ug/L		05/29/24 07:35	06/04/24 15:23	1
Safrole	<2.80		10.0	2.80	ug/L		05/29/24 07:35	06/04/24 15:23	1
Thionazin	<3.50		10.0	3.50	ug/L		05/29/24 07:35	06/04/24 15:23	1

Lab Sample ID: LCS 310-422930/2-A
Matrix: Water
Analysis Batch: 423326

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 422930

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2,4,5-Tetrachlorobenzene	100	80.62		ug/L		81	36 - 110
1,3-Dinitrobenzene	100	91.77		ug/L		92	45 - 138
2,3,4,6-Tetrachlorophenol	100	94.93		ug/L		95	33 - 134
2,4,5-Trichlorophenol	100	95.06		ug/L		95	35 - 133
2,4,6-Trichlorophenol	100	102.6		ug/L		103	28 - 139
2,4-Dichlorophenol	100	96.41		ug/L		96	41 - 124
2,4-Dimethylphenol	100	94.72		ug/L		95	31 - 142
2,4-Dinitrophenol	200	97.66		ug/L		49	10 - 138
2,4-Dinitrotoluene	100	88.36		ug/L		88	47 - 137
2,6-Dichlorophenol	100	96.03		ug/L		96	30 - 130
2,6-Dinitrotoluene	100	100.2		ug/L		100	51 - 130
2-Chloronaphthalene	100	89.99		ug/L		90	37 - 110
2-Chlorophenol	100	89.26		ug/L		89	44 - 117
2-Methylnaphthalene	100	80.10		ug/L		80	33 - 110
2-Methylphenol	100	87.26		ug/L		87	47 - 118
2-Nitroaniline	100	101.7		ug/L		102	50 - 135
2-Nitrophenol	100	105.7		ug/L		106	41 - 129
3-Nitroaniline	100	94.44		ug/L		94	42 - 139
4,6-Dinitro-2-methylphenol	200	162.5		ug/L		81	22 - 143
4-Bromophenyl phenyl ether	100	95.80		ug/L		96	45 - 119
4-Chloro-3-methylphenol	100	93.27		ug/L		93	49 - 130
4-Chloroaniline	100	93.86		ug/L		94	21 - 139
4-Chlorophenyl phenyl ether	100	84.59		ug/L		85	44 - 116
Methylphenol, 3 & 4	100	85.48		ug/L		85	46 - 117
4-Nitroaniline	100	97.23		ug/L		97	31 - 145
4-Nitrophenol	200	113.0		ug/L		56	18 - 110
Acenaphthene	100	98.94		ug/L		99	43 - 110

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 310-422930/2-A
Matrix: Water
Analysis Batch: 423326

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 422930

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Acenaphthylene	100	89.66		ug/L		90	40 - 110
Acetophenone	100	84.23		ug/L		84	48 - 119
Anthracene	100	94.97		ug/L		95	51 - 120
Benzo[a]anthracene	100	95.99		ug/L		96	51 - 123
Benzo[a]pyrene	100	102.4		ug/L		102	48 - 125
Benzo[b]fluoranthene	100	118.5		ug/L		118	49 - 129
Benzo[g,h,i]perylene	100	101.8		ug/L		102	43 - 139
Benzo[k]fluoranthene	100	92.00		ug/L		92	47 - 130
Benzyl alcohol	100	95.15		ug/L		95	39 - 128
Bis(2-chloroethoxy)methane	100	91.76		ug/L		92	48 - 121
Bis(2-chloroethyl)ether	100	85.65		ug/L		86	43 - 123
bis (2-chloroisopropyl) ether	100	78.80		ug/L		79	34 - 123
Bis(2-ethylhexyl) phthalate	100	101.4		ug/L		101	43 - 143
Butyl benzyl phthalate	100	101.7		ug/L		102	46 - 135
Chrysene	100	98.68		ug/L		99	51 - 125
Dibenzo(a,h)anthracene	100	116.3		ug/L		116	38 - 149
Dibenzofuran	100	85.55		ug/L		86	45 - 112
Diethyl phthalate	100	85.44		ug/L		85	43 - 135
Dimethyl phthalate	100	89.61		ug/L		90	43 - 129
Di-n-butyl phthalate	100	98.25		ug/L		98	50 - 133
Di-n-octyl phthalate	100	112.8		ug/L		113	34 - 150
Fluoranthene	100	99.38		ug/L		99	47 - 128
Fluorene	100	92.28		ug/L		92	45 - 119
Hexachlorobenzene	100	97.55		ug/L		98	48 - 119
Hexachlorobutadiene	100	75.18		ug/L		75	32 - 110
Hexachlorocyclopentadiene	100	39.69		ug/L		40	10 - 110
Hexachloroethane	100	65.44		ug/L		65	31 - 110
Indeno[1,2,3-cd]pyrene	100	117.3		ug/L		117	37 - 150
Isophorone	100	93.45		ug/L		93	50 - 125
Nitrobenzene	100	97.41		ug/L		97	47 - 116
N-Nitrosodimethylamine	100	81.30		ug/L		81	37 - 110
N-Nitrosodi-n-propylamine	100	92.89		ug/L		93	45 - 130
N-Nitrosodiphenylamine	100	100.5		ug/L		100	49 - 121
Pentachlorophenol	200	167.1		ug/L		84	26 - 133
Phenanthrene	100	92.46		ug/L		92	51 - 117
Phenol	100	64.68		ug/L		65	29 - 110
Pyrene	100	91.40		ug/L		91	48 - 127

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorophenol (Surr)	*76*		*25 - 110*
Phenol-d5 (Surr)	*59*		*21 - 110*
Nitrobenzene-d5 (Surr)	*99*		*45 - 129*
2-Fluorobiphenyl (Surr)	*86*		*39 - 118*
2,4,6-Tribromophenol (Surr)	*93*		*27 - 136*
Terphenyl-d14 (Surr)	*95*		*12 - 144*

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 310-422930/2-A
Matrix: Water
Analysis Batch: 423476

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 422930

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,3,5-Trinitrobenzene	64.0	58.26		ug/L		91	39 - 144
1,4-Naphthoquinone	64.0	62.32		ug/L		97	37 - 149
1,4-phenylenediamine	64.0	<1.90	*-	ug/L		-1	20 - 120
1-Naphthylamine	64.0	40.86		ug/L		64	19 - 110
2-Acetylaminofluorene	64.0	66.19		ug/L		103	35 - 150
2-Naphthylamine	64.0	47.60		ug/L		74	18 - 127
3,3'-Dimethylbenzidine	64.0	38.89		ug/L		61	10 - 150
3-Methylcholanthrene	64.0	65.19		ug/L		102	43 - 150
4-Aminobiphenyl	64.0	51.74		ug/L		81	24 - 138
5-Nitro-o-toluidine	64.0	66.00		ug/L		103	47 - 145
7,12-Dimethylbenz(a)anthracene	64.0	62.71		ug/L		98	51 - 129
Chlorobenzilate	64.0	61.87		ug/L		97	52 - 138
Diallate	64.0	54.82		ug/L		86	42 - 141
Dimethoate	64.0	79.59		ug/L		124	51 - 150
Dinoseb	64.0	79.32		ug/L		124	25 - 146
Disulfoton	64.0	51.71		ug/L		81	54 - 131
Ethyl methanesulfonate	64.0	52.70		ug/L		82	48 - 120
Ethyl Parathion	64.0	69.44		ug/L		109	52 - 149
Famphur	64.0	151.4	E *+	ug/L		237	44 - 150
Hexachloropropene	64.0	31.22		ug/L		49	10 - 110
Isodrin	64.0	62.48		ug/L		98	52 - 125
Methapyrilene	64.0	13.65		ug/L		21	10 - 110
Methyl methanesulfonate	64.0	37.80		ug/L		59	36 - 110
Methyl parathion	64.0	78.57		ug/L		123	50 - 150
N-Nitrosodiethylamine	64.0	56.89		ug/L		89	47 - 138
N-Nitrosodi-n-butylamine	64.0	63.59		ug/L		99	52 - 142
N-Nitrosomethylethylamine	64.0	55.77		ug/L		87	54 - 123
N-Nitrosopiperidine	64.0	57.60		ug/L		90	60 - 127
N-Nitrosopyrrolidine	64.0	59.59		ug/L		93	56 - 143
o,o',o''-Triethylphosphorothioate	64.0	63.60		ug/L		99	45 - 113
o-Toluidine	64.0	55.02		ug/L		86	24 - 142
p-Dimethylamino azobenzene	64.0	66.46		ug/L		104	42 - 138
Pentachlorobenzene	64.0	51.42		ug/L		80	33 - 110
Pentachloronitrobenzene	64.0	68.17		ug/L		107	65 - 127
Phenacetin	64.0	66.30		ug/L		104	56 - 146
Phorate	64.0	51.04		ug/L		80	57 - 135
Pronamide	64.0	65.20		ug/L		102	61 - 144
Safrole	64.0	59.88		ug/L		94	34 - 110
Thionazin	64.0	64.19		ug/L		100	52 - 147

Lab Sample ID: LCSD 310-422930/3-A
Matrix: Water
Analysis Batch: 423326

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 422930

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2,4,5-Tetrachlorobenzene	100	74.66		ug/L		75	36 - 110	8	35
1,3-Dinitrobenzene	100	87.93		ug/L		88	45 - 138	4	35
2,3,4,6-Tetrachlorophenol	100	88.29		ug/L		88	33 - 134	7	35
2,4,5-Trichlorophenol	100	88.59		ug/L		89	35 - 133	7	35

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 310-422930/3-A
Matrix: Water
Analysis Batch: 423326

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 422930

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,4,6-Trichlorophenol			100	93.80		ug/L		94	28 - 139	9	35
2,4-Dichlorophenol			100	89.72		ug/L		90	41 - 124	7	35
2,4-Dimethylphenol			100	88.39		ug/L		88	31 - 142	7	35
2,4-Dinitrophenol			200	89.93		ug/L		45	10 - 138	8	35
2,4-Dinitrotoluene			100	83.75		ug/L		84	47 - 137	5	35
2,6-Dichlorophenol			100	87.81		ug/L		88	30 - 130	9	35
2,6-Dinitrotoluene			100	91.32		ug/L		91	51 - 130	9	35
2-Chloronaphthalene			100	81.95		ug/L		82	37 - 110	9	35
2-Chlorophenol			100	81.54		ug/L		82	44 - 117	9	35
2-Methylnaphthalene			100	70.84		ug/L		71	33 - 110	12	35
2-Methylphenol			100	81.06		ug/L		81	47 - 118	7	35
2-Nitroaniline			100	96.76		ug/L		97	50 - 135	5	35
2-Nitrophenol			100	98.80		ug/L		99	41 - 129	7	35
3-Nitroaniline			100	92.01		ug/L		92	42 - 139	3	35
4,6-Dinitro-2-methylphenol			200	157.0		ug/L		79	22 - 143	3	35
4-Bromophenyl phenyl ether			100	90.29		ug/L		90	45 - 119	6	35
4-Chloro-3-methylphenol			100	88.22		ug/L		88	49 - 130	6	35
4-Chloroaniline			100	91.95		ug/L		92	21 - 139	2	35
4-Chlorophenyl phenyl ether			100	78.59		ug/L		79	44 - 116	7	35
Methylphenol, 3 & 4			100	80.29		ug/L		80	46 - 117	6	35
4-Nitroaniline			100	95.40		ug/L		95	31 - 145	2	35
4-Nitrophenol			200	109.9		ug/L		55	18 - 110	3	35
Acenaphthene			100	89.51		ug/L		90	43 - 110	10	35
Acenaphthylene			100	79.99		ug/L		80	40 - 110	11	35
Acetophenone			100	76.96		ug/L		77	48 - 119	9	35
Anthracene			100	91.52		ug/L		92	51 - 120	4	35
Benzo[a]anthracene			100	93.92		ug/L		94	51 - 123	2	35
Benzo[a]pyrene			100	97.90		ug/L		98	48 - 125	4	35
Benzo[b]fluoranthene			100	112.4		ug/L		112	49 - 129	5	35
Benzo[g,h,i]perylene			100	98.28		ug/L		98	43 - 139	4	35
Benzo[k]fluoranthene			100	88.45		ug/L		88	47 - 130	4	35
Benzyl alcohol			100	87.80		ug/L		88	39 - 128	8	35
Bis(2-chloroethoxy)methane			100	85.42		ug/L		85	48 - 121	7	35
Bis(2-chloroethyl)ether			100	78.10		ug/L		78	43 - 123	9	35
bis (2-chloroisopropyl) ether			100	71.41		ug/L		71	34 - 123	10	35
Bis(2-ethylhexyl) phthalate			100	95.91		ug/L		96	43 - 143	6	35
Butyl benzyl phthalate			100	96.85		ug/L		97	46 - 135	5	35
Chrysene			100	93.08		ug/L		93	51 - 125	6	35
Dibenzo(a,h)anthracene			100	112.8		ug/L		113	38 - 149	3	35
Dibenzofuran			100	78.61		ug/L		79	45 - 112	8	35
Diethyl phthalate			100	81.13		ug/L		81	43 - 135	5	35
Dimethyl phthalate			100	84.26		ug/L		84	43 - 129	6	35
Di-n-butyl phthalate			100	93.76		ug/L		94	50 - 133	5	35
Di-n-octyl phthalate			100	107.9		ug/L		108	34 - 150	4	35
Fluoranthene			100	99.52		ug/L		100	47 - 128	0	35
Fluorene			100	85.84		ug/L		86	45 - 119	7	35
Hexachlorobenzene			100	90.99		ug/L		91	48 - 119	7	35
Hexachlorobutadiene			100	72.42		ug/L		72	32 - 110	4	35
Hexachlorocyclopentadiene			100	32.78		ug/L		33	10 - 110	19	35

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 310-422930/3-A
Matrix: Water
Analysis Batch: 423326

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 422930

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexachloroethane			100	62.27		ug/L		62	31 - 110	5	35
Indeno[1,2,3-cd]pyrene			100	112.4		ug/L		112	37 - 150	4	35
Isophorone			100	88.39		ug/L		88	50 - 125	6	35
Nitrobenzene			100	89.95		ug/L		90	47 - 116	8	35
N-Nitrosodimethylamine			100	78.07		ug/L		78	37 - 110	4	35
N-Nitrosodi-n-propylamine			100	85.14		ug/L		85	45 - 130	9	35
N-Nitrosodiphenylamine			100	94.00		ug/L		94	49 - 121	7	35
Pentachlorophenol			200	157.5		ug/L		79	26 - 133	6	35
Phenanthrene			100	90.00		ug/L		90	51 - 117	3	35
Phenol			100	61.16		ug/L		61	29 - 110	6	35
Pyrene			100	85.87		ug/L		86	48 - 127	6	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorophenol (Surr)	*73*		*25 - 110*
Phenol-d5 (Surr)	*57*		*21 - 110*
Nitrobenzene-d5 (Surr)	*95*		*45 - 129*
2-Fluorobiphenyl (Surr)	*79*		*39 - 118*
2,4,6-Tribromophenol (Surr)	*92*		*27 - 136*
Terphenyl-d14 (Surr)	*92*		*12 - 144*

Lab Sample ID: LCSD 310-422930/3-A
Matrix: Water
Analysis Batch: 423476

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 422930

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,3,5-Trinitrobenzene			64.0	58.07		ug/L		91	39 - 144	0	35
1,4-Naphthoquinone			64.0	60.82		ug/L		95	37 - 149	2	29
1,4-phenylenediamine			64.0	<1.90	*- *1	ug/L		-0.8	20 - 120	36	35
1-Naphthylamine			64.0	42.67		ug/L		67	19 - 110	4	35
2-Acetylaminofluorene			64.0	61.70		ug/L		96	35 - 150	7	28
2-Naphthylamine			64.0	46.78		ug/L		73	18 - 127	2	35
3,3'-Dimethylbenzidine			64.0	61.08	*1	ug/L		95	10 - 150	44	35
3-Methylcholanthrene			64.0	58.24		ug/L		91	43 - 150	11	32
4-Aminobiphenyl			64.0	50.45		ug/L		79	24 - 138	3	35
5-Nitro-o-toluidine			64.0	62.27		ug/L		97	47 - 145	6	31
7,12-Dimethylbenz(a)anthracene			64.0	58.76		ug/L		92	51 - 129	7	28
Chlorobenzilate			64.0	60.44		ug/L		94	52 - 138	2	28
Diallate			64.0	52.03		ug/L		81	42 - 141	5	35
Dimethoate			64.0	74.87		ug/L		117	51 - 150	6	26
Dinoseb			64.0	78.25		ug/L		122	25 - 146	1	35
Disulfoton			64.0	48.78		ug/L		76	54 - 131	6	24
Ethyl methanesulfonate			64.0	52.04		ug/L		81	48 - 120	1	27
Ethyl Parathion			64.0	65.12		ug/L		102	52 - 149	6	26
Famphur			64.0	128.9	E *+	ug/L		201	44 - 150	16	35
Hexachloropropene			64.0	30.38		ug/L		47	10 - 110	3	35
Isodrin			64.0	61.72		ug/L		96	52 - 125	1	26
Methapyrilene			64.0	33.96	*1	ug/L		53	10 - 110	85	35
Methyl methanesulfonate			64.0	36.19		ug/L		57	36 - 110	4	26

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 310-422930/3-A
Matrix: Water
Analysis Batch: 423476

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 422930

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Methyl parathion	64.0	75.88		ug/L		119	50 - 150	3	25
N-Nitrosodiethylamine	64.0	56.27		ug/L		88	47 - 138	1	26
N-Nitrosodi-n-butylamine	64.0	56.49		ug/L		88	52 - 142	12	27
N-Nitrosomethylethylamine	64.0	51.64		ug/L		81	54 - 123	8	26
N-Nitrosopiperidine	64.0	54.63		ug/L		85	60 - 127	5	26
N-Nitrosopyrrolidine	64.0	59.00		ug/L		92	56 - 143	1	25
o,o',o''-Triethylphosphorothioate	64.0	55.47		ug/L		87	45 - 113	14	33
o-Toluidine	64.0	55.43		ug/L		87	24 - 142	1	35
p-Dimethylamino azobenzene	64.0	62.67		ug/L		98	42 - 138	6	29
Pentachlorobenzene	64.0	47.92		ug/L		75	33 - 110	7	35
Pentachloronitrobenzene	64.0	64.84		ug/L		101	65 - 127	5	29
Phenacetin	64.0	62.66		ug/L		98	56 - 146	6	25
Phorate	64.0	48.47		ug/L		76	57 - 135	5	26
Pronamide	64.0	62.82		ug/L		98	61 - 144	4	27
Safrole	64.0	49.83		ug/L		78	34 - 110	18	35
Thionazin	64.0	61.54		ug/L		96	52 - 147	4	28

Method: 8015C - Nonhalogenated Organic using GC/FID (Direct Aqueous Injection)

Lab Sample ID: MB 310-422817/4
Matrix: Water
Analysis Batch: 422817

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetonitrile	<2600		10000	2600	ug/L			05/28/24 12:59	1
Isobutanol	<2400		10000	2400	ug/L			05/28/24 12:59	1

Lab Sample ID: LCS 310-422817/5
Matrix: Water
Analysis Batch: 422817

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Acetonitrile	113000	107300		ug/L		95	67 - 132
Isobutanol	104000	98140		ug/L		94	80 - 121

Method: 8081B - Organochlorine Pesticides (GC)

Lab Sample ID: MB 310-422933/1-A
Matrix: Water
Analysis Batch: 423446

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 422933

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	<0.0270		0.0640	0.0270	ug/L		05/29/24 07:55	06/04/24 16:36	1
4,4'-DDE	<0.0270		0.0640	0.0270	ug/L		05/29/24 07:55	06/04/24 16:36	1
4,4'-DDT	<0.0420		0.0640	0.0420	ug/L		05/29/24 07:55	06/04/24 16:36	1
Aldrin	<0.0320		0.0640	0.0320	ug/L		05/29/24 07:55	06/04/24 16:36	1
alpha-BHC	<0.0290		0.0640	0.0290	ug/L		05/29/24 07:55	06/04/24 16:36	1
beta-BHC	<0.0370		0.0640	0.0370	ug/L		05/29/24 07:55	06/04/24 16:36	1
Chlordane (technical)	<0.810		2.00	0.810	ug/L		05/29/24 07:55	06/04/24 16:36	1
delta-BHC	<0.0270		0.0640	0.0270	ug/L		05/29/24 07:55	06/04/24 16:36	1

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: MB 310-422933/1-A
Matrix: Water
Analysis Batch: 423446

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 422933

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dieldrin	<0.0260		0.0640	0.0260	ug/L		05/29/24 07:55	06/04/24 16:36	1
Endosulfan I	<0.0330		0.0640	0.0330	ug/L		05/29/24 07:55	06/04/24 16:36	1
Endosulfan II	<0.0290		0.0640	0.0290	ug/L		05/29/24 07:55	06/04/24 16:36	1
Endosulfan sulfate	<0.0300		0.0640	0.0300	ug/L		05/29/24 07:55	06/04/24 16:36	1
Endrin	<0.0260		0.0640	0.0260	ug/L		05/29/24 07:55	06/04/24 16:36	1
Endrin aldehyde	<0.0290		0.0640	0.0290	ug/L		05/29/24 07:55	06/04/24 16:36	1
gamma-BHC (Lindane)	<0.0360		0.0640	0.0360	ug/L		05/29/24 07:55	06/04/24 16:36	1
Heptachlor	<0.0330		0.0640	0.0330	ug/L		05/29/24 07:55	06/04/24 16:36	1
Heptachlor epoxide	<0.0290		0.0640	0.0290	ug/L		05/29/24 07:55	06/04/24 16:36	1
Methoxychlor	<0.0410		0.0640	0.0410	ug/L		05/29/24 07:55	06/04/24 16:36	1
Toxaphene	<0.690		2.00	0.690	ug/L		05/29/24 07:55	06/04/24 16:36	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*81*		*10 - 136*	*05/29/24 07:55*	*06/04/24 16:36*	*1*
Tetrachloro-m-xylene (Surr)	*62*		*10 - 130*	*05/29/24 07:55*	*06/04/24 16:36*	*1*

Lab Sample ID: LCS 310-422933/2-A
Matrix: Water
Analysis Batch: 423446

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 422933

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
4,4'-DDD	1.00	0.9852		ug/L		99	36 - 149
4,4'-DDE	1.00	0.9159		ug/L		92	34 - 130
4,4'-DDT	1.00	1.076		ug/L		108	23 - 150
Aldrin	1.00	0.6097		ug/L		61	13 - 120
alpha-BHC	1.00	0.9943		ug/L		99	36 - 127
beta-BHC	1.00	1.016		ug/L		102	37 - 136
delta-BHC	1.00	1.005		ug/L		101	33 - 134
Dieldrin	1.00	1.009		ug/L		101	39 - 130
Endosulfan I	1.00	0.9430		ug/L		94	10 - 120
Endosulfan II	1.00	0.9579		ug/L		96	14 - 120
Endosulfan sulfate	1.00	1.036		ug/L		104	36 - 147
Endrin	1.00	1.027		ug/L		103	39 - 140
Endrin aldehyde	1.00	0.9107		ug/L		91	32 - 137
gamma-BHC (Lindane)	1.00	1.006		ug/L		101	36 - 132
Heptachlor	1.00	0.7881		ug/L		79	27 - 120
Heptachlor epoxide	1.00	1.006		ug/L		101	38 - 133
Methoxychlor	1.00	1.012		ug/L		101	10 - 150

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl (Surr)	*75*		*10 - 136*
Tetrachloro-m-xylene (Surr)	*67*		*10 - 130*

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: LCSD 310-422933/3-A
Matrix: Water
Analysis Batch: 423446

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 422933

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
4,4'-DDD			1.00	0.9680		ug/L		97	36 - 149	2	35
4,4'-DDE			1.00	0.8649		ug/L		86	34 - 130	6	35
4,4'-DDT			1.00	1.057		ug/L		106	23 - 150	2	35
Aldrin			1.00	0.5218		ug/L		52	13 - 120	16	35
alpha-BHC			1.00	0.9258		ug/L		93	36 - 127	7	35
beta-BHC			1.00	0.9711		ug/L		97	37 - 136	5	35
delta-BHC			1.00	0.9708		ug/L		97	33 - 134	3	35
Dieldrin			1.00	0.9818		ug/L		98	39 - 130	3	35
Endosulfan I			1.00	0.9096	p	ug/L		91	10 - 120	1	35
Endosulfan II			1.00	0.9414		ug/L		94	14 - 120	2	35
Endosulfan sulfate			1.00	1.021		ug/L		102	36 - 147	1	35
Endrin			1.00	1.001		ug/L		100	39 - 140	3	35
Endrin aldehyde			1.00	0.8859		ug/L		89	32 - 137	3	35
gamma-BHC (Lindane)			1.00	0.9438		ug/L		94	36 - 132	6	35
Heptachlor			1.00	0.6967		ug/L		70	27 - 120	12	35
Heptachlor epoxide			1.00	0.9677		ug/L		97	38 - 133	4	35
Methoxychlor			1.00	1.010		ug/L		101	10 - 150	0	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
DCB Decachlorobiphenyl (Surr)	*73*		*10 - 136*
Tetrachloro-m-xylene (Surr)	*54*		*10 - 130*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 310-422933/1-A
Matrix: Water
Analysis Batch: 423447

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 422933

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.170		0.800	0.170	ug/L		05/29/24 07:55	06/04/24 16:36	1
PCB-1221	<0.170		0.800	0.170	ug/L		05/29/24 07:55	06/04/24 16:36	1
PCB-1232	<0.170		0.800	0.170	ug/L		05/29/24 07:55	06/04/24 16:36	1
PCB-1242	<0.170		0.800	0.170	ug/L		05/29/24 07:55	06/04/24 16:36	1
PCB-1248	<0.110		0.800	0.110	ug/L		05/29/24 07:55	06/04/24 16:36	1
PCB-1254	<0.110		0.800	0.110	ug/L		05/29/24 07:55	06/04/24 16:36	1
PCB-1260	<0.110		0.800	0.110	ug/L		05/29/24 07:55	06/04/24 16:36	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*81*		*10 - 136*	*05/29/24 07:55*	*06/04/24 16:36*	*1*
Tetrachloro-m-xylene (Surr)	*62*		*10 - 130*	*05/29/24 07:55*	*06/04/24 16:36*	*1*

Lab Sample ID: LCS 310-422933/4-A
Matrix: Water
Analysis Batch: 423447

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 422933

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
PCB-1016			10.0	8.573		ug/L		86	30 - 133		
PCB-1260			10.0	9.241		ug/L		92	31 - 133		

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Lab Sample ID: LCS 310-422933/4-A
Matrix: Water
Analysis Batch: 423447

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 422933

Surrogate	LCS %Recovery	LCS Qualifier	Limits
DCB Decachlorobiphenyl (Surr)	81		10 - 136
Tetrachloro-m-xylene (Surr)	62		10 - 130

Lab Sample ID: LCSD 310-422933/5-A
Matrix: Water
Analysis Batch: 423447

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 422933

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
PCB-1260			10.0	7.914		ug/L		79	31 - 133	15	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
DCB Decachlorobiphenyl (Surr)	68		10 - 136
Tetrachloro-m-xylene (Surr)	44		10 - 130

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-422763/1-A
Matrix: Water
Analysis Batch: 423330

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 422763

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		05/28/24 09:00	05/31/24 18:23	1
Arsenic	<0.530		2.00	0.530	ug/L		05/28/24 09:00	05/31/24 18:23	1
Barium	<0.660		2.00	0.660	ug/L		05/28/24 09:00	05/31/24 18:23	1
Beryllium	<0.330		1.00	0.330	ug/L		05/28/24 09:00	05/31/24 18:23	1
Cadmium	<0.100		0.200	0.100	ug/L		05/28/24 09:00	05/31/24 18:23	1
Lead	<0.260		0.500	0.260	ug/L		05/28/24 09:00	05/31/24 18:23	1
Thallium	<0.570		1.00	0.570	ug/L		05/28/24 09:00	05/31/24 18:23	1

Lab Sample ID: MB 310-422763/1-A
Matrix: Water
Analysis Batch: 423570

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 422763

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.530		2.00	0.530	ug/L		05/28/24 09:00	06/04/24 17:16	1
Chromium	<1.20		5.00	1.20	ug/L		05/28/24 09:00	06/04/24 17:16	1
Cobalt	<0.170		0.500	0.170	ug/L		05/28/24 09:00	06/04/24 17:16	1
Copper	<1.80		5.00	1.80	ug/L		05/28/24 09:00	06/04/24 17:16	1
Nickel	<2.10		5.00	2.10	ug/L		05/28/24 09:00	06/04/24 17:16	1
Selenium	<1.40		5.00	1.40	ug/L		05/28/24 09:00	06/04/24 17:16	1
Silver	<0.500	^3+ ^1+	1.00	0.500	ug/L		05/28/24 09:00	06/04/24 17:16	1
Vanadium	<1.10		5.00	1.10	ug/L		05/28/24 09:00	06/04/24 17:16	1
Zinc	<9.70		20.0	9.70	ug/L		05/28/24 09:00	06/04/24 17:16	1
Tin	<2.30		5.00	2.30	ug/L		05/28/24 09:00	06/04/24 17:16	1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 310-422763/2-A
Matrix: Water
Analysis Batch: 423330

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 422763

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	200	207.2		ug/L		104	80 - 120
Arsenic	200	216.4		ug/L		108	80 - 120
Barium	100	105.3		ug/L		105	80 - 120
Beryllium	100	95.99		ug/L		96	80 - 120
Cadmium	100	91.87		ug/L		92	80 - 120
Lead	200	203.7		ug/L		102	80 - 120
Nickel	200	204.6		ug/L		102	80 - 120
Thallium	100	92.55		ug/L		93	80 - 120
Tin	200	187.6		ug/L		94	80 - 120

Lab Sample ID: LCS 310-422763/2-A
Matrix: Water
Analysis Batch: 423570

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 422763

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	200	218.1		ug/L		109	80 - 120
Chromium	100	104.0		ug/L		104	80 - 120
Cobalt	100	105.7		ug/L		106	80 - 120
Copper	200	207.6		ug/L		104	80 - 120
Selenium	400	380.8		ug/L		95	80 - 120
Silver	100	146.0	^3+ *+ ^1+	ug/L		146	80 - 120
Vanadium	100	102.0		ug/L		102	80 - 120
Zinc	200	198.0		ug/L		99	80 - 120

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 310-422881/1-A
Matrix: Water
Analysis Batch: 423023

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 422881

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.110		0.200	0.110	ug/L		05/28/24 13:59	05/29/24 14:52	1

Lab Sample ID: LCS 310-422881/2-A
Matrix: Water
Analysis Batch: 423023

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 422881

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	1.67	1.538		ug/L		92	80 - 120

Method: 9012B - Cyanide, Total andor Amenable

Lab Sample ID: MB 310-423077/1-A
Matrix: Water
Analysis Batch: 423153

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 423077

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	<3.50		10.0	3.50	ug/L		05/30/24 09:42	05/30/24 16:57	1

Method: 9012B - Cyanide, Total andor Amenable (Continued)

Lab Sample ID: LCS 310-423077/2-A
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 423153
Prep Batch: 423077

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	200	192.0		ug/L		96	90 - 110

Method: 9034 - Sulfide, Acid soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 240-614846/1-A
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 614874
Prep Batch: 614846

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.41		3.00	1.41	mg/L		05/30/24 07:53	05/30/24 09:40	1

Lab Sample ID: LCS 240-614846/2-A
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 614874
Prep Batch: 614846

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfide	8.67	9.067		mg/L		105	70 - 120

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: MB 310-422958/1
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 422958

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<3.70		5.00	3.70	mg/L			05/29/24 09:32	1

Lab Sample ID: LCS 310-422958/2
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 422958

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	104.0		mg/L		104	81 - 116

Lab Sample ID: MB 310-422966/1
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 422966

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<3.70		5.00	3.70	mg/L			05/29/24 10:13	1

Lab Sample ID: LCS 310-422966/2
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 422966

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	96.00		mg/L		96	81 - 116

GC/MS VOA

Analysis Batch: 422854

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282049-2	Trip Blank	Total/NA	Water	8260D	
310-282049-3	OW-226B	Total/NA	Water	8260D	
310-282049-4	OW-227B	Total/NA	Water	8260D	
MB 310-422854/5	Method Blank	Total/NA	Water	8260D	
LCS 310-422854/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-422854/7	Lab Control Sample	Total/NA	Water	8260D	

Analysis Batch: 422943

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282049-8	P-213C	Total/NA	Water	8260D	
310-282049-9	P-214CR	Total/NA	Water	8260D	
MB 310-422943/5	Method Blank	Total/NA	Water	8260D	
LCS 310-422943/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-422943/7	Lab Control Sample	Total/NA	Water	8260D	

Analysis Batch: 423506

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282049-5	Equipment Blank 3	Total/NA	Water	8260D	
310-282049-6	OW-113B	Total/NA	Water	8260D	
310-282049-7	Duplicate 5	Total/NA	Water	8260D	
MB 310-423506/5	Method Blank	Total/NA	Water	8260D	
LCS 310-423506/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-423506/7	Lab Control Sample	Total/NA	Water	8260D	
310-282049-6 MS	OW-113B	Total/NA	Water	8260D	
310-282049-6 MSD	OW-113B	Total/NA	Water	8260D	

GC/MS Semi VOA

Prep Batch: 422930

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282049-8	P-213C	Total/NA	Water	3510C	
MB 310-422930/1-A	Method Blank	Total/NA	Water	3510C	
LCS 310-422930/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 310-422930/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 423326

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282049-8	P-213C	Total/NA	Water	8270E	422930
MB 310-422930/1-A	Method Blank	Total/NA	Water	8270E	422930
LCS 310-422930/2-A	Lab Control Sample	Total/NA	Water	8270E	422930
LCSD 310-422930/3-A	Lab Control Sample Dup	Total/NA	Water	8270E	422930

Analysis Batch: 423476

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282049-8	P-213C	Total/NA	Water	8270E	422930
MB 310-422930/1-A	Method Blank	Total/NA	Water	8270E	422930
LCS 310-422930/2-A	Lab Control Sample	Total/NA	Water	8270E	422930
LCSD 310-422930/3-A	Lab Control Sample Dup	Total/NA	Water	8270E	422930

GC Semi VOA

Analysis Batch: 422817

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282049-8	P-213C	Total/NA	Water	8015C	
MB 310-422817/4	Method Blank	Total/NA	Water	8015C	
LCS 310-422817/5	Lab Control Sample	Total/NA	Water	8015C	

Prep Batch: 422933

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282049-8	P-213C	Total/NA	Water	3510C	
MB 310-422933/1-A	Method Blank	Total/NA	Water	3510C	
LCS 310-422933/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCS 310-422933/4-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 310-422933/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	
LCSD 310-422933/5-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 423446

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282049-8	P-213C	Total/NA	Water	8081B	422933
MB 310-422933/1-A	Method Blank	Total/NA	Water	8081B	422933
LCS 310-422933/2-A	Lab Control Sample	Total/NA	Water	8081B	422933
LCSD 310-422933/3-A	Lab Control Sample Dup	Total/NA	Water	8081B	422933

Analysis Batch: 423447

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282049-8	P-213C	Total/NA	Water	8082A	422933
MB 310-422933/1-A	Method Blank	Total/NA	Water	8082A	422933
LCS 310-422933/4-A	Lab Control Sample	Total/NA	Water	8082A	422933
LCSD 310-422933/5-A	Lab Control Sample Dup	Total/NA	Water	8082A	422933

Metals

Prep Batch: 422763

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282049-3	OW-226B	Total/NA	Water	3005A	
310-282049-4	OW-227B	Total/NA	Water	3005A	
310-282049-5	Equipment Blank 3	Total/NA	Water	3005A	
310-282049-6	OW-113B	Total/NA	Water	3005A	
310-282049-7	Duplicate 5	Total/NA	Water	3005A	
310-282049-8	P-213C	Total/NA	Water	3005A	
310-282049-9	P-214CR	Total/NA	Water	3005A	
MB 310-422763/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-422763/2-A	Lab Control Sample	Total/NA	Water	3005A	

Prep Batch: 422881

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282049-8	P-213C	Total/NA	Water	7470A	
MB 310-422881/1-A	Method Blank	Total/NA	Water	7470A	
LCS 310-422881/2-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 423023

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282049-8	P-213C	Total/NA	Water	7470A	422881
MB 310-422881/1-A	Method Blank	Total/NA	Water	7470A	422881

Metals (Continued)

Analysis Batch: 423023 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 310-422881/2-A	Lab Control Sample	Total/NA	Water	7470A	422881

Analysis Batch: 423330

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282049-3	OW-226B	Total/NA	Water	6020B	422763
310-282049-4	OW-227B	Total/NA	Water	6020B	422763
310-282049-5	Equipment Blank 3	Total/NA	Water	6020B	422763
310-282049-6	OW-113B	Total/NA	Water	6020B	422763
310-282049-7	Duplicate 5	Total/NA	Water	6020B	422763
310-282049-8	P-213C	Total/NA	Water	6020B	422763
310-282049-9	P-214CR	Total/NA	Water	6020B	422763
MB 310-422763/1-A	Method Blank	Total/NA	Water	6020B	422763
LCS 310-422763/2-A	Lab Control Sample	Total/NA	Water	6020B	422763

Analysis Batch: 423570

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282049-3	OW-226B	Total/NA	Water	6020B	422763
310-282049-4	OW-227B	Total/NA	Water	6020B	422763
310-282049-5	Equipment Blank 3	Total/NA	Water	6020B	422763
310-282049-6	OW-113B	Total/NA	Water	6020B	422763
310-282049-7	Duplicate 5	Total/NA	Water	6020B	422763
310-282049-8	P-213C	Total/NA	Water	6020B	422763
310-282049-9	P-214CR	Total/NA	Water	6020B	422763
MB 310-422763/1-A	Method Blank	Total/NA	Water	6020B	422763
LCS 310-422763/2-A	Lab Control Sample	Total/NA	Water	6020B	422763

General Chemistry

Analysis Batch: 422958

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282049-5	Equipment Blank 3	Total/NA	Water	I-3765-85	
MB 310-422958/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-422958/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Analysis Batch: 422966

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282049-3	OW-226B	Total/NA	Water	I-3765-85	
310-282049-4	OW-227B	Total/NA	Water	I-3765-85	
310-282049-6	OW-113B	Total/NA	Water	I-3765-85	
310-282049-7	Duplicate 5	Total/NA	Water	I-3765-85	
310-282049-8	P-213C	Total/NA	Water	I-3765-85	
310-282049-9	P-214CR	Total/NA	Water	I-3765-85	
MB 310-422966/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-422966/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Prep Batch: 423077

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282049-8	P-213C	Total/NA	Water	9012B	
MB 310-423077/1-A	Method Blank	Total/NA	Water	9012B	
LCS 310-423077/2-A	Lab Control Sample	Total/NA	Water	9012B	

QC Association Summary

Client: AECOM
Job ID: 310-282049-1
Project/Site: Black Hawk County Landfill (IDNR)

General Chemistry

Analysis Batch: 423153

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282049-8	P-213C	Total/NA	Water	9012B	423077
MB 310-423077/1-A	Method Blank	Total/NA	Water	9012B	423077
LCS 310-423077/2-A	Lab Control Sample	Total/NA	Water	9012B	423077

Prep Batch: 614846

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282049-3	OW-226B	Total/NA	Water	9030B	
310-282049-4	OW-227B	Total/NA	Water	9030B	
310-282049-6	OW-113B	Total/NA	Water	9030B	
310-282049-8	P-213C	Total/NA	Water	9030B	
MB 240-614846/1-A	Method Blank	Total/NA	Water	9030B	
LCS 240-614846/2-A	Lab Control Sample	Total/NA	Water	9030B	

Analysis Batch: 614874

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282049-3	OW-226B	Total/NA	Water	9034	614846
310-282049-4	OW-227B	Total/NA	Water	9034	614846
310-282049-6	OW-113B	Total/NA	Water	9034	614846
310-282049-8	P-213C	Total/NA	Water	9034	614846
MB 240-614846/1-A	Method Blank	Total/NA	Water	9034	614846
LCS 240-614846/2-A	Lab Control Sample	Total/NA	Water	9034	614846

Field Service / Mobile Lab

Analysis Batch: 423239

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282049-3	OW-226B	Total/NA	Water	Field Sampling	
310-282049-4	OW-227B	Total/NA	Water	Field Sampling	
310-282049-6	OW-113B	Total/NA	Water	Field Sampling	
310-282049-8	P-213C	Total/NA	Water	Field Sampling	
310-282049-9	P-214CR	Total/NA	Water	Field Sampling	

Client Sample ID: Trip Blank
Lab Sample ID: 310-282049-2

Date Collected: 05/23/24 05:00
Matrix: Water
Date Received: 05/24/24 11:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	422854	FE5V	EET CF	05/29/24 11:58

Client Sample ID: OW-226B
Lab Sample ID: 310-282049-3

Date Collected: 05/23/24 15:30
Matrix: Water
Date Received: 05/24/24 11:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	422854	FE5V	EET CF	05/29/24 16:53
Total/NA	Prep	3005A			422763	KM3E	EET CF	05/28/24 09:00
Total/NA	Analysis	6020B		1	423330	NFT2	EET CF	05/31/24 19:56
Total/NA	Prep	3005A			422763	KM3E	EET CF	05/28/24 09:00
Total/NA	Analysis	6020B		1	423570	NFT2	EET CF	06/04/24 19:58
Total/NA	Prep	9030B			614846	BLW	EET CLE	05/30/24 07:53
Total/NA	Analysis	9034		1	614874	BLW	EET CLE	05/30/24 09:40
Total/NA	Analysis	I-3765-85		1	422966	HE7K	EET CF	05/29/24 10:13
Total/NA	Analysis	Field Sampling		1	423239	BJ0R	EET CF	05/23/24 15:30

Client Sample ID: OW-227B
Lab Sample ID: 310-282049-4

Date Collected: 05/23/24 17:00
Matrix: Water
Date Received: 05/24/24 11:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	422854	FE5V	EET CF	05/29/24 17:16
Total/NA	Prep	3005A			422763	KM3E	EET CF	05/28/24 09:00
Total/NA	Analysis	6020B		1	423330	NFT2	EET CF	05/31/24 20:00
Total/NA	Prep	3005A			422763	KM3E	EET CF	05/28/24 09:00
Total/NA	Analysis	6020B		1	423570	NFT2	EET CF	06/04/24 20:02
Total/NA	Prep	9030B			614846	BLW	EET CLE	05/30/24 07:53
Total/NA	Analysis	9034		1	614874	BLW	EET CLE	05/30/24 09:40
Total/NA	Analysis	I-3765-85		1	422966	HE7K	EET CF	05/29/24 10:13
Total/NA	Analysis	Field Sampling		1	423239	BJ0R	EET CF	05/23/24 17:00

Client Sample ID: Equipment Blank 3
Lab Sample ID: 310-282049-5

Date Collected: 05/23/24 17:00
Matrix: Water
Date Received: 05/24/24 11:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	423506	FE5V	EET CF	06/04/24 15:50
Total/NA	Prep	3005A			422763	KM3E	EET CF	05/28/24 09:00
Total/NA	Analysis	6020B		1	423330	NFT2	EET CF	05/31/24 20:03
Total/NA	Prep	3005A			422763	KM3E	EET CF	05/28/24 09:00
Total/NA	Analysis	6020B		1	423570	NFT2	EET CF	06/04/24 20:05
Total/NA	Analysis	I-3765-85		1	422958	HE7K	EET CF	05/29/24 09:32

Lab Chronicle

Client: AECOM
Job ID: 310-282049-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-113B
Lab Sample ID: 310-282049-6

Date Collected: 05/23/24 14:15
Matrix: Water
Date Received: 05/24/24 11:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	423506	FE5V	EET CF	06/04/24 16:12
Total/NA	Prep	3005A			422763	KM3E	EET CF	05/28/24 09:00
Total/NA	Analysis	6020B		1	423330	NFT2	EET CF	05/31/24 20:07
Total/NA	Prep	3005A			422763	KM3E	EET CF	05/28/24 09:00
Total/NA	Analysis	6020B		1	423570	NFT2	EET CF	06/04/24 20:09
Total/NA	Prep	9030B			614846	BLW	EET CLE	05/30/24 07:53
Total/NA	Analysis	9034		1	614874	BLW	EET CLE	05/30/24 09:40
Total/NA	Analysis	I-3765-85		1	422966	HE7K	EET CF	05/29/24 10:13
Total/NA	Analysis	Field Sampling		1	423239	BJ0R	EET CF	05/23/24 14:15

Client Sample ID: Duplicate 5
Lab Sample ID: 310-282049-7

Date Collected: 05/23/24 00:00
Matrix: Water
Date Received: 05/24/24 11:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	423506	FE5V	EET CF	06/04/24 16:35
Total/NA	Prep	3005A			422763	KM3E	EET CF	05/28/24 09:00
Total/NA	Analysis	6020B		1	423330	NFT2	EET CF	05/31/24 20:10
Total/NA	Prep	3005A			422763	KM3E	EET CF	05/28/24 09:00
Total/NA	Analysis	6020B		1	423570	NFT2	EET CF	06/04/24 20:13
Total/NA	Analysis	I-3765-85		1	422966	HE7K	EET CF	05/29/24 10:13

Client Sample ID: P-213C
Lab Sample ID: 310-282049-8

Date Collected: 05/23/24 10:30
Matrix: Water
Date Received: 05/24/24 11:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	422943	WSE8	EET CF	05/29/24 19:30
Total/NA	Prep	3510C			422930	JT8P	EET CF	05/29/24 07:35
Total/NA	Analysis	8270E		1	423476	L0FS	EET CF	06/04/24 16:39
Total/NA	Prep	3510C			422930	JT8P	EET CF	05/29/24 07:35
Total/NA	Analysis	8270E		1	423326	L0FS	EET CF	06/03/24 22:25
Total/NA	Analysis	8015C		1	422817	V7YZ	EET CF	05/28/24 17:12
Total/NA	Prep	3510C			422933	JT8P	EET CF	05/29/24 07:55
Total/NA	Analysis	8081B		1	423446	BW2O	EET CF	06/04/24 18:30
Total/NA	Prep	3510C			422933	JT8P	EET CF	05/29/24 07:55
Total/NA	Analysis	8082A		1	423447	BW2O	EET CF	06/04/24 18:30
Total/NA	Prep	3005A			422763	KM3E	EET CF	05/28/24 09:00
Total/NA	Analysis	6020B		1	423330	NFT2	EET CF	05/31/24 20:14
Total/NA	Prep	3005A			422763	KM3E	EET CF	05/28/24 09:00
Total/NA	Analysis	6020B		1	423570	NFT2	EET CF	06/04/24 20:16
Total/NA	Prep	7470A			422881	A6US	EET CF	05/28/24 13:59
Total/NA	Analysis	7470A		1	423023	A6US	EET CF	05/29/24 15:08

Lab Chronicle

Client: AECOM
Job ID: 310-282049-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: P-213C
Lab Sample ID: 310-282049-8
Date Collected: 05/23/24 10:30
Matrix: Water
Date Received: 05/24/24 11:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	9012B			423077	WZC8	EET CF	05/30/24 09:42
Total/NA	Analysis	9012B		1	423153	ZJX4	EET CF	05/30/24 17:15
Total/NA	Prep	9030B			614846	BLW	EET CLE	05/30/24 07:53
Total/NA	Analysis	9034		1	614874	BLW	EET CLE	05/30/24 09:40
Total/NA	Analysis	I-3765-85		1	422966	HE7K	EET CF	05/29/24 10:13
Total/NA	Analysis	Field Sampling		1	423239	BJ0R	EET CF	05/23/24 10:30

Client Sample ID: P-214CR
Lab Sample ID: 310-282049-9
Date Collected: 05/23/24 13:30
Matrix: Water
Date Received: 05/24/24 11:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	422943	WSE8	EET CF	05/29/24 19:52
Total/NA	Prep	3005A			422763	KM3E	EET CF	05/28/24 09:00
Total/NA	Analysis	6020B		1	423330	NFT2	EET CF	05/31/24 20:32
Total/NA	Prep	3005A			422763	KM3E	EET CF	05/28/24 09:00
Total/NA	Analysis	6020B		1	423570	NFT2	EET CF	06/04/24 20:34
Total/NA	Analysis	I-3765-85		1	422966	HE7K	EET CF	05/29/24 10:13
Total/NA	Analysis	Field Sampling		1	423239	BJ0R	EET CF	05/23/24 13:30

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Accreditation/Certification Summary

Client: AECOM
Job ID: 310-282049-1
Project/Site: Black Hawk County Landfill (IDNR)

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8260D		Water	1,2,4-Trichlorobenzene
8260D		Water	Allyl chloride
8260D		Water	Ethyl methacrylate
8260D		Water	m,p-Xylene
8260D		Water	o-Xylene
Field Sampling		Water	Field Turbidity

Laboratory: Eurofins Cleveland

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-28-25
Georgia	State	4062	02-27-25
Illinois	NELAP	200004	07-31-24
Iowa	State	421	06-01-25
Kentucky (UST)	State	112225	02-27-25
Kentucky (WW)	State	KY98016	12-30-24
Minnesota	NELAP	039-999-348	12-31-24
New Jersey	NELAP	OH001	06-30-24
New York	NELAP	10975	04-02-25
Ohio VAP	State	ORELAP 4062	02-27-25
Oregon	NELAP	4062	02-27-25
Pennsylvania	NELAP	68-00340	08-31-24
Texas	NELAP	T104704517-22-19	08-31-24
USDA	US Federal Programs	P330-18-00281	01-05-27
Virginia	NELAP	460175	09-14-24
West Virginia DEP	State	210	12-31-24

Method Summary

Client: AECOM
Job ID: 310-282049-1
Project/Site: Black Hawk County Landfill (IDNR)

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CF
8270E	Semivolatile Organic Compounds (GC/MS)	SW846	EET CF
8015C	Nonhalogenated Organic using GC/FID (Direct Aqueous Injection)	SW846	EET CF
8081B	Organochlorine Pesticides (GC)	SW846	EET CF
8082A	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
7470A	Mercury (CVAA)	SW846	EET CF
9012B	Cyanide, Total andor Amenable	SW846	EET CF
9034	Sulfide, Acid soluble and Insoluble (Titrimetric)	SW846	EET CLE
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
Field Sampling	Field Sampling	EPA	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET CF
5030B	Purge and Trap	SW846	EET CF
7470A	Preparation, Mercury	SW846	EET CF
9012B	Cyanide, Total and/or Amenable, Distillation	SW846	EET CF
9030B	Sulfide, Distillation (Acid Soluble and Insoluble)	SW846	EET CLE

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

eurofins | Environment Testing America

310-282049 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: AECOM

City/State: CITY | STATE TX | Project:

Receipt Information

Date/Time Received: DATE 5/24/24 | TIME 0910 | Received By:

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ Lab Field Services ☒ Client Drop-off ☐ Other:

Condition of Cooler/Containers

Sample(s) received in Cooler? ☒ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☒ Yes ☐ No *If yes:* Cooler # 1 of 2

Cooler Custody Seals Present? ☐ Yes ☒ No *If yes:* Cooler custody seals intact? ☐ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☒ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☒ Yes ☐ No *If yes:* Which VOA samples are in cooler? ↓

ALL

Temperature Record

Coolant: ☒ Wet Ice ☐ Blue Ice ☐ Dry Ice ☐ Other: ☐ NONE

Thermometer ID: R | Correction Factor (°C): +0.0

Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): | Corrected Temp (°C):

Sample Container Temperature

	CONTAINER 1	CONTAINER 2
Container(s) used:	PLANT	
Uncorrected Temp (°C):	3.1	
Corrected Temp (°C):	3.1	

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE If yes, contact PM before proceeding If no, proceed with login

Additional Comments

rcvd Sample Dup #4 not 5

eurofins | Environment Testing America

Place COC scanning label here

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: AECOM

City/State: CITY | STATE IA | Project:

Receipt Information

Date/Time Received: DATE 5/24/24 | TIME 1120 | Received By: N

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ Lab Field Services ☒ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☒ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☒ Yes ☐ No *If yes:* Cooler # 2 of 2

Cooler Custody Seals Present? ☐ Yes ☒ No *If yes:* Cooler custody seals intact? ☐ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☒ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☐ Yes ☐ No *If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☒ Wet Ice ☐ Blue Ice ☐ Dry Ice ☐ Other:_____ ☐ NONE

Thermometer ID: R | Correction Factor (°C): +0.0

Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 3.6 | Corrected Temp (°C): 3.6

Sample Container Temperature

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

Eurofins Cedar Falls
3019 Venture Way

Cedar Falls, IA 50613
phone 319.277.2401 fax 319 277.2425

Chain of Custody Record

eurofins Environment Testing America

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other IDNR

Eurofins Environment Testing America

Client Contact	**Project Manager: Chris Oelkers**	COC No
AECOM	Email Christopher Oelkers@aecom com	Site Contact: / Date: 5-24-24	1 of 4 COCs
501 Sycamore Street, Suite 222	Tel/Fax:319-296-6878	Lab Contact: / Carrier:	TALS Project #
Waterloo, IA 50703	**Analysis Turnaround Time**		Sampler
(319) 232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS		**For Lab Use Only:**
(xxx) xxx-xxxx FAX	TAT if different from Below ____		Walk-in Client
Project Name Black Hawk Co IDNR	☑ 2 weeks		Lab Sampling
Site Black Hawk County Landfill	☐ 1 week		
P O #	☐ 2 days		Job / SDG No
	☐ 1 day		

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	Appendix I, TSS	Appendix II, TSS	2,4-D	4,4'-DDD	beta-BHC	delta BHC	Endosulfan I	Endosulfan sulfate	Endrin aldehyde	Silvex	Sulfide	HERBICIDES	Sample Specific Notes
OW-401B	5-23-24	1800	G	GW	2	N		X		X		X	X		X	X	X	X	X	Resample
OW-402B			G	GW		N		X												
MW-409B			G	GW		N		X												
OW-410B			G	GW		N		X												
OW-411B			G	GW		N		X												
OW-412B			G	GW		N		X												
OW-413B			G	GW		N		X												
OW-414B			G	GW		N		X												
MW-501B			G	GW		N		X												
MW-602B			G	GW		N		X												
MW-602B-FD			G	GW		N		X												
Trip Blank	5-23-24	0500	G	W	2	N		X												

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for ____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No | Cooler Temp (°C) Obs'd. ____ Corr'd ____ | Therm ID No. ____

Relinquished by: Ben Porter	Company: Aecom	Date/Time: 5-24-24	Received by:	Company:	Date/Time: 5-24-24 1120
Relinquished by:	Company:	Date/Time	Received by:	Company:	Date/Time
Relinquished by:	Company:	Date/Time	Received in Laboratory by:	Company:	Date/Time

Eurofins Cedar Falls
3019 Venture Way

Cedar Falls, IA 50613
phone 319 277.2401 fax 319.277.2425

Chain of Custody Record

eurofins Environment Testing America

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other IDNR

Eurofins Environment Testing America

Client Contact	Project Manager: Chris Oelkers	Site Contact:	Date: 5-24-24	COC No
AECOM	Email Christopher Oelkers@aecom.com			2 of 4 COCs
501 Sycamore Street, Suite 222	Tel/Fax:319-296-6878	Lab Contact:	Carrier:	TALS Project #
Waterloo, IA 50703	Analysis Turnaround Time			Sampler
(319) 232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(xxx) xxx-xxxx FAX	TAT if different from Below ____			Walk-in Client
Project Name Black Hawk Co IDNR	☑ 2 weeks			Lab Sampling
Site Black Hawk County Landfill	☐ 1 week			
P O #	☐ 2 days			Job / SDG No
	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	Appendix I, TSS	Appendix II, TSS	2,4-D	4,4'-DDD	beta-BHC	delta BHC	Endosulfan I	Endosulfan sulfate	Endrin aldehyde	Silvex	Sulfide							Sample Specific Notes
OW-220B			G	GW		N		X		X							X								
OW-221B			G	GW		N		X																	
OW-222B			G	GW		N		X																	
OW-223B			G	GW		N		X																	
OW-224B			G	GW		N		X																	
OW-225B			G	GW		N		X																	
OW-226B	5-23-24	1530	G	GW	6	N		X										X							Turbidity - 24.86 NTU
OW-227B	5-23-24	1700	G	GW	6	N		X										X							Turbidity - 9.52 NTU
MW-319B			G	GW		N		X																	
MW-320B			G	GW		N		X																	
Equipment Blank-3	5-23-24	1700	G	GW	5	N		X																	
MW-319B-FD			G	GW		N		X																	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No | Cooler Temp (°C) Obs'd.____ Corr'd.____ | Therm ID No.____

Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Ben Porter	Aecom	5-24-24			1120
Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Relinquished by	Company	Date/Time	Received in Laboratory by	Company	Date/Time

6/10/2024

Eurofins Cedar Falls
3019 Venture Way

Cedar Falls, IA 50613
phone 319.277 2401 fax 319.277 2425

Chain of Custody Record

eurofins Environment Testing America

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other IDNR

Eurofins Environment Testing America

Client Contact	Project Manager: Chris Oelkers	Site Contact:	Date: 5-24-24	COC No
AECOM	Email Christopher Oelkers@aecom com	Lab Contact:	Carrier:	3 of 4 COCs
501 Sycamore Street, Suite 222	Tel/Fax:319-296-6878			TALS Project #
Waterloo, IA 50703	**Analysis Turnaround Time**			Sampler
(319) 232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS			**For Lab Use Only:**
(xxx) xxx-xxxx FAX	TAT if different from Below _____			Walk-in Client:
Project Name Black Hawk Co IDNR	☑ 2 weeks			Lab Sampling
Site Black Hawk County Landfill	☐ 1 week			Job / SDG No
P O #	☐ 2 days			
	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Appendix I, TSS	Appendix II, TSS	2,4-D	4,4'-DDD	beta-BHC	delta BHC	Endosulfan I	Endosulfan sulfate	Endrin aldehyde	Silvex	Sulfide	Sample Specific Notes
OW-101B			G	GW		N		X											
OW-105B			G	GW		N		X											
OW-113B	5-23-24	1415	G	GW	6	N		X										X	Turbidity - 135.60 NTU
OW-114B			G	GW		N		X											
OW-205B			G	GW		N		X			X			X				X	
OW-209B			G	GW		N		X											
OW-212B			G	GW		N		X											
OW-213BR			G	GW		N		X											
OW-216BR			G	GW		N		X											
OW-219B			G	GW		N		X											
OW-219B-FD			G	GW		N		X											
Duplicate#5	5-23-24		G	GW	5	N		X											

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No | Cooler Temp (°C) Obs'd._____ Corr'd _____ | Therm ID No ._____

Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Ben Porter	Aecom	5-24-24			
Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Relinquished by	Company	Date/Time	Received in Laboratory by	Company	Date/Time

6/10/2024

› Cedar Falls
.ure Way

Cedar Falls, IA 50613
phone 319.277.2401 fax 319.277 2425

Chain of Custody Record

eurofins Environment Testing America

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other IDNR

Eurofins Environment Testing America

Client Contact	Project Manager: Chris Oelkers	Site Contact:	Date: 5-24-24	COC No
AECOM	Email Christopher Oelkers@aecom.com	Lab Contact:	Carrier:	1 of 1 COCs
501 Sycamore Street, Suite 222	Tel/Fax:319-296-6878			TALS Project #
Waterloo, IA 50703	Analysis Turnaround Time			Sampler
(319) 232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(xxx) xxx-xxxx FAX	TAT if different from Below			Walk-in Client.
Project Name Black Hawk Co IDNR	☑ 2 weeks			Lab Sampling
Site Black Hawk County Landfill	☐ 1 week			Job / SDG No
P O #	☐ 2 days ☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	Appendix I, TSS	Appendix II, TSS	2,4-D	4,4'-DDD	beta-BHC	delta BHC	Endosulfan I	Endosulfan sulfate	Endrin aldehyde	Silvex	Sulfide	Sample Specific Notes
GUW3-1			G	GW		N		X											
GUX-1			G	GW		N		X											
P-213C	5-23-24	1030	G	GW	18	N			X										Turbidity - 0.66 NTU
P-214CR	5-23-24	1330	G	GW	5	N		X											Turbidity - 35.53 NTU
P-215CR			G	GW		N		X											
P-216CR			G	GW		N		X											
P-402A			G	GW		N		X											
P-402C			G	GW		N		X											
P-604C			G	GW		N		X											
P-703C			G	GW		N		X											
P-703C-FD			G	GW		N		X											

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No | Cooler Temp (°C) Obs'd _____ Corr'd. _____ | Therm ID No. _____

Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Ben Porter	Aecom	5-24-24			5/24/24 1120
Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Relinquished by	Company	Date/Time	Received in Laboratory by	Company	Date/Time

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone: 319-277-2401 Fax: 319-277-2425

1.8\3.2

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Bindert, Zach T	Carrier Tracking No(s):	COC No: 310-72802.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Zach.Bindert@et.eurofinsus.com	State of Origin: Iowa	Page: Page 1 of 1
Company: Eurofins Environment Testing North Centr		Accreditations Required (See note): State - Iowa; State Program - Iowa		Job #: 310-282049-1
Address: 180 S. Van Buren Avenue,	Due Date Requested: 6/10/2024			Preservation Codes: -
City: Barberton	TAT Requested (days):			
State, Zip: OH, 44203				
Phone: 330-497-9396(Tel) 330-497-0772(Fax)	PO #:			
Email:	WO #:			
Project Name: Black Hawk County Landfill (IDNR)	Project #: 31017149			
Site: 310 - Black Hawk County (IDNR)	SSOW#:			Other: G022 ~~M049~~ 5-25-24

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9034_Calc/9030B Sulfide	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
OW-226B (310-282049-3)	5/23/24	15:30 Central		Water			X	1	
OW-227B (310-282049-4)	5/23/24	17:00 Central		Water			X	1	
OW-113B (310-282049-6)	5/23/24	14:15 Central		Water			X	1	
P-213C (310-282049-8)	5/23/24	10:30 Central		Water			X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing North Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing North Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing North Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing North Central, LLC.

Possible Hazard Identification *Unconfirmed*	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)* ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by: [signature]	Date/Time: 5/24/24 1445	Company	Received by: JESSICA RIGDON	Date/Time: 5-25-24 0930	Company EETNC
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:		

Ver: 04/02/2024 6/10/2024

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone: 319-277-2401 Fax: 319-277-2425

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Bindert, Zach T	Carrier Tracking No(s):	COC No: 310-72803.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Zach.Bindert@et.eurofinsus.com	State of Origin: Iowa	Page: Page 1 of 1
Company: Eurofins Lancaster Laboratories Environm		Accreditations Required (See note): State - Iowa; State Program - Iowa		Job #: 310-282049-1
Address: 2425 New Holland Pike, ,	Due Date Requested: 6/10/2024			Preservation Codes: -
City: Lancaster	TAT Requested (days):			
State, Zip: PA, 17601				
Phone: 717-656-2300(Tel)	PO #:			
Email:	WO #:			
Project Name: Black Hawk County Landfill (IDNR)	Project #: 31017149			
Site: 310 - Black Hawk County (IDNR)	SSOW#:			Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8151A/8151A_AP Default List	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
OW-401B (310-282049-1)	5/23/24	18:00 Central		Water			X	2	
P-213C (310-282049-8)	5/23/24	10:30 Central		Water			X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing North Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing North Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing North Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing North Central, LLC.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		5/24/24 1958				
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 5/25/24 0955	Company EURT

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 6.5-10.1/6.2-9.8

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-282049-1

Login Number: 282049

List Source: Eurofins Cedar Falls

List Number: 1

Creator: Homolar, Dana J

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

1 2 3 4 5 6 7 8 9 10 11 12 13 14

ANALYTICAL REPORT

PREPARED FOR

Attn: Chris Oelkers
AECOM
501 Sycamore Street
Suite #222
Waterloo, Iowa 50703

Generated 8/6/2024 3:24:49 PM

JOB DESCRIPTION

Black Hawk County Landfill (IDNR)
Summer 2024

JOB NUMBER

310-286840-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

myEOL

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



Generated
8/6/2024 3:24:49 PM

Authorized for release by
Zach Bindert, Senior Project Manager
Zach.Bindert@et.eurofinsus.com
(319)595-2016

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Job ID: 310-286840-1 — Eurofins Cedar Falls

Job Narrative
310-286840-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The sample was received on 7/26/2024 3:52 PM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 4.0°C.

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
Method I_3765_85: The method blank for preparation batch 428984 contained Total Suspended Solids above the reporting limit (RL). None of the samples associated with this method blank contained the target compound; therefore, re-extraction and/or re-analysis of samples were not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Field Service / Mobile Lab
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Sample Summary

Client: AECOM
Job ID: 310-286840-1
Project/Site: Black Hawk County Landfill (IDNR)

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-286840-1	MW-712B	Water	07/26/24 10:30	07/26/24 15:52

Detection Summary

Client: AECOM
Job ID: 310-286840-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: MW-712B
Lab Sample ID: 310-286840-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cobalt	4.51		0.500	0.170	ug/L	1		6020B	Total/NA
Field Turbidity	1.74				NTU	1		Field Sampling	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: AECOM
Job ID: 310-286840-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: MW-712B
Lab Sample ID: 310-286840-1

Date Collected: 07/26/24 10:30
Matrix: Water

Date Received: 07/26/24 15:52

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	**4.51**		0.500	0.170	ug/L		07/30/24 09:00	07/31/24 13:43	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	<1.39		1.88	1.39	mg/L			07/31/24 11:27	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**1.74**				NTU			07/26/24 10:30	1

Definitions/Glossary

Client: AECOM
Job ID: 310-286840-1
Project/Site: Black Hawk County Landfill (IDNR)

Qualifiers

General Chemistry

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Client: AECOM
Project/Site: Black Hawk County Landfill (IDNR)

Job ID: 310-286840-1

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-428759/1-A
Matrix: Water
Analysis Batch: 429085

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 428759

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	<0.170		0.500	0.170	ug/L		07/30/24 09:00	07/31/24 12:31	1

Lab Sample ID: LCS 310-428759/2-A
Matrix: Water
Analysis Batch: 429085

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 428759

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Cobalt			100	106.3		ug/L		106	80 - 120		

Lab Sample ID: 310-286840-1 DU
Matrix: Water
Analysis Batch: 429085

Client Sample ID: MW-712B
Prep Type: Total/NA
Prep Batch: 428759

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Cobalt	4.51			4.478		ug/L				0.7	20

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: MB 310-428984/1
Matrix: Water
Analysis Batch: 428984

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	4.667	J	5.00	3.70	mg/L			07/31/24 11:27	1

Lab Sample ID: LCS 310-428984/2
Matrix: Water
Analysis Batch: 428984

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Suspended Solids			100	107.0		mg/L		107	81 - 116		

QC Association Summary

Client: AECOM
Job ID: 310-286840-1
Project/Site: Black Hawk County Landfill (IDNR)

Metals

Prep Batch: 428759

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-286840-1	MW-712B	Total/NA	Water	3005A	
MB 310-428759/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-428759/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-286840-1 DU	MW-712B	Total/NA	Water	3005A	

Analysis Batch: 429085

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-286840-1	MW-712B	Total/NA	Water	6020B	428759
MB 310-428759/1-A	Method Blank	Total/NA	Water	6020B	428759
LCS 310-428759/2-A	Lab Control Sample	Total/NA	Water	6020B	428759
310-286840-1 DU	MW-712B	Total/NA	Water	6020B	428759

General Chemistry

Analysis Batch: 428984

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-286840-1	MW-712B	Total/NA	Water	I-3765-85	
MB 310-428984/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-428984/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Field Service / Mobile Lab

Analysis Batch: 428877

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-286840-1	MW-712B	Total/NA	Water	Field Sampling	

Lab Chronicle

Client: AECOM
Job ID: 310-286840-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: MW-712B
Lab Sample ID: 310-286840-1

Date Collected: 07/26/24 10:30
Matrix: Water
Date Received: 07/26/24 15:52

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			428759	QTZ5	EET CF	07/30/24 09:00
Total/NA	Analysis	6020B		1	429085	NFT2	EET CF	07/31/24 13:43
Total/NA	Analysis	I-3765-85		1	428984	WZC8	EET CF	07/31/24 11:27
Total/NA	Analysis	Field Sampling		1	428877	BJ0R	EET CF	07/26/24 10:30

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Accreditation/Certification Summary

Client: AECOM
Job ID: 310-286840-1
Project/Site: Black Hawk County Landfill (IDNR)

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
Field Sampling		Water	Field Turbidity

Method Summary

Client: AECOM
Job ID: 310-286840-1
Project/Site: Black Hawk County Landfill (IDNR)

Method	Method Description	Protocol	Laboratory
6020B	Metals (ICP/MS)	SW846	EET CF
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
Field Sampling	Field Sampling	EPA	EET CF
3005A	Preparation, Total Metals	SW846	EET CF

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

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310-286840 Chain of Custody

Cooler/Sample Receipt and Temperature Log

Client Information			
Client:	AECOM		
City/State:	CITY: Cedar Falls	STATE: IA	Project: BH Co LF
Receipt Information			
Date/Time Received:	DATE: 7/26/24	TIME: 1300	Received By: TO

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☐ Lab Courier ☐ Lab Field Services ☑ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers			
Sample(s) received in Cooler?	☑ Yes	☐ No	*If yes:* Cooler ID.
Multiple Coolers?	☐ Yes	☑ No	*If yes:* Cooler # _____ of _____
Cooler Custody Seals Present?	☐ Yes	☑ No	*If yes:* Cooler custody seals intact? ☐ Yes ☐ No
Sample Custody Seals Present?	☐ Yes	☑ No	*If yes:* Sample custody seals intact? ☐ Yes ☐ No
Trip Blank Present?	☐ Yes	☐ No	*If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☑ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: C	Correction Factor (°C): 0.0

• **Temp Blank Temperature** – *If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature*

Uncorrected Temp (°C):	Corrected Temp (°C):

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:	250 HNO3	
Uncorrected Temp (°C)	4.0	
Corrected Temp (°C):	4.0	

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE. If yes, contact PM before proceeding If no, proceed with login

Additional Comments

Eurofins Cedar Falls
3019 Venture Way

Cedar Falls IA 50613
phone 319 277 2401 fax 319 277 2425

Chain of Custody Record

eurofins

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other IDNR

Eurofins Environment Testing America

Client Contact	**Project Manager: Chris Oelkers**		COC No
AECOM	Tel/Fax:319-296-6878	Site Contact: / Lab Contact:	Date: 7-26-24 / Carrier:	1 of 1 COCs
501 Sycamore Street Suite 222	**Analysis Turnaround Time**			TALS Project #
Waterloo IA 50703	☑ CALENDAR DAYS ☐ WORKING DAYS			Sampler
(319) 232-6531 Phone	TAT if different from Below			**For Lab Use Only:**
(xxx) xxx-xxxx FAX	☑ 2 weeks			Walk-in Client
Project Name Black Hawk Co IDNR	☐ 1 week			Lab Sampling
Site Black Hawk County Landfill	☐ 2 days			Job / SDG No
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	Appendix I	TSS	Arsenic	Cobalt	Sulfide	Appendix I VOCs Only	Sample Specific Notes
MW-712B	7-26-24	1030	G	GW	2	N			X		X			Turbidity - 1.74 NTU
P-214CR			G	GW		N		X	X					
P-215CR			G	GW		N		X	X					
P-216CR			G	GW		N		X	X					
P-604C			G	GW		N							X	
Equipment Blank-1 Deep Well			G	GW		N		X	X					
P-215CR-FD			G	GW		N		X	X					

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No | Cooler Temp. (°C) Obs'd _____ Corr'd _____ | Therm ID No _____

Relinquished by: Ben Porter	Company: Aecom	Date/Time: 7-26-24	Received by:	Company:	Date/Time: 7/26/24 1300
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time: 7/26/24 1300

8/6/2024

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-286840-1

Login Number: 286840

List Source: Eurofins Cedar Falls

List Number: 1

Creator: Bunker, Xavier M

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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1 2 3 4 5 6 7 8 9 10 11 12 13 14

ANALYTICAL REPORT

PREPARED FOR

Attn: Chris Oelkers
AECOM
501 Sycamore Street
Suite #222
Waterloo, Iowa 50703

Generated 8/6/2024 10:35:03 AM

JOB DESCRIPTION

Black Hawk County Landfill (IDNR)

JOB NUMBER

310-286994-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

my EOL

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



Generated
8/6/2024 10:35:03 AM

Authorized for release by
Zach Bindert, Senior Project Manager
Zach.Bindert@et.eurofinsus.com
(319)595-2016

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Job ID: 310-286994-1 — Eurofins Cedar Falls

Job Narrative
310-286994-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 7/30/2024 11:00 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.7°C.

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Field Service / Mobile Lab
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Sample Summary

Client: AECOM
Job ID: 310-286994-1
Project/Site: Black Hawk County Landfill (IDNR)

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-286994-1	OW-225B	Ground Water	07/29/24 11:40	07/30/24 11:00
310-286994-2	OW-401B	Ground Water	07/29/24 13:30	07/30/24 11:00

Detection Summary

Client: AECOM
Job ID: 310-286994-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-225B — Lab Sample ID: 310-286994-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	6.52		2.00	0.530	ug/L	1		6020B	Total/NA
Total Suspended Solids	34.0		15.0	11.1	mg/L	1		I-3765-85	Total/NA
Field Turbidity	60.59				NTU	1		Field Sampling	Total/NA

Client Sample ID: OW-401B — Lab Sample ID: 310-286994-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	7.25		2.00	0.530	ug/L	1		6020B	Total/NA
Total Suspended Solids	73.0		7.50	5.55	mg/L	1		I-3765-85	Total/NA
Field Turbidity	7.54				NTU	1		Field Sampling	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: AECOM
Job ID: 310-286994-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-225B
Lab Sample ID: 310-286994-1
Date Collected: 07/29/24 11:40
Matrix: Ground Water
Date Received: 07/30/24 11:00

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	6.52		2.00	0.530	ug/L		07/31/24 09:00	08/01/24 14:16	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	34.0		15.0	11.1	mg/L			07/31/24 13:44	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	60.59				NTU			07/29/24 11:40	1

Client Sample Results

Client: AECOM
Job ID: 310-286994-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-401B
Lab Sample ID: 310-286994-2
Date Collected: 07/29/24 13:30
Matrix: Ground Water
Date Received: 07/30/24 11:00

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	7.25		2.00	0.530	ug/L		07/31/24 09:00	08/01/24 14:18	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	73.0		7.50	5.55	mg/L			07/31/24 13:44	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	7.54				NTU			07/29/24 13:30	1

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

QC Sample Results

Client: AECOM
Job ID: 310-286994-1
Project/Site: Black Hawk County Landfill (IDNR)

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-428897/1-A
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 429156
Prep Batch: 428897

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.530		2.00	0.530	ug/L		07/31/24 09:00	08/01/24 13:08	1

Lab Sample ID: LCS 310-428897/2-A
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 429156
Prep Batch: 428897

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	200	206.2		ug/L		103	80 - 120

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: MB 310-429002/1
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 429002

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<3.70		5.00	3.70	mg/L			07/31/24 13:44	1

Lab Sample ID: LCS 310-429002/2
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 429002

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	97.00		mg/L		97	81 - 116

QC Association Summary

Client: AECOM
Job ID: 310-286994-1
Project/Site: Black Hawk County Landfill (IDNR)

Metals

Prep Batch: 428897

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-286994-1	OW-225B	Total/NA	Ground Water	3005A	
310-286994-2	OW-401B	Total/NA	Ground Water	3005A	
MB 310-428897/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-428897/2-A	Lab Control Sample	Total/NA	Water	3005A	

Analysis Batch: 429156

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-286994-1	OW-225B	Total/NA	Ground Water	6020B	428897
310-286994-2	OW-401B	Total/NA	Ground Water	6020B	428897
MB 310-428897/1-A	Method Blank	Total/NA	Water	6020B	428897
LCS 310-428897/2-A	Lab Control Sample	Total/NA	Water	6020B	428897

General Chemistry

Analysis Batch: 429002

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-286994-1	OW-225B	Total/NA	Ground Water	I-3765-85	
310-286994-2	OW-401B	Total/NA	Ground Water	I-3765-85	
MB 310-429002/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-429002/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Field Service / Mobile Lab

Analysis Batch: 429376

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-286994-1	OW-225B	Total/NA	Ground Water	Field Sampling	
310-286994-2	OW-401B	Total/NA	Ground Water	Field Sampling	

Lab Chronicle

Client: AECOM
Job ID: 310-286994-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-225B
Lab Sample ID: 310-286994-1
Date Collected: 07/29/24 11:40
Matrix: Ground Water
Date Received: 07/30/24 11:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			428897	QTZ5	EET CF	07/31/24 09:00
Total/NA	Analysis	6020B		1	429156	NFT2	EET CF	08/01/24 14:16
Total/NA	Analysis	I-3765-85		1	429002	WZC8	EET CF	07/31/24 13:44
Total/NA	Analysis	Field Sampling		1	429376	BJ0R	EET CF	07/29/24 11:40

Client Sample ID: OW-401B
Lab Sample ID: 310-286994-2
Date Collected: 07/29/24 13:30
Matrix: Ground Water
Date Received: 07/30/24 11:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			428897	QTZ5	EET CF	07/31/24 09:00
Total/NA	Analysis	6020B		1	429156	NFT2	EET CF	08/01/24 14:18
Total/NA	Analysis	I-3765-85		1	429002	WZC8	EET CF	07/31/24 13:44
Total/NA	Analysis	Field Sampling		1	429376	BJ0R	EET CF	07/29/24 13:30

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Accreditation/Certification Summary

Client: AECOM
Job ID: 310-286994-1
Project/Site: Black Hawk County Landfill (IDNR)

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
Field Sampling		Ground Water	Field Turbidity

Method Summary

Client: AECOM
Job ID: 310-286994-1
Project/Site: Black Hawk County Landfill (IDNR)

Method	Method Description	Protocol	Laboratory
6020B	Metals (ICP/MS)	SW846	EET CF
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
Field Sampling	Field Sampling	EPA	EET CF
3005A	Preparation, Total Metals	SW846	EET CF

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

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310-286994 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: AECOM			
City/State: CITY Cedar Falls	STATE IA	Project: BHC LF	
Receipt Information			
Date/Time Received. DATE 7/24	TIME 1403	Received By: TC	
Delivery Type. ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ Lab Field Services ☑ Client Drop-off ☐ Other:			
Condition of Cooler/Containers			
Sample(s) received in Cooler? ☑ Yes ☐ No	*If yes:* Cooler ID:		
Multiple Coolers? ☐ Yes ☑ No	*If yes:* Cooler # _____ of _____		
Cooler Custody Seals Present? ☐ Yes ☑ No	*If yes:* Cooler custody seals intact? ☐ Yes ☐ No		
Sample Custody Seals Present? ☐ Yes ☑ No	*If yes:* Sample custody seals intact? ☐ Yes ☐ No		
Trip Blank Present? ☐ Yes ☑ No	*If yes:* Which VOA samples are in cooler? ↓		
Temperature Record			
Coolant: ☑ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other: _____ ☐ NONE			
Thermometer ID. ρ	Correction Factor (°C): 0.0		
• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C):	Corrected Temp (°C):		
• **Sample Container Temperature**			
Container(s) used:	CONTAINER 1: 1 LF NT	CONTAINER 2:	
Uncorrected Temp (°C):	1.7		
Corrected Temp (°C):	1.7		
Exceptions Noted			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No			
2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No			
NOTE: If yes, contact PM before proceeding. If no, proceed with login			
Additional Comments			

Eurofins Cedar Falls
3019 Venture Way

Cedar Falls IA 50613
phone 319.277 2401 fax 319 277 2425

Chain of Custody Record

eurofins

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other IDNR

Eurofins Environment Testing America

Client Contact	**Project Manager: Chris Oelkers**		COC No
AECOM	Tel/Fax:319-296-6878	Site Contact:	Date: 7-30-24	1 of 1 COCs
501 Sycamore Street, Suite 222		Lab Contact:	Carrier:	TALS Project #
Waterloo IA 50703	**Analysis Turnaround Time**			Sampler:
(319) 232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS			**For Lab Use Only:**
(xxx) xxx-xxxx FAX	TAT if different from Below _____			Walk-in Client
Project Name Black Hawk Co IDNR	☑ 2 weeks			Lab Sampling
Site Black Hawk County Landfill	☐ 1 week			Job / SDG No
P O #	☐ 2 days ☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	Appendix I	TSS	Arsenic	Cobalt	Sulfide	Appendix I VOCs Only	Sample Specific Notes
OW-212B			G	GW		N			X		X			
OW-225B	7-29-24	1140	G	GW	2	N			X	X				Turbidity – 60.59 NTU
OW-226B			G	GW		N			X	X		X		
OW-227B			G	GW		N						X		
OW-401B	7-29-24	1330	G	GW	2	N			X	X				Turbidity – 7.54 NTU

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No | Cooler Temp (°C) Obs'd _____ Corr'd _____ | Therm ID No _____

Relinquished by: Ben Porter	Company: Aecom	Date/Time: 7-30-24	Received by:	Company:	Date/Time: 7/30/24 1100
Relinquished by:	Company:	Date/Time	Received by:	Company:	Date/Time
Relinquished by:	Company:	Date/Time	Received in Laboratory by:	Company:	Date/Time: 7/30/24

8/6/2024

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-286994-1

Login Number: 286994

List Number: 1

Creator: Collins, Charlotte

List Source: Eurofins Cedar Falls

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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1 2 3 4 5 6 7 8 9 10 11 12 13 14

ANALYTICAL REPORT

PREPARED FOR

Attn: Chris Oelkers
AECOM
501 Sycamore Street
Suite #222
Waterloo, Iowa 50703

Generated 8/7/2024 10:23:40 PM

JOB DESCRIPTION

Black Hawk County Landfill (IDNR)
Summer 2024

JOB NUMBER

310-287163-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

my EOL

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



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Authorized for release by
Zach Bindert, Senior Project Manager
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(319)595-2016

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Job ID: 310-287163-1 — Eurofins Cedar Falls

Job Narrative
310-287163-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 8/1/2024 9:05 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 5.5°C.

Metals
Method 6020B: The reference method requires samples to be preserved to a pH of <2. The following sample was received with insufficient preservation at a pH of >2: OW-226B (310-287163-2). The sample(s) was preserved to the appropriate pH in the laboratory.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Field Service / Mobile Lab
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Sample Summary

Client: AECOM
Job ID: 310-287163-1
Project/Site: Black Hawk County Landfill (IDNR)

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-287163-1	OW-212B	Water	07/31/24 10:45	08/01/24 09:05
310-287163-2	OW-226B	Water	07/31/24 11:45	08/01/24 09:05
310-287163-3	OW-227B	Water	07/31/24 13:45	08/01/24 09:05

Detection Summary

Client: AECOM
Job ID: 310-287163-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-212B — Lab Sample ID: 310-287163-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cobalt	27.5		0.500	0.170	ug/L	1		6020B	Total/NA
Total Suspended Solids	8.37		1.88	1.39	mg/L	1		I-3765-85	Total/NA
Field Turbidity	3.29				NTU	1		Field Sampling	Total/NA

Client Sample ID: OW-226B — Lab Sample ID: 310-287163-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	7.48		2.00	0.530	ug/L	1		6020B	Total/NA
Total Suspended Solids	49.0		15.0	11.1	mg/L	1		I-3765-85	Total/NA
Field Turbidity	19.15				NTU	1		Field Sampling	Total/NA

Client Sample ID: OW-227B — Lab Sample ID: 310-287163-3

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Field Turbidity	6.77				NTU	1		Field Sampling	Total/NA

This Detection Summary does not include radiochemical test results.

Client: AECOM
Job ID: 310-287163-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-212B
Lab Sample ID: 310-287163-1
Date Collected: 07/31/24 10:45
Matrix: Water
Date Received: 08/01/24 09:05

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	27.5		0.500	0.170	ug/L		08/05/24 09:15	08/06/24 16:13	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	8.37		1.88	1.39	mg/L			08/02/24 13:46	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	3.29				NTU			07/31/24 10:45	1

Client: AECOM
Job ID: 310-287163-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-226B
Lab Sample ID: 310-287163-2
Date Collected: 07/31/24 11:45
Matrix: Water
Date Received: 08/01/24 09:05

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	7.48		2.00	0.530	ug/L		08/05/24 09:15	08/06/24 16:15	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide (SW846 9034)	<1.41		3.00	1.41	mg/L		08/07/24 07:32	08/07/24 09:33	1
Total Suspended Solids (USGS I-3765-85)	49.0		15.0	11.1	mg/L			08/02/24 13:46	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	19.15				NTU			07/31/24 11:45	1

Client Sample Results

Client: AECOM
Job ID: 310-287163-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-227B
Lab Sample ID: 310-287163-3
Date Collected: 07/31/24 13:45
Matrix: Water
Date Received: 08/01/24 09:05

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide (SW846 9034)	<1.41		3.00	1.41	mg/L		08/07/24 07:32	08/07/24 09:33	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	6.77				NTU			07/31/24 13:45	1

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-429310/1-A
Matrix: Water
Analysis Batch: 429628

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 429310

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.530		2.00	0.530	ug/L		08/05/24 09:15	08/06/24 15:05	1
Cobalt	<0.170		0.500	0.170	ug/L		08/05/24 09:15	08/06/24 15:05	1

Lab Sample ID: LCS 310-429310/2-A
Matrix: Water
Analysis Batch: 429628

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 429310

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	200	217.3		ug/L		109	80 - 120
Cobalt	100	119.1		ug/L		119	80 - 120

Lab Sample ID: LCS 310-429310/2-A
Matrix: Water
Analysis Batch: 429696

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 429310

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cobalt	100	116.0		ug/L		116	80 - 120

Method: 9034 - Sulfide, Acid soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 240-622541/1-A
Matrix: Water
Analysis Batch: 622570

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 622541

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.41		3.00	1.41	mg/L		08/07/24 07:32	08/07/24 09:33	1

Lab Sample ID: LCS 240-622541/2-A
Matrix: Water
Analysis Batch: 622570

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 622541

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfide	8.67	7.867		mg/L		91	70 - 120

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: MB 310-429269/1
Matrix: Water
Analysis Batch: 429269

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<3.70		5.00	3.70	mg/L			08/02/24 13:46	1

Lab Sample ID: LCS 310-429269/2
Matrix: Water
Analysis Batch: 429269

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	103.0		mg/L		103	81 - 116

Client: AECOM
Job ID: 310-287163-1
Project/Site: Black Hawk County Landfill (IDNR)

Method: I-3765-85 - Residue, Non-filterable (TSS) (Continued)

Lab Sample ID: 310-287163-2 DU
Client Sample ID: OW-226B
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 429269

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Suspended Solids	49.0			54.00		mg/L				10	35

Metals

Prep Batch: 429310

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-287163-1	OW-212B	Total/NA	Water	3005A	
310-287163-2	OW-226B	Total/NA	Water	3005A	
MB 310-429310/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-429310/2-A	Lab Control Sample	Total/NA	Water	3005A	

Analysis Batch: 429628

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-287163-1	OW-212B	Total/NA	Water	6020B	429310
310-287163-2	OW-226B	Total/NA	Water	6020B	429310
MB 310-429310/1-A	Method Blank	Total/NA	Water	6020B	429310
LCS 310-429310/2-A	Lab Control Sample	Total/NA	Water	6020B	429310

Analysis Batch: 429696

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 310-429310/2-A	Lab Control Sample	Total/NA	Water	6020B	429310

General Chemistry

Analysis Batch: 429269

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-287163-1	OW-212B	Total/NA	Water	I-3765-85	
310-287163-2	OW-226B	Total/NA	Water	I-3765-85	
MB 310-429269/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-429269/2	Lab Control Sample	Total/NA	Water	I-3765-85	
310-287163-2 DU	OW-226B	Total/NA	Water	I-3765-85	

Prep Batch: 622541

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-287163-2	OW-226B	Total/NA	Water	9030B	
310-287163-3	OW-227B	Total/NA	Water	9030B	
MB 240-622541/1-A	Method Blank	Total/NA	Water	9030B	
LCS 240-622541/2-A	Lab Control Sample	Total/NA	Water	9030B	

Analysis Batch: 622570

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-287163-2	OW-226B	Total/NA	Water	9034	622541
310-287163-3	OW-227B	Total/NA	Water	9034	622541
MB 240-622541/1-A	Method Blank	Total/NA	Water	9034	622541
LCS 240-622541/2-A	Lab Control Sample	Total/NA	Water	9034	622541

Field Service / Mobile Lab

Analysis Batch: 429376

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-287163-1	OW-212B	Total/NA	Water	Field Sampling	
310-287163-2	OW-226B	Total/NA	Water	Field Sampling	
310-287163-3	OW-227B	Total/NA	Water	Field Sampling	

Lab Chronicle

Client: AECOM
Job ID: 310-287163-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-212B
Lab Sample ID: 310-287163-1
Date Collected: 07/31/24 10:45
Matrix: Water
Date Received: 08/01/24 09:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			429310	QTZ5	EET CF	08/05/24 09:15
Total/NA	Analysis	6020B		1	429628	NFT2	EET CF	08/06/24 16:13
Total/NA	Analysis	I-3765-85		1	429269	DGU1	EET CF	08/02/24 13:46
Total/NA	Analysis	Field Sampling		1	429376	BJ0R	EET CF	07/31/24 10:45

Client Sample ID: OW-226B
Lab Sample ID: 310-287163-2
Date Collected: 07/31/24 11:45
Matrix: Water
Date Received: 08/01/24 09:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			429310	QTZ5	EET CF	08/05/24 09:15
Total/NA	Analysis	6020B		1	429628	NFT2	EET CF	08/06/24 16:15
Total/NA	Prep	9030B			622541	BLW	EET CLE	08/07/24 07:32
Total/NA	Analysis	9034		1	622570	BLW	EET CLE	08/07/24 09:33
Total/NA	Analysis	I-3765-85		1	429269	DGU1	EET CF	08/02/24 13:46
Total/NA	Analysis	Field Sampling		1	429376	BJ0R	EET CF	07/31/24 11:45

Client Sample ID: OW-227B
Lab Sample ID: 310-287163-3
Date Collected: 07/31/24 13:45
Matrix: Water
Date Received: 08/01/24 09:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	9030B			622541	BLW	EET CLE	08/07/24 07:32
Total/NA	Analysis	9034		1	622570	BLW	EET CLE	08/07/24 09:33
Total/NA	Analysis	Field Sampling		1	429376	BJ0R	EET CF	07/31/24 13:45

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Accreditation/Certification Summary

Client: AECOM
Job ID: 310-287163-1
Project/Site: Black Hawk County Landfill (IDNR)

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
Field Sampling		Water	Field Turbidity

Laboratory: Eurofins Cleveland

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-28-25
Georgia	State	4062	02-27-25
Illinois	NELAP	200004	08-31-25
Iowa	State	421	06-01-25
Kentucky (UST)	State	112225	02-27-25
Kentucky (WW)	State	KY98016	12-30-24
Minnesota	NELAP	039-999-348	12-31-24
New Jersey	NELAP	OH001	07-03-25
New York	NELAP	10975	04-02-25
Ohio VAP	State	ORELAP 4062	02-27-25
Oregon	NELAP	4062	02-28-25
Pennsylvania	NELAP	68-00340	08-31-25
Texas	NELAP	T104704517-22-19	08-31-24
USDA	US Federal Programs	P330-18-00281	01-05-27
Virginia	NELAP	460175	09-14-24
West Virginia DEP	State	210	12-31-24

Method Summary

Client: AECOM
Job ID: 310-287163-1
Project/Site: Black Hawk County Landfill (IDNR)

Method	Method Description	Protocol	Laboratory
6020B	Metals (ICP/MS)	SW846	EET CF
9034	Sulfide, Acid soluble and Insoluble (Titrimetric)	SW846	EET CLE
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
Field Sampling	Field Sampling	EPA	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
9030B	Sulfide, Distillation (Acid Soluble and Insoluble)	SW846	EET CLE

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

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310-287163 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: AECOM			
City/State: CITY Johnston	STATE IA	Project: BHC LOWA	
Receipt Information			
Date/Time Received:	DATE 8/1/24	TIME 0905	Received By: JD

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☐ Lab Courier ☐ Lab Field Services ☑ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler?	☑ Yes	☐ No	*If yes:* Cooler ID:
Multiple Coolers?	☐ Yes	☑ No	*If yes:* Cooler # _____ of _____
Cooler Custody Seals Present? No	☐ Yes	☑ No	*If yes:* Cooler custody seals intact? ☐ Yes ☐ No
Sample Custody Seals Present? No	☐ Yes	☑ No	*If yes:* Sample custody seals intact? ☐ Yes ☐ No
Trip Blank Present?	☐ Yes	☑ No	*If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant. ☑ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID. R	Correction Factor (°C): 0.0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 5.5	Corrected Temp (°C): 5.5

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE. If yes, contact PM before proceeding If no, proceed with login

Additional Comments

Eurofins Cedar Falls
3019 Venture Way

Cedar Falls IA 50613
phone 319 277.2401 fax 319 277 2425

Chain of Custody Record

eurofins

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other IDNR

Eurofins Environment Testing America

Client Contact	Project Manager: Chris Oelkers	Site Contact:	Date: 8-1-24	COC No
AECOM	Tel/Fax:319-296-6878	Lab Contact:	Carrier:	1 of 1 COCs
501 Sycamore Street Suite 222	Analysis Turnaround Time			TALS Project #
Waterloo IA 50703	☑ CALENDAR DAYS ☐ WORKING DAYS			Sampler
(319) 232-6531 Phone	TAT if different from Below ____			For Lab Use Only:
(xxx) xxx-xxxx FAX	☑ 2 weeks			Walk-in Client
Project Name Black Hawk Co IDNR	☐ 1 week			Lab Sampling
Site Black Hawk County Landfill	☐ 2 days			Job / SDG No
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	Appendix I	TSS	Arsenic	Cobalt	Sulfide	Appendix I VOCs Only	Sample Specific Notes
OW-212B	7-31-24	1045	G	GW	2	N			X		X			Turbidity - 3.29 NTU
OW-225B			G	GW		N			X	X				
OW-226B	7-31-24	1145	G	GW	3	N			X	X		X		Turbidity - 19.15 NTU
OW-227B	7-31-24	1345	G	GW	1	N						X		Turbidity - 6.77 NTU
OW-401B			G	GW		N			X	X				

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for ____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No | Cooler Temp (°C) Obs'd ____ Corr'd ____ Therm ID No ____

Relinquished by: Ben Porter	Company: Accom	Date/Time: 8-1-24	Received by:	Company:	Date/Time: 8/2/24 0700
Relinquished by:	Company:	Date/Time	Received by:	Company:	Date/Time
Relinquished by:	Company:	Date/Time	Received in Laboratory by	Company:	Date/Time: 8/1/24 0830

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone: 319-277-2401 Fax: 319-277-2425

0.5/15

Chain of Custody Record

eurofins Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Bindert, Zach T	Carrier Tracking No(s):	COC No: 310-75014.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Zach.Bindert@et.eurofinsus.com	State of Origin: Iowa	Page: Page 1 of 1
Company: Eurofins Environment Testing North Centr		Accreditations Required (See note): State Iowa; State Program Iowa		Job #: 310-287163-1
Address: 180 S. Van Buren Avenue,	Due Date Requested: 8/14/2024			
City: Barberton	TAT Requested (days):			
State, Zip: OH, 44203				
Phone: 330-497-9396(Tel) 330-497-0772(Fax)	PO #:			
Email:	WO #:			
Project Name: Black Hawk County Landfill (IDNR)	Project #: 31017149			
Site: 310 Black Hawk County (IDNR)	SSOW#:			

Analysis Requested

Preservation Codes:

Other:

G120

Sample Identification Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water S=solid, O=waste/oil BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9034_Calc/9030B Sulfide	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
OW-226B (310-287163-2)	7/31/24	11:45 Central		Water			X	1	
OW-227B (310-287163-3)	7/31/24	13:45 Central		Water			X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing North Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing North Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing North Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing North Central, LLC.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I II III IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time: 8/2/24 1505	Company	Received by: JESSICA RIGDON	Date/Time: 8-3-24 1000	Company EETNC
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Eurofins - Cleveland Sample Receipt Form/Narrative Login # :
Barberton Facility

Client Eurofins - CF Site Name

Cooler unpacked by:

Cooler Received on 8-3-24 Opened on 8 3 24

FedEx: 1st Grd (Exp) UPS FAS Waypoint Client Drop Off Eurofins Courier Other

Receipt After-hours Drop-off Date/Time Storage Location

Eurofins Cooler # EC Foam Box Client Cooler Box Other

Packing material used: (Bubble Wrap) Foam Plastic Bag None Other

COOLANT: (Wet Ice) Blue Ice Dry Ice Water None

1 Cooler temperature upon receipt ☐ See Multiple Cooler Form

IR GUN # 19 (CF +1.0 °C) Observed Cooler Temp 0.5 °C Corrected Cooler Temp. 1.5 °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1	(Yes)	No
-Were the seals on the outside of the cooler(s) signed & dated?	(Yes)	No NA
-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)?	Yes	(No)
-Were tamper/custody seals intact and uncompromised?	(Yes)	No NA
3 Shippers' packing slip attached to the cooler(s)?	(Yes)	No
4 Did custody papers accompany the sample(s)?	(Yes)	No
5 Were the custody papers relinquished & signed in the appropriate place?	(Yes)	No
6. Was/were the person(s) who collected the samples clearly identified on the COC?	Yes	(No)
7 Did all bottles arrive in good condition (Unbroken)?	(Yes)	No
8 Could all bottle labels (ID/Date/Time) be reconciled with the COC?	(Yes)	No
9 For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp(Y/N)?		
10 Were correct bottle(s) used for the test(s) indicated?	(Yes)	No
11 Sufficient quantity received to perform indicated analyses?	(Yes)	No
12. Are these work share samples and all listed on the COC?	(Yes)	No
If yes, Questions 13-17 have been checked at the originating laboratory		
13 Were all preserved sample(s) at the correct pH upon receipt?	Yes	No NA pH Strip Lot# HC442471
14 Were VOAs on the COC?	Yes	No
15 Were air bubbles >6 mm in any VOA vials? ● ← Larger than this.	Yes	No NA
16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot #	Yes	No
17 Was a LL Hg or Me Hg trip blank present?	Yes	No

Tests that are not checked for pH by Receiving:
VOAs
Oil and Grease
TOC

Contacted PM Date by via Verbal Voice Mail Other

Concerning

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES ☐ additional next page

Samples processed by:

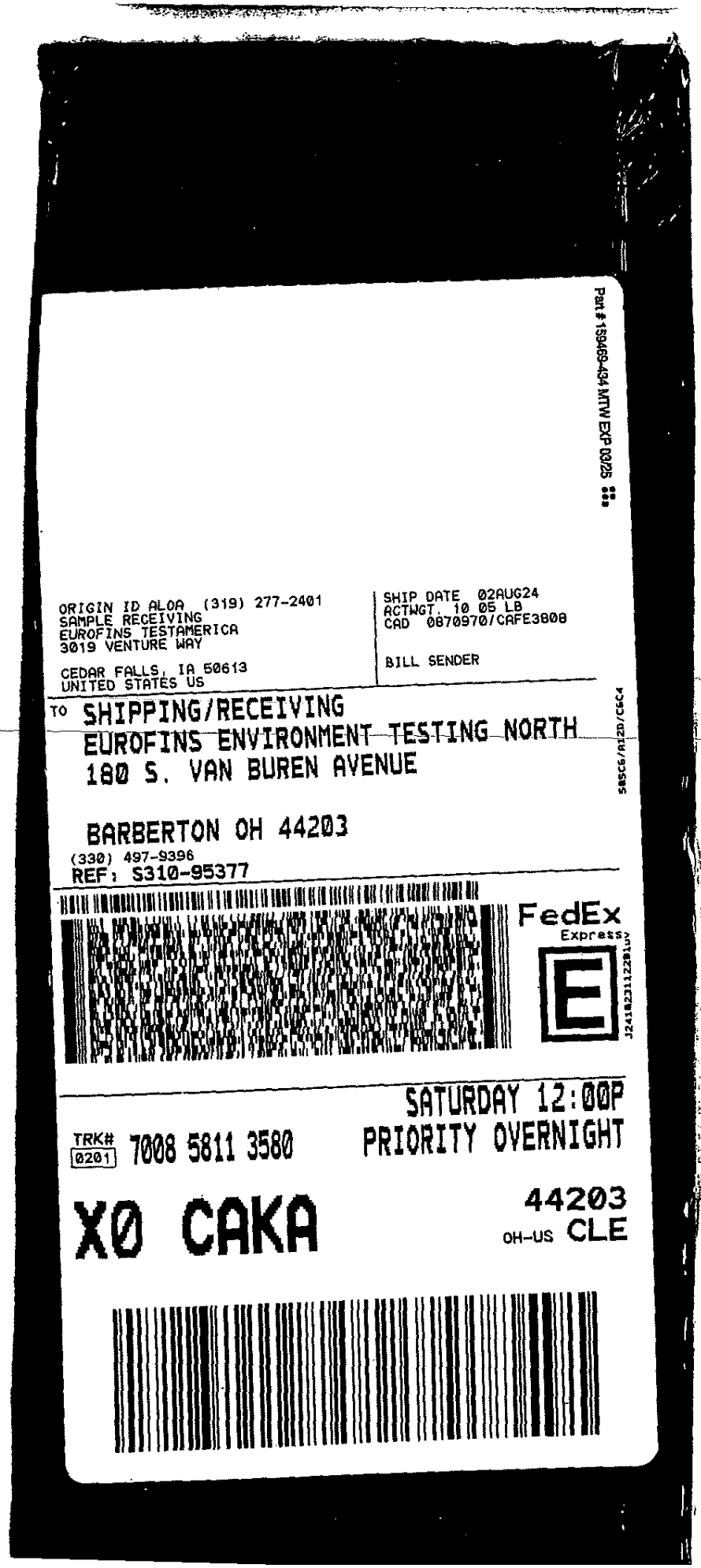
19. SAMPLE CONDITION

Sample(s) were received after the recommended holding time had expired.
Sample(s) were received in a broken container
Sample(s) were received with bubble >6 mm in diameter (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) were further preserved in the laboratory
Time preserved. Preservative(s) added/Lot number(s).

VOA Sample Preservation - Date/Time VOAs Frozen.


Part # 159469-434 MTW EXP 03/25
ORIGIN ID ALOA (319) 277-2401
SAMPLE RECEIVING
EUROFINS TESTAMERICA
3019 VENTURE WAY
CEDAR FALLS, IA 50613
UNITED STATES US
SHIP DATE 02AUG24
ACTWGT 10.05 LB
CAD 0870970/CAFE3800
BILL SENDER
TO SHIPPING/RECEIVING
EUROFINS ENVIRONMENT TESTING NORTH
180 S. VAN BUREN AVENUE
BARBERTON OH 44203
(330) 497-9396
REF: S310-95377
FedEx
Express
SATURDAY 12:00P
PRIORITY OVERNIGHT
TRK# 0201 7008 5811 3580
X0 CAKA
44203
OH-US CLE

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-287163-1

Login Number: 287163

List Source: Eurofins Cedar Falls

List Number: 1

Creator: Homolar, Dana J

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Chris Oelkers
AECOM
501 Sycamore Street
Suite #222
Waterloo, Iowa 50703

Generated 8/8/2024 12:38:32 AM

JOB DESCRIPTION

Black Hawk County Landfill (IDNR)
Summer 2024

JOB NUMBER

310-287278-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



Generated
8/8/2024 12:38:32 AM

Authorized for release by
Zach Bindert, Senior Project Manager
Zach.Bindert@et.eurofinsus.com
(319)595-2016

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Job ID: 310-287278-1 — Eurofins Cedar Falls

Job Narrative
310-287278-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 8/2/2024 10:38 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 19.1°C.

GC/MS VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Field Service / Mobile Lab
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Sample Summary

Client: AECOM
Job ID: 310-287278-1
Project/Site: Black Hawk County Landfill (IDNR)

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-287278-1	P-604C	Groundwater	08/02/24 10:00	08/02/24 10:38
310-287278-2	Trip Blank	Water	08/02/24 06:00	08/02/24 10:38

Detection Summary

Client: AECOM
Job ID: 310-287278-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: P-604C
Lab Sample ID: 310-287278-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone (MEK)	29.4		10.0	2.10	ug/L	1		8260D	Total/NA
Acetone	14.6		10.0	3.10	ug/L	1		8260D	Total/NA
m,p-Xylene	0.523	J	2.00	0.380	ug/L	1		8260D	Total/NA
Toluene	0.712	J	1.00	0.430	ug/L	1		8260D	Total/NA
Xylenes, Total	0.523	J	3.00	0.400	ug/L	1		8260D	Total/NA
Field Turbidity	14.26				NTU	1		Field Sampling	Total/NA

Client Sample ID: Trip Blank
Lab Sample ID: 310-287278-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	5.64	J	10.0	3.10	ug/L	1		8260D	Total/NA

This Detection Summary does not include radiochemical test results.

Client: AECOM
Job ID: 310-287278-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: P-604C
Lab Sample ID: 310-287278-1
Date Collected: 08/02/24 10:00
Matrix: Groundwater
Date Received: 08/02/24 10:38

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			08/06/24 05:26	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			08/06/24 05:26	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			08/06/24 05:26	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			08/06/24 05:26	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			08/06/24 05:26	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			08/06/24 05:26	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			08/06/24 05:26	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			08/06/24 05:26	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			08/06/24 05:26	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			08/06/24 05:26	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			08/06/24 05:26	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			08/06/24 05:26	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			08/06/24 05:26	1
2-Butanone (MEK)	**29.4**		10.0	2.10	ug/L			08/06/24 05:26	1
2-Hexanone	<2.00		10.0	2.00	ug/L			08/06/24 05:26	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			08/06/24 05:26	1
Acetone	**14.6**		10.0	3.10	ug/L			08/06/24 05:26	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			08/06/24 05:26	1
Benzene	<0.220		0.500	0.220	ug/L			08/06/24 05:26	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			08/06/24 05:26	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			08/06/24 05:26	1
Bromoform	<0.780		5.00	0.780	ug/L			08/06/24 05:26	1
Bromomethane	<1.10		4.00	1.10	ug/L			08/06/24 05:26	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			08/06/24 05:26	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			08/06/24 05:26	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			08/06/24 05:26	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			08/06/24 05:26	1
Chloroethane	<0.790		4.00	0.790	ug/L			08/06/24 05:26	1
Chloroform	<1.30		3.00	1.30	ug/L			08/06/24 05:26	1
Chloromethane	<0.610		3.00	0.610	ug/L			08/06/24 05:26	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			08/06/24 05:26	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			08/06/24 05:26	1
Dibromomethane	<0.330		1.00	0.330	ug/L			08/06/24 05:26	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			08/06/24 05:26	1
Iodomethane	<7.00		10.0	7.00	ug/L			08/06/24 05:26	1
m,p-Xylene	**0.523**	**J**	2.00	0.380	ug/L			08/06/24 05:26	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			08/06/24 05:26	1
o-Xylene	<0.400		1.00	0.400	ug/L			08/06/24 05:26	1
Styrene	<0.370		1.00	0.370	ug/L			08/06/24 05:26	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			08/06/24 05:26	1
Toluene	**0.712**	**J**	1.00	0.430	ug/L			08/06/24 05:26	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			08/06/24 05:26	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			08/06/24 05:26	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			08/06/24 05:26	1
Trichloroethene	<0.430		1.00	0.430	ug/L			08/06/24 05:26	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			08/06/24 05:26	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			08/06/24 05:26	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			08/06/24 05:26	1
Xylenes, Total	**0.523**	**J**	3.00	0.400	ug/L			08/06/24 05:26	1

Client: AECOM
Job ID: 310-287278-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: P-604C
Lab Sample ID: 310-287278-1
Date Collected: 08/02/24 10:00
Matrix: Groundwater
Date Received: 08/02/24 10:38

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*112*		*73 - 130*		*08/06/24 05:26*	*1*
Toluene-d8 (Surr)	*93*		*80 - 120*		*08/06/24 05:26*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*		*08/06/24 05:26*	*1*

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**14.26**				NTU			08/02/24 10:00	1

Client: AECOM
Job ID: 310-287278-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Trip Blank
Lab Sample ID: 310-287278-2
Date Collected: 08/02/24 06:00
Matrix: Water
Date Received: 08/02/24 10:38

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			08/06/24 00:52	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			08/06/24 00:52	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			08/06/24 00:52	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			08/06/24 00:52	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			08/06/24 00:52	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			08/06/24 00:52	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			08/06/24 00:52	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			08/06/24 00:52	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			08/06/24 00:52	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			08/06/24 00:52	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			08/06/24 00:52	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			08/06/24 00:52	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			08/06/24 00:52	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			08/06/24 00:52	1
2-Hexanone	<2.00		10.0	2.00	ug/L			08/06/24 00:52	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			08/06/24 00:52	1
Acetone	**5.64**	**J**	10.0	3.10	ug/L			08/06/24 00:52	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			08/06/24 00:52	1
Benzene	<0.220		0.500	0.220	ug/L			08/06/24 00:52	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			08/06/24 00:52	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			08/06/24 00:52	1
Bromoform	<0.780		5.00	0.780	ug/L			08/06/24 00:52	1
Bromomethane	<1.10		4.00	1.10	ug/L			08/06/24 00:52	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			08/06/24 00:52	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			08/06/24 00:52	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			08/06/24 00:52	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			08/06/24 00:52	1
Chloroethane	<0.790		4.00	0.790	ug/L			08/06/24 00:52	1
Chloroform	<1.30		3.00	1.30	ug/L			08/06/24 00:52	1
Chloromethane	<0.610		3.00	0.610	ug/L			08/06/24 00:52	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			08/06/24 00:52	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			08/06/24 00:52	1
Dibromomethane	<0.330		1.00	0.330	ug/L			08/06/24 00:52	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			08/06/24 00:52	1
Iodomethane	<7.00		10.0	7.00	ug/L			08/06/24 00:52	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			08/06/24 00:52	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			08/06/24 00:52	1
o-Xylene	<0.400		1.00	0.400	ug/L			08/06/24 00:52	1
Styrene	<0.370		1.00	0.370	ug/L			08/06/24 00:52	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			08/06/24 00:52	1
Toluene	<0.430		1.00	0.430	ug/L			08/06/24 00:52	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			08/06/24 00:52	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			08/06/24 00:52	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			08/06/24 00:52	1
Trichloroethene	<0.430		1.00	0.430	ug/L			08/06/24 00:52	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			08/06/24 00:52	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			08/06/24 00:52	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			08/06/24 00:52	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			08/06/24 00:52	1

Client: AECOM
Job ID: 310-287278-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Trip Blank
Lab Sample ID: 310-287278-2
Date Collected: 08/02/24 06:00
Matrix: Water
Date Received: 08/02/24 10:38

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	111		73 - 130		08/06/24 00:52	1
Toluene-d8 (Surr)	94		80 - 120		08/06/24 00:52	1
4-Bromofluorobenzene (Surr)	104		80 - 120		08/06/24 00:52	1

Definitions/Glossary

Client: AECOM
Job ID: 310-287278-1
Project/Site: Black Hawk County Landfill (IDNR)

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Surrogate Summary

Client: AECOM
Job ID: 310-287278-1
Project/Site: Black Hawk County Landfill (IDNR)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Groundwater — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-287278-1	P-604C	112	93	102

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-287278-2	Trip Blank	111	94	104
LCS 310-429394/6	Lab Control Sample	97	96	98
LCS 310-429394/7	Lab Control Sample	111	95	102
MB 310-429394/5	Method Blank	114	93	104

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 310-429394/5
Matrix: Water
Analysis Batch: 429394

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			08/05/24 23:21	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			08/05/24 23:21	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			08/05/24 23:21	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			08/05/24 23:21	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			08/05/24 23:21	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			08/05/24 23:21	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			08/05/24 23:21	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			08/05/24 23:21	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			08/05/24 23:21	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			08/05/24 23:21	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			08/05/24 23:21	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			08/05/24 23:21	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			08/05/24 23:21	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			08/05/24 23:21	1
2-Hexanone	<2.00		10.0	2.00	ug/L			08/05/24 23:21	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			08/05/24 23:21	1
Acetone	<3.10		10.0	3.10	ug/L			08/05/24 23:21	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			08/05/24 23:21	1
Benzene	<0.220		0.500	0.220	ug/L			08/05/24 23:21	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			08/05/24 23:21	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			08/05/24 23:21	1
Bromoform	<0.780		5.00	0.780	ug/L			08/05/24 23:21	1
Bromomethane	<1.10		4.00	1.10	ug/L			08/05/24 23:21	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			08/05/24 23:21	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			08/05/24 23:21	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			08/05/24 23:21	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			08/05/24 23:21	1
Chloroethane	<0.790		4.00	0.790	ug/L			08/05/24 23:21	1
Chloroform	<1.30		3.00	1.30	ug/L			08/05/24 23:21	1
Chloromethane	<0.610		3.00	0.610	ug/L			08/05/24 23:21	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			08/05/24 23:21	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			08/05/24 23:21	1
Dibromomethane	<0.330		1.00	0.330	ug/L			08/05/24 23:21	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			08/05/24 23:21	1
Iodomethane	<7.00		10.0	7.00	ug/L			08/05/24 23:21	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			08/05/24 23:21	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			08/05/24 23:21	1
o-Xylene	<0.400		1.00	0.400	ug/L			08/05/24 23:21	1
Styrene	<0.370		1.00	0.370	ug/L			08/05/24 23:21	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			08/05/24 23:21	1
Toluene	<0.430		1.00	0.430	ug/L			08/05/24 23:21	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			08/05/24 23:21	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			08/05/24 23:21	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			08/05/24 23:21	1
Trichloroethene	<0.430		1.00	0.430	ug/L			08/05/24 23:21	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			08/05/24 23:21	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			08/05/24 23:21	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			08/05/24 23:21	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-429394/5
Matrix: Water
Analysis Batch: 429394

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	<0.400		3.00	0.400	ug/L			08/05/24 23:21	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*114*		*73 - 130*		*08/05/24 23:21*	*1*
Toluene-d8 (Surr)	*93*		*80 - 120*		*08/05/24 23:21*	*1*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*		*08/05/24 23:21*	*1*

Lab Sample ID: LCS 310-429394/6
Matrix: Water
Analysis Batch: 429394

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	20.0	21.68		ug/L		108	71 - 120
1,1,1-Trichloroethane	20.0	21.31		ug/L		107	73 - 129
1,1,2,2-Tetrachloroethane	20.0	22.37		ug/L		112	68 - 124
1,1,2-Trichloroethane	20.0	22.02		ug/L		110	73 - 123
1,1-Dichloroethane	20.0	21.46		ug/L		107	70 - 127
1,1-Dichloroethene	20.0	20.35		ug/L		102	63 - 132
1,2,3-Trichloropropane	20.0	22.28		ug/L		111	65 - 127
1,2-Dibromo-3-Chloropropane	20.0	20.54		ug/L		103	50 - 150
1,2-Dibromoethane (EDB)	20.0	22.13		ug/L		111	75 - 125
1,2-Dichlorobenzene	20.0	20.74		ug/L		104	74 - 120
1,2-Dichloroethane	20.0	21.46		ug/L		107	71 - 125
1,2-Dichloropropane	20.0	20.59		ug/L		103	73 - 124
1,4-Dichlorobenzene	20.0	20.38		ug/L		102	72 - 120
2-Butanone (MEK)	40.0	48.17		ug/L		120	50 - 150
2-Hexanone	40.0	45.11		ug/L		113	60 - 140
4-Methyl-2-pentanone (MIBK)	40.0	47.27		ug/L		118	60 - 139
Acetone	40.0	42.88		ug/L		107	50 - 150
Acrylonitrile	200	229.4		ug/L		115	50 - 150
Benzene	20.0	21.82		ug/L		109	72 - 124
Bromochloromethane	20.0	21.32		ug/L		107	73 - 130
Bromodichloromethane	20.0	19.95		ug/L		100	74 - 122
Bromoform	20.0	20.42		ug/L		102	61 - 122
Carbon disulfide	20.0	20.26		ug/L		101	59 - 135
Carbon tetrachloride	20.0	21.56		ug/L		108	67 - 132
Chlorobenzene	20.0	20.98		ug/L		105	76 - 120
Chlorodibromomethane	20.0	21.33		ug/L		107	71 - 121
Chloroform	20.0	20.08		ug/L		100	72 - 125
cis-1,2-Dichloroethene	20.0	20.78		ug/L		104	74 - 123
cis-1,3-Dichloropropene	20.0	21.42		ug/L		107	71 - 125
Dibromomethane	20.0	19.73		ug/L		99	74 - 125
Ethylbenzene	20.0	21.41		ug/L		107	74 - 122
Iodomethane	20.0	15.64		ug/L		78	10 - 150
Methylene Chloride	20.0	21.58		ug/L		108	50 - 150
Styrene	20.0	21.50		ug/L		108	74 - 121
Tetrachloroethene	20.0	21.01		ug/L		105	71 - 130
Toluene	20.0	20.47		ug/L		102	74 - 123

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-429394/6
Matrix: Water
Analysis Batch: 429394

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
trans-1,2-Dichloroethene	20.0	20.98		ug/L		105	70 - 126
trans-1,3-Dichloropropene	20.0	21.04		ug/L		105	69 - 123
trans-1,4-Dichloro-2-butene	20.0	21.38		ug/L		107	50 - 150
Trichloroethene	20.0	20.77		ug/L		104	72 - 126
Vinyl acetate	40.0	43.86		ug/L		110	50 - 150
Xylenes, Total	40.0	42.07		ug/L		105	73 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*97*		*73 - 130*
Toluene-d8 (Surr)	*96*		*80 - 120*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*

Lab Sample ID: LCS 310-429394/7
Matrix: Water
Analysis Batch: 429394

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	16.38		ug/L		82	23 - 150
Chloroethane	20.0	22.88		ug/L		114	54 - 136
Chloromethane	20.0	22.16		ug/L		111	38 - 150
Trichlorofluoromethane	20.0	23.52		ug/L		118	54 - 149
Vinyl chloride	20.0	22.60		ug/L		113	56 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*111*		*73 - 130*
Toluene-d8 (Surr)	*95*		*80 - 120*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*

QC Association Summary

Client: AECOM
Job ID: 310-287278-1
Project/Site: Black Hawk County Landfill (IDNR)

GC/MS VOA

Analysis Batch: 429394

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-287278-1	P-604C	Total/NA	Groundwater	8260D	
310-287278-2	Trip Blank	Total/NA	Water	8260D	
MB 310-429394/5	Method Blank	Total/NA	Water	8260D	
LCS 310-429394/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-429394/7	Lab Control Sample	Total/NA	Water	8260D	

Field Service / Mobile Lab

Analysis Batch: 429376

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-287278-1	P-604C	Total/NA	Groundwater	Field Sampling	

Lab Chronicle

Client: AECOM
Job ID: 310-287278-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: P-604C
Lab Sample ID: 310-287278-1
Date Collected: 08/02/24 10:00
Matrix: Groundwater
Date Received: 08/02/24 10:38

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	429394	FE5V	EET CF	08/06/24 05:26
Total/NA	Analysis	Field Sampling		1	429376	BJ0R	EET CF	08/02/24 10:00

Client Sample ID: Trip Blank
Lab Sample ID: 310-287278-2
Date Collected: 08/02/24 06:00
Matrix: Water
Date Received: 08/02/24 10:38

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	429394	FE5V	EET CF	08/06/24 00:52

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Accreditation/Certification Summary

Client: AECOM
Job ID: 310-287278-1
Project/Site: Black Hawk County Landfill (IDNR)

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8260D		Groundwater	m,p-Xylene
8260D		Groundwater	o-Xylene
8260D		Water	m,p-Xylene
8260D		Water	o-Xylene
Field Sampling		Groundwater	Field Turbidity

Method Summary

Client: AECOM
Job ID: 310-287278-1
Project/Site: Black Hawk County Landfill (IDNR)

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CF
Field Sampling	Field Sampling	EPA	EET CF
5030B	Purge and Trap	SW846	EET CF

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

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310-287278 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: AECOM

City/State: CITY Waterloo STATE IA

Project: BLK HK CO LF

Receipt Information

Date/Time Received: DATE 8/2/24 TIME 10:38

Received By: JL

Delivery Type: ☐ UPS ☐ FedEx ☑ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ Lab Field Services ☑ Client Drop-off ☐ Other: _____

Condition of Cooler/Containers

Sample(s) received in Cooler?	☑ Yes	☐ No	*If yes:* Cooler ID:
Multiple Coolers?	☐ Yes	☑ No	*If yes:* Cooler # _____ of _____
Cooler Custody Seals Present? No	☐ Yes	☑ No	*If yes:* Cooler custody seals intact? ☐ Yes ☐ No
Sample Custody Seals Present? No	☐ Yes	☑ No	*If yes:* Sample custody seals intact? ☐ Yes ☐ No
Trip Blank Present?	☐ Yes	☑ No	*If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☑ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other: _____ ☐ NONE

Thermometer ID: 4 | Correction Factor (°C): 0

• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 19.1 | Corrected Temp (°C): 19.1

• Sample Container Temperature

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☑ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE If yes, contact PM before proceeding If no, proceed with login

Additional Comments

Eurofins Cedar Falls
3019 Venture Way

Cedar Falls IA 50613
phone 319 277.2401 fax 319.277 2425

Chain of Custody Record

eurofins

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other IDNR

Eurofins Environment Testing America

Client Contact	Project Manager: Chris Oelkers	Site Contact:	Date: 8-2-24	COC No
AECOM	Tel/Fax:319-296-6878	Lab Contact:	Carrier:	1 of 1 COCs
501 Sycamore Street Suite 222	Analysis Turnaround Time			TALS Project #
Waterloo IA 50703	☑ CALENDAR DAYS ☐ WORKING DAYS			Sampler
(319) 232-6531 Phone	TAT if different from Below ____			For Lab Use Only:
(xxx) xxx-xxxx FAX	☐ 2 weeks			Walk-in Client
Project Name Black Hawk Co IDNR	☐ 1 week			Lab Sampling
Site Black Hawk County Landfill	☐ 2 days			Job / SDG No
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	Appendix I	TSS	Arsenic	Cobalt	Sulfide	Appendix I VOCs Only	Sample Specific Notes
MW-712B			G	GW		N			X		X			
P-214CR			G	GW		N		X	X					
P-215CR			G	GW		N		X	X					
P-216CR			G	GW		N		X	X					
P-604C	8-2-24	1000	G	GW	3	N							X	Turbidity - 14.26 NTU
Equipment Blank-1 Deep Well			G	GW		N		X	X					
P-215CR-FD			G	GW		N		X	X					
Trip Blank	8-2-24	0600	G	W	2	N							X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for ____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No | Cooler Temp (°C) Obs'd ____ Corr'd ____ Therm ID No ____

Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Ben Porter	Accom	8-2-24			
Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Relinquished by	Company	Date/Time	Received in Laboratory by	Company	Date/Time
					8/2/24 1098

8/8/2024

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-287278-1

Login Number: 287278

List Source: Eurofins Cedar Falls

List Number: 1

Creator: Homolar, Dana J

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.		
The cooler's custody seal, if present, is intact.		
Sample custody seals, if present, are intact.		
The cooler or samples do not appear to have been compromised or tampered with.		
Samples were received on ice.		
Cooler Temperature is acceptable.		
Cooler Temperature is recorded.		
COC is present.		
COC is filled out in ink and legible.		
COC is filled out with all pertinent information.		
Is the Field Sampler's name present on COC?		
There are no discrepancies between the containers received and the COC.		
Samples are received within Holding Time (excluding tests with immediate HTs)		
Sample containers have legible labels.		
Containers are not broken or leaking.		
Sample collection date/times are provided.		
Appropriate sample containers are used.		
Sample bottles are completely filled.		
Sample Preservation Verified.		
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs		
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").		
Multiphasic samples are not present.		
Samples do not require splitting or compositing.		
Residual Chlorine Checked.		

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ANALYTICAL REPORT

PREPARED FOR

Attn: Chris Oelkers
AECOM
501 Sycamore Street
Suite #222
Waterloo, Iowa 50703

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JOB DESCRIPTION

Black Hawk County Landfill (IDNR)
Summer 2024

JOB NUMBER

310-287913-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



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Authorized for release by
Zach Bindert, Senior Project Manager
Zach.Bindert@et.eurofinsus.com
(319)595-2016

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Job Narrative
310-287913-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 8/9/2024 4:05 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.7°C.

GC/MS VOA
Method 8260D: The laboratory control sample (LCS) for analytical batch 310-430168 recovered outside control limits for the following analytes: cis-1,3-Dichloropropene, cis-1,2-Dichloroethene, and 1,2-Dichloropropane. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Method 8260D: The continuing calibration verification (CCV) associated with batch 310-430305 recovered above the upper control limit for cis-1,3-Dichloropropene (22.7%D). The LCS associated with this CCV passed CCV criteria for the affected analyte; therefore, the data have been reported. The associated sample is impacted: (CCV 310-430305/3).

Method 8260D: The method requirement for no headspace was not met. The following volatile sample was analyzed with headspace in the sample container: Trip Blank (310-287913-6).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Field Service / Mobile Lab
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Sample Summary

Client: AECOM
Job ID: 310-287913-1
Project/Site: Black Hawk County Landfill (IDNR)

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-287913-1	P-214CR	Ground Water	08/09/24 12:30	08/09/24 16:05
310-287913-2	P-215CR	Ground Water	08/09/24 10:00	08/09/24 16:05
310-287913-3	P-216CR	Ground Water	08/09/24 09:00	08/09/24 16:05
310-287913-4	Equipment Blank-1	Ground Water	08/09/24 13:00	08/09/24 16:05
310-287913-5	P-215CR-FD	Ground Water	08/09/24 10:00	08/09/24 16:05
310-287913-6	Trip Blank	Water	08/09/24 06:00	08/09/24 16:05

Detection Summary

Client: AECOM
Job ID: 310-287913-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: P-214CR — Lab Sample ID: 310-287913-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.842	J	2.00	0.530	ug/L	1		6020B	Total/NA
Barium	121		2.00	0.660	ug/L	1		6020B	Total/NA
Cobalt	0.176	J	0.500	0.170	ug/L	1		6020B	Total/NA
Total Suspended Solids	53.5		1.88	1.39	mg/L	1		I-3765-85	Total/NA
Field Turbidity	8.98				NTU	1		Field Sampling	Total/NA

Client Sample ID: P-215CR — Lab Sample ID: 310-287913-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	25.7		2.00	0.660	ug/L	1		6020B	Total/NA
Cobalt	0.914		0.500	0.170	ug/L	1		6020B	Total/NA
Thallium	0.635	J	1.00	0.570	ug/L	1		6020B	Total/NA
Total Suspended Solids	9.00		1.88	1.39	mg/L	1		I-3765-85	Total/NA
Field Turbidity	8.18				NTU	1		Field Sampling	Total/NA

Client Sample ID: P-216CR — Lab Sample ID: 310-287913-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	24.8		2.00	0.660	ug/L	1		6020B	Total/NA
Cobalt	0.857		0.500	0.170	ug/L	1		6020B	Total/NA
Nickel	3.60	J	5.00	2.10	ug/L	1		6020B	Total/NA
Total Suspended Solids	5.75		1.88	1.39	mg/L	1		I-3765-85	Total/NA
Field Turbidity	3.03				NTU	1		Field Sampling	Total/NA

Client Sample ID: Equipment Blank-1 — Lab Sample ID: 310-287913-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Bromodichloromethane	0.404	J	1.00	0.390	ug/L	1		8260D	Total/NA
Bromoform	1.69	J	5.00	0.780	ug/L	1		8260D	Total/NA
Barium	71.5		2.00	0.660	ug/L	1		6020B	Total/NA

Client Sample ID: P-215CR-FD — Lab Sample ID: 310-287913-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	25.6		2.00	0.660	ug/L	1		6020B	Total/NA
Cobalt	0.874		0.500	0.170	ug/L	1		6020B	Total/NA
Total Suspended Solids	8.13		1.88	1.39	mg/L	1		I-3765-85	Total/NA

Client Sample ID: Trip Blank — Lab Sample ID: 310-287913-6

No Detections.

This Detection Summary does not include radiochemical test results.

Client: AECOM
Job ID: 310-287913-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: P-214CR
Lab Sample ID: 310-287913-1
Date Collected: 08/09/24 12:30
Matrix: Ground Water
Date Received: 08/09/24 16:05

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			08/13/24 17:10	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			08/13/24 17:10	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			08/13/24 17:10	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			08/13/24 17:10	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			08/13/24 17:10	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			08/13/24 17:10	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			08/13/24 17:10	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			08/13/24 17:10	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			08/13/24 17:10	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			08/13/24 17:10	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			08/13/24 17:10	1
1,2-Dichloropropane	<0.270	*+	1.00	0.270	ug/L			08/13/24 17:10	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			08/13/24 17:10	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			08/13/24 17:10	1
2-Hexanone	<2.00		10.0	2.00	ug/L			08/13/24 17:10	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			08/13/24 17:10	1
Acetone	<3.10		10.0	3.10	ug/L			08/13/24 17:10	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			08/13/24 17:10	1
Benzene	<0.220		0.500	0.220	ug/L			08/13/24 17:10	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			08/13/24 17:10	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			08/13/24 17:10	1
Bromoform	<0.780		5.00	0.780	ug/L			08/13/24 17:10	1
Bromomethane	<1.10		4.00	1.10	ug/L			08/13/24 17:10	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			08/13/24 17:10	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			08/13/24 17:10	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			08/13/24 17:10	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			08/13/24 17:10	1
Chloroethane	<0.790		4.00	0.790	ug/L			08/13/24 17:10	1
Chloroform	<1.30		3.00	1.30	ug/L			08/13/24 17:10	1
Chloromethane	<0.610		3.00	0.610	ug/L			08/13/24 17:10	1
cis-1,2-Dichloroethene	<0.210	*+	1.00	0.210	ug/L			08/13/24 17:10	1
cis-1,3-Dichloropropene	<0.250	*+	5.00	0.250	ug/L			08/13/24 17:10	1
Dibromomethane	<0.330		1.00	0.330	ug/L			08/13/24 17:10	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			08/13/24 17:10	1
Iodomethane	<7.00		10.0	7.00	ug/L			08/13/24 17:10	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			08/13/24 17:10	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			08/13/24 17:10	1
o-Xylene	<0.400		1.00	0.400	ug/L			08/13/24 17:10	1
Styrene	<0.370		1.00	0.370	ug/L			08/13/24 17:10	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			08/13/24 17:10	1
Toluene	<0.430		1.00	0.430	ug/L			08/13/24 17:10	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			08/13/24 17:10	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			08/13/24 17:10	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			08/13/24 17:10	1
Trichloroethene	<0.430		1.00	0.430	ug/L			08/13/24 17:10	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			08/13/24 17:10	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			08/13/24 17:10	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			08/13/24 17:10	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			08/13/24 17:10	1

Client: AECOM
Job ID: 310-287913-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: P-214CR
Date Collected: 08/09/24 12:30
Date Received: 08/09/24 16:05

Lab Sample ID: 310-287913-1
Matrix: Ground Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*103*		*73 - 130*		*08/13/24 17:10*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*08/13/24 17:10*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*08/13/24 17:10*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		08/14/24 09:00	08/15/24 12:50	1
Arsenic	**0.842**	**J**	2.00	0.530	ug/L		08/14/24 09:00	08/15/24 12:50	1
Barium	**121**		2.00	0.660	ug/L		08/14/24 09:00	08/15/24 12:50	1
Beryllium	<0.330		1.00	0.330	ug/L		08/14/24 09:00	08/15/24 12:50	1
Cadmium	<0.100		0.200	0.100	ug/L		08/14/24 09:00	08/15/24 12:50	1
Chromium	<1.20		5.00	1.20	ug/L		08/14/24 09:00	08/15/24 12:50	1
Cobalt	**0.176**	**J**	0.500	0.170	ug/L		08/14/24 09:00	08/15/24 12:50	1
Copper	<1.80		5.00	1.80	ug/L		08/14/24 09:00	08/15/24 12:50	1
Lead	<0.260		0.500	0.260	ug/L		08/14/24 09:00	08/15/24 12:50	1
Nickel	<2.10		5.00	2.10	ug/L		08/14/24 09:00	08/20/24 20:15	1
Selenium	<1.40		5.00	1.40	ug/L		08/14/24 09:00	08/15/24 12:50	1
Silver	<0.500		1.00	0.500	ug/L		08/14/24 09:00	08/15/24 12:50	1
Thallium	<0.570		1.00	0.570	ug/L		08/14/24 09:00	08/15/24 12:50	1
Vanadium	<1.10		5.00	1.10	ug/L		08/14/24 09:00	08/15/24 12:50	1
Zinc	<9.70		20.0	9.70	ug/L		08/14/24 09:00	08/15/24 12:50	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**53.5**		1.88	1.39	mg/L			08/13/24 11:55	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**8.98**				NTU			08/09/24 12:30	1

Client: AECOM
Job ID: 310-287913-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: P-215CR
Lab Sample ID: 310-287913-2
Date Collected: 08/09/24 10:00
Matrix: Ground Water
Date Received: 08/09/24 16:05

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			08/13/24 17:33	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			08/13/24 17:33	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			08/13/24 17:33	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			08/13/24 17:33	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			08/13/24 17:33	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			08/13/24 17:33	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			08/13/24 17:33	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			08/13/24 17:33	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			08/13/24 17:33	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			08/13/24 17:33	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			08/13/24 17:33	1
1,2-Dichloropropane	<0.270	*+	1.00	0.270	ug/L			08/13/24 17:33	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			08/13/24 17:33	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			08/13/24 17:33	1
2-Hexanone	<2.00		10.0	2.00	ug/L			08/13/24 17:33	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			08/13/24 17:33	1
Acetone	<3.10		10.0	3.10	ug/L			08/13/24 17:33	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			08/13/24 17:33	1
Benzene	<0.220		0.500	0.220	ug/L			08/13/24 17:33	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			08/13/24 17:33	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			08/13/24 17:33	1
Bromoform	<0.780		5.00	0.780	ug/L			08/13/24 17:33	1
Bromomethane	<1.10		4.00	1.10	ug/L			08/13/24 17:33	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			08/13/24 17:33	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			08/13/24 17:33	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			08/13/24 17:33	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			08/13/24 17:33	1
Chloroethane	<0.790		4.00	0.790	ug/L			08/13/24 17:33	1
Chloroform	<1.30		3.00	1.30	ug/L			08/13/24 17:33	1
Chloromethane	<0.610		3.00	0.610	ug/L			08/13/24 17:33	1
cis-1,2-Dichloroethene	<0.210	*+	1.00	0.210	ug/L			08/13/24 17:33	1
cis-1,3-Dichloropropene	<0.250	*+	5.00	0.250	ug/L			08/13/24 17:33	1
Dibromomethane	<0.330		1.00	0.330	ug/L			08/13/24 17:33	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			08/13/24 17:33	1
Iodomethane	<7.00		10.0	7.00	ug/L			08/13/24 17:33	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			08/13/24 17:33	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			08/13/24 17:33	1
o-Xylene	<0.400		1.00	0.400	ug/L			08/13/24 17:33	1
Styrene	<0.370		1.00	0.370	ug/L			08/13/24 17:33	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			08/13/24 17:33	1
Toluene	<0.430		1.00	0.430	ug/L			08/13/24 17:33	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			08/13/24 17:33	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			08/13/24 17:33	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			08/13/24 17:33	1
Trichloroethene	<0.430		1.00	0.430	ug/L			08/13/24 17:33	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			08/13/24 17:33	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			08/13/24 17:33	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			08/13/24 17:33	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			08/13/24 17:33	1

Client: AECOM
Job ID: 310-287913-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: P-215CR
Lab Sample ID: 310-287913-2

Date Collected: 08/09/24 10:00
Matrix: Ground Water

Date Received: 08/09/24 16:05

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*102*		*73 - 130*		*08/13/24 17:33*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*08/13/24 17:33*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*08/13/24 17:33*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		08/14/24 09:00	08/15/24 13:09	1
Arsenic	<0.530		2.00	0.530	ug/L		08/14/24 09:00	08/15/24 13:09	1
Barium	**25.7**		2.00	0.660	ug/L		08/14/24 09:00	08/15/24 13:09	1
Beryllium	<0.330		1.00	0.330	ug/L		08/14/24 09:00	08/21/24 14:38	1
Cadmium	<0.100		0.200	0.100	ug/L		08/14/24 09:00	08/15/24 13:09	1
Chromium	<1.20		5.00	1.20	ug/L		08/14/24 09:00	08/15/24 13:09	1
Cobalt	**0.914**		0.500	0.170	ug/L		08/14/24 09:00	08/15/24 13:09	1
Copper	<1.80		5.00	1.80	ug/L		08/14/24 09:00	08/15/24 13:09	1
Lead	<0.260		0.500	0.260	ug/L		08/14/24 09:00	08/15/24 13:09	1
Nickel	<2.10		5.00	2.10	ug/L		08/14/24 09:00	08/20/24 20:39	1
Selenium	<1.40		5.00	1.40	ug/L		08/14/24 09:00	08/15/24 13:09	1
Silver	<0.500		1.00	0.500	ug/L		08/14/24 09:00	08/15/24 13:09	1
Thallium	**0.635**	**J**	1.00	0.570	ug/L		08/14/24 09:00	08/15/24 13:09	1
Vanadium	<1.10		5.00	1.10	ug/L		08/14/24 09:00	08/15/24 13:09	1
Zinc	<9.70		20.0	9.70	ug/L		08/14/24 09:00	08/15/24 13:09	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**9.00**		1.88	1.39	mg/L			08/13/24 11:55	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**8.18**				NTU			08/09/24 10:00	1

Client: AECOM
Job ID: 310-287913-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: P-216CR
Lab Sample ID: 310-287913-3
Date Collected: 08/09/24 09:00
Matrix: Ground Water
Date Received: 08/09/24 16:05

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			08/13/24 17:55	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			08/13/24 17:55	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			08/13/24 17:55	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			08/13/24 17:55	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			08/13/24 17:55	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			08/13/24 17:55	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			08/13/24 17:55	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			08/13/24 17:55	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			08/13/24 17:55	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			08/13/24 17:55	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			08/13/24 17:55	1
1,2-Dichloropropane	<0.270	*+	1.00	0.270	ug/L			08/13/24 17:55	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			08/13/24 17:55	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			08/13/24 17:55	1
2-Hexanone	<2.00		10.0	2.00	ug/L			08/13/24 17:55	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			08/13/24 17:55	1
Acetone	<3.10		10.0	3.10	ug/L			08/13/24 17:55	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			08/13/24 17:55	1
Benzene	<0.220		0.500	0.220	ug/L			08/13/24 17:55	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			08/13/24 17:55	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			08/13/24 17:55	1
Bromoform	<0.780		5.00	0.780	ug/L			08/13/24 17:55	1
Bromomethane	<1.10		4.00	1.10	ug/L			08/13/24 17:55	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			08/13/24 17:55	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			08/13/24 17:55	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			08/13/24 17:55	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			08/13/24 17:55	1
Chloroethane	<0.790		4.00	0.790	ug/L			08/13/24 17:55	1
Chloroform	<1.30		3.00	1.30	ug/L			08/13/24 17:55	1
Chloromethane	<0.610		3.00	0.610	ug/L			08/13/24 17:55	1
cis-1,2-Dichloroethene	<0.210	*+	1.00	0.210	ug/L			08/13/24 17:55	1
cis-1,3-Dichloropropene	<0.250	*+	5.00	0.250	ug/L			08/13/24 17:55	1
Dibromomethane	<0.330		1.00	0.330	ug/L			08/13/24 17:55	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			08/13/24 17:55	1
Iodomethane	<7.00		10.0	7.00	ug/L			08/13/24 17:55	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			08/13/24 17:55	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			08/13/24 17:55	1
o-Xylene	<0.400		1.00	0.400	ug/L			08/13/24 17:55	1
Styrene	<0.370		1.00	0.370	ug/L			08/13/24 17:55	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			08/13/24 17:55	1
Toluene	<0.430		1.00	0.430	ug/L			08/13/24 17:55	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			08/13/24 17:55	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			08/13/24 17:55	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			08/13/24 17:55	1
Trichloroethene	<0.430		1.00	0.430	ug/L			08/13/24 17:55	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			08/13/24 17:55	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			08/13/24 17:55	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			08/13/24 17:55	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			08/13/24 17:55	1

Client: AECOM
Job ID: 310-287913-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: P-216CR
Lab Sample ID: 310-287913-3

Date Collected: 08/09/24 09:00
Matrix: Ground Water

Date Received: 08/09/24 16:05

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*100*		*73 - 130*		*08/13/24 17:55*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*08/13/24 17:55*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*08/13/24 17:55*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		08/14/24 09:00	08/15/24 13:11	1
Arsenic	<0.530		2.00	0.530	ug/L		08/14/24 09:00	08/15/24 13:11	1
Barium	**24.8**		2.00	0.660	ug/L		08/14/24 09:00	08/15/24 13:11	1
Beryllium	<0.330		1.00	0.330	ug/L		08/14/24 09:00	08/21/24 14:40	1
Cadmium	<0.100		0.200	0.100	ug/L		08/14/24 09:00	08/15/24 13:11	1
Chromium	<1.20		5.00	1.20	ug/L		08/14/24 09:00	08/15/24 13:11	1
Cobalt	**0.857**		0.500	0.170	ug/L		08/14/24 09:00	08/15/24 13:11	1
Copper	<1.80		5.00	1.80	ug/L		08/14/24 09:00	08/15/24 13:11	1
Lead	<0.260		0.500	0.260	ug/L		08/14/24 09:00	08/15/24 13:11	1
Nickel	**3.60**	**J**	5.00	2.10	ug/L		08/14/24 09:00	08/20/24 20:43	1
Selenium	<1.40		5.00	1.40	ug/L		08/14/24 09:00	08/15/24 13:11	1
Silver	<0.500		1.00	0.500	ug/L		08/14/24 09:00	08/15/24 13:11	1
Thallium	<0.570		1.00	0.570	ug/L		08/14/24 09:00	08/15/24 13:11	1
Vanadium	<1.10		5.00	1.10	ug/L		08/14/24 09:00	08/15/24 13:11	1
Zinc	<9.70		20.0	9.70	ug/L		08/14/24 09:00	08/15/24 13:11	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**5.75**		1.88	1.39	mg/L			08/13/24 12:47	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**3.03**				NTU			08/09/24 09:00	1

Client: AECOM
Job ID: 310-287913-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Equipment Blank-1
Lab Sample ID: 310-287913-4
Date Collected: 08/09/24 13:00
Matrix: Ground Water
Date Received: 08/09/24 16:05

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			08/14/24 16:43	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			08/14/24 16:43	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			08/14/24 16:43	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			08/14/24 16:43	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			08/14/24 16:43	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			08/14/24 16:43	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			08/14/24 16:43	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			08/14/24 16:43	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			08/14/24 16:43	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			08/14/24 16:43	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			08/14/24 16:43	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			08/14/24 16:43	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			08/14/24 16:43	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			08/14/24 16:43	1
2-Hexanone	<2.00		10.0	2.00	ug/L			08/14/24 16:43	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			08/14/24 16:43	1
Acetone	<3.10		10.0	3.10	ug/L			08/14/24 16:43	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			08/14/24 16:43	1
Benzene	<0.220		0.500	0.220	ug/L			08/14/24 16:43	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			08/14/24 16:43	1
Bromodichloromethane	**0.404**	**J**	1.00	0.390	ug/L			08/14/24 16:43	1
Bromoform	**1.69**	**J**	5.00	0.780	ug/L			08/14/24 16:43	1
Bromomethane	<1.10		4.00	1.10	ug/L			08/14/24 16:43	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			08/14/24 16:43	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			08/14/24 16:43	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			08/14/24 16:43	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			08/14/24 16:43	1
Chloroethane	<0.790		4.00	0.790	ug/L			08/14/24 16:43	1
Chloroform	<1.30		3.00	1.30	ug/L			08/14/24 16:43	1
Chloromethane	<0.610		3.00	0.610	ug/L			08/14/24 16:43	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			08/14/24 16:43	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			08/14/24 16:43	1
Dibromomethane	<0.330		1.00	0.330	ug/L			08/14/24 16:43	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			08/14/24 16:43	1
Iodomethane	<7.00		10.0	7.00	ug/L			08/14/24 16:43	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			08/14/24 16:43	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			08/14/24 16:43	1
o-Xylene	<0.400		1.00	0.400	ug/L			08/14/24 16:43	1
Styrene	<0.370		1.00	0.370	ug/L			08/14/24 16:43	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			08/14/24 16:43	1
Toluene	<0.430		1.00	0.430	ug/L			08/14/24 16:43	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			08/14/24 16:43	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			08/14/24 16:43	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			08/14/24 16:43	1
Trichloroethene	<0.430		1.00	0.430	ug/L			08/14/24 16:43	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			08/14/24 16:43	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			08/14/24 16:43	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			08/14/24 16:43	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			08/14/24 16:43	1

Client: AECOM
Job ID: 310-287913-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Equipment Blank-1
Lab Sample ID: 310-287913-4

Date Collected: 08/09/24 13:00
Matrix: Ground Water

Date Received: 08/09/24 16:05

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*100*		*73 - 130*		*08/14/24 16:43*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*08/14/24 16:43*	*1*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*08/14/24 16:43*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		08/14/24 09:00	08/15/24 13:13	1
Arsenic	<0.530		2.00	0.530	ug/L		08/14/24 09:00	08/15/24 13:13	1
Barium	**71.5**		2.00	0.660	ug/L		08/14/24 09:00	08/15/24 13:13	1
Beryllium	<0.330		1.00	0.330	ug/L		08/14/24 09:00	08/21/24 14:42	1
Cadmium	<0.100		0.200	0.100	ug/L		08/14/24 09:00	08/15/24 13:13	1
Chromium	<1.20		5.00	1.20	ug/L		08/14/24 09:00	08/15/24 13:13	1
Cobalt	<0.170		0.500	0.170	ug/L		08/14/24 09:00	08/15/24 13:13	1
Copper	<1.80		5.00	1.80	ug/L		08/14/24 09:00	08/15/24 13:13	1
Lead	<0.260		0.500	0.260	ug/L		08/14/24 09:00	08/15/24 13:13	1
Nickel	<2.10		5.00	2.10	ug/L		08/14/24 09:00	08/20/24 20:47	1
Selenium	<1.40		5.00	1.40	ug/L		08/14/24 09:00	08/15/24 13:13	1
Silver	<0.500		1.00	0.500	ug/L		08/14/24 09:00	08/15/24 13:13	1
Thallium	<0.570		1.00	0.570	ug/L		08/14/24 09:00	08/15/24 13:13	1
Vanadium	<1.10		5.00	1.10	ug/L		08/14/24 09:00	08/15/24 13:13	1
Zinc	<9.70		20.0	9.70	ug/L		08/14/24 09:00	08/15/24 13:13	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	<1.39		1.88	1.39	mg/L			08/13/24 12:47	1

Client: AECOM
Job ID: 310-287913-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: P-215CR-FD
Lab Sample ID: 310-287913-5
Date Collected: 08/09/24 10:00
Matrix: Ground Water
Date Received: 08/09/24 16:05

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			08/14/24 19:20	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			08/14/24 19:20	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			08/14/24 19:20	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			08/14/24 19:20	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			08/14/24 19:20	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			08/14/24 19:20	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			08/14/24 19:20	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			08/14/24 19:20	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			08/14/24 19:20	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			08/14/24 19:20	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			08/14/24 19:20	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			08/14/24 19:20	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			08/14/24 19:20	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			08/14/24 19:20	1
2-Hexanone	<2.00		10.0	2.00	ug/L			08/14/24 19:20	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			08/14/24 19:20	1
Acetone	<3.10		10.0	3.10	ug/L			08/14/24 19:20	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			08/14/24 19:20	1
Benzene	<0.220		0.500	0.220	ug/L			08/14/24 19:20	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			08/14/24 19:20	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			08/14/24 19:20	1
Bromoform	<0.780		5.00	0.780	ug/L			08/14/24 19:20	1
Bromomethane	<1.10		4.00	1.10	ug/L			08/14/24 19:20	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			08/14/24 19:20	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			08/14/24 19:20	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			08/14/24 19:20	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			08/14/24 19:20	1
Chloroethane	<0.790		4.00	0.790	ug/L			08/14/24 19:20	1
Chloroform	<1.30		3.00	1.30	ug/L			08/14/24 19:20	1
Chloromethane	<0.610		3.00	0.610	ug/L			08/14/24 19:20	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			08/14/24 19:20	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			08/14/24 19:20	1
Dibromomethane	<0.330		1.00	0.330	ug/L			08/14/24 19:20	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			08/14/24 19:20	1
Iodomethane	<7.00		10.0	7.00	ug/L			08/14/24 19:20	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			08/14/24 19:20	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			08/14/24 19:20	1
o-Xylene	<0.400		1.00	0.400	ug/L			08/14/24 19:20	1
Styrene	<0.370		1.00	0.370	ug/L			08/14/24 19:20	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			08/14/24 19:20	1
Toluene	<0.430		1.00	0.430	ug/L			08/14/24 19:20	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			08/14/24 19:20	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			08/14/24 19:20	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			08/14/24 19:20	1
Trichloroethene	<0.430		1.00	0.430	ug/L			08/14/24 19:20	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			08/14/24 19:20	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			08/14/24 19:20	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			08/14/24 19:20	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			08/14/24 19:20	1

Client: AECOM
Job ID: 310-287913-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: P-215CR-FD
Lab Sample ID: 310-287913-5
Date Collected: 08/09/24 10:00
Matrix: Ground Water
Date Received: 08/09/24 16:05

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*101*		*73 - 130*		*08/14/24 19:20*	*1*
Toluene-d8 (Surr)	*94*		*80 - 120*		*08/14/24 19:20*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*08/14/24 19:20*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		08/14/24 09:00	08/15/24 13:17	1
Arsenic	<0.530		2.00	0.530	ug/L		08/14/24 09:00	08/15/24 13:17	1
Barium	**25.6**		2.00	0.660	ug/L		08/14/24 09:00	08/15/24 13:17	1
Beryllium	<0.330		1.00	0.330	ug/L		08/14/24 09:00	08/21/24 14:44	1
Cadmium	<0.100		0.200	0.100	ug/L		08/14/24 09:00	08/15/24 13:17	1
Chromium	<1.20		5.00	1.20	ug/L		08/14/24 09:00	08/15/24 13:17	1
Cobalt	**0.874**		0.500	0.170	ug/L		08/14/24 09:00	08/15/24 13:17	1
Copper	<1.80		5.00	1.80	ug/L		08/14/24 09:00	08/15/24 13:17	1
Lead	<0.260		0.500	0.260	ug/L		08/14/24 09:00	08/15/24 13:17	1
Nickel	<2.10		5.00	2.10	ug/L		08/14/24 09:00	08/20/24 20:50	1
Selenium	<1.40		5.00	1.40	ug/L		08/14/24 09:00	08/15/24 13:17	1
Silver	<0.500		1.00	0.500	ug/L		08/14/24 09:00	08/15/24 13:17	1
Thallium	<0.570		1.00	0.570	ug/L		08/14/24 09:00	08/15/24 13:17	1
Vanadium	<1.10		5.00	1.10	ug/L		08/14/24 09:00	08/15/24 13:17	1
Zinc	<9.70		20.0	9.70	ug/L		08/14/24 09:00	08/15/24 13:17	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**8.13**		1.88	1.39	mg/L			08/13/24 12:47	1

Client: AECOM
Job ID: 310-287913-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Trip Blank
Lab Sample ID: 310-287913-6
Date Collected: 08/09/24 06:00
Matrix: Water
Date Received: 08/09/24 16:05

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			08/14/24 17:05	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			08/14/24 17:05	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			08/14/24 17:05	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			08/14/24 17:05	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			08/14/24 17:05	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			08/14/24 17:05	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			08/14/24 17:05	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			08/14/24 17:05	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			08/14/24 17:05	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			08/14/24 17:05	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			08/14/24 17:05	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			08/14/24 17:05	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			08/14/24 17:05	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			08/14/24 17:05	1
2-Hexanone	<2.00		10.0	2.00	ug/L			08/14/24 17:05	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			08/14/24 17:05	1
Acetone	<3.10		10.0	3.10	ug/L			08/14/24 17:05	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			08/14/24 17:05	1
Benzene	<0.220		0.500	0.220	ug/L			08/14/24 17:05	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			08/14/24 17:05	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			08/14/24 17:05	1
Bromoform	<0.780		5.00	0.780	ug/L			08/14/24 17:05	1
Bromomethane	<1.10		4.00	1.10	ug/L			08/14/24 17:05	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			08/14/24 17:05	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			08/14/24 17:05	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			08/14/24 17:05	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			08/14/24 17:05	1
Chloroethane	<0.790		4.00	0.790	ug/L			08/14/24 17:05	1
Chloroform	<1.30		3.00	1.30	ug/L			08/14/24 17:05	1
Chloromethane	<0.610		3.00	0.610	ug/L			08/14/24 17:05	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			08/14/24 17:05	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			08/14/24 17:05	1
Dibromomethane	<0.330		1.00	0.330	ug/L			08/14/24 17:05	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			08/14/24 17:05	1
Iodomethane	<7.00		10.0	7.00	ug/L			08/14/24 17:05	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			08/14/24 17:05	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			08/14/24 17:05	1
o-Xylene	<0.400		1.00	0.400	ug/L			08/14/24 17:05	1
Styrene	<0.370		1.00	0.370	ug/L			08/14/24 17:05	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			08/14/24 17:05	1
Toluene	<0.430		1.00	0.430	ug/L			08/14/24 17:05	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			08/14/24 17:05	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			08/14/24 17:05	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			08/14/24 17:05	1
Trichloroethene	<0.430		1.00	0.430	ug/L			08/14/24 17:05	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			08/14/24 17:05	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			08/14/24 17:05	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			08/14/24 17:05	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			08/14/24 17:05	1

Client: AECOM
Job ID: 310-287913-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Trip Blank
Lab Sample ID: 310-287913-6
Date Collected: 08/09/24 06:00
Matrix: Water
Date Received: 08/09/24 16:05

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	102		73 - 130		08/14/24 17:05	1
Toluene-d8 (Surr)	95		80 - 120		08/14/24 17:05	1
4-Bromofluorobenzene (Surr)	100		80 - 120		08/14/24 17:05	1

Definitions/Glossary

Client: AECOM
Job ID: 310-287913-1
Project/Site: Black Hawk County Landfill (IDNR)

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Surrogate Summary

Client: AECOM
Job ID: 310-287913-1
Project/Site: Black Hawk County Landfill (IDNR)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Ground Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-287913-1	P-214CR	103	96	101
310-287913-2	P-215CR	102	96	101
310-287913-3	P-216CR	100	97	101
310-287913-4	Equipment Blank-1	100	96	97
310-287913-5	P-215CR-FD	101	94	101

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-287913-6	Trip Blank	102	95	100
LCS 310-430168/6	Lab Control Sample	99	97	97
LCS 310-430168/7	Lab Control Sample	100	97	100
LCS 310-430305/6	Lab Control Sample	100	99	97
LCS 310-430305/7	Lab Control Sample	101	96	100
MB 310-430168/5	Method Blank	98	98	101
MB 310-430305/5	Method Blank	102	97	100

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 310-430168/5
Matrix: Water
Analysis Batch: 430168

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			08/13/24 10:47	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			08/13/24 10:47	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			08/13/24 10:47	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			08/13/24 10:47	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			08/13/24 10:47	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			08/13/24 10:47	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			08/13/24 10:47	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			08/13/24 10:47	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			08/13/24 10:47	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			08/13/24 10:47	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			08/13/24 10:47	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			08/13/24 10:47	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			08/13/24 10:47	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			08/13/24 10:47	1
2-Hexanone	<2.00		10.0	2.00	ug/L			08/13/24 10:47	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			08/13/24 10:47	1
Acetone	<3.10		10.0	3.10	ug/L			08/13/24 10:47	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			08/13/24 10:47	1
Benzene	<0.220		0.500	0.220	ug/L			08/13/24 10:47	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			08/13/24 10:47	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			08/13/24 10:47	1
Bromoform	<0.780		5.00	0.780	ug/L			08/13/24 10:47	1
Bromomethane	<1.10		4.00	1.10	ug/L			08/13/24 10:47	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			08/13/24 10:47	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			08/13/24 10:47	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			08/13/24 10:47	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			08/13/24 10:47	1
Chloroethane	<0.790		4.00	0.790	ug/L			08/13/24 10:47	1
Chloroform	<1.30		3.00	1.30	ug/L			08/13/24 10:47	1
Chloromethane	<0.610		3.00	0.610	ug/L			08/13/24 10:47	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			08/13/24 10:47	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			08/13/24 10:47	1
Dibromomethane	<0.330		1.00	0.330	ug/L			08/13/24 10:47	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			08/13/24 10:47	1
Iodomethane	<7.00		10.0	7.00	ug/L			08/13/24 10:47	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			08/13/24 10:47	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			08/13/24 10:47	1
o-Xylene	<0.400		1.00	0.400	ug/L			08/13/24 10:47	1
Styrene	<0.370		1.00	0.370	ug/L			08/13/24 10:47	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			08/13/24 10:47	1
Toluene	<0.430		1.00	0.430	ug/L			08/13/24 10:47	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			08/13/24 10:47	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			08/13/24 10:47	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			08/13/24 10:47	1
Trichloroethene	<0.430		1.00	0.430	ug/L			08/13/24 10:47	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			08/13/24 10:47	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			08/13/24 10:47	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			08/13/24 10:47	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-430168/5
Matrix: Water
Analysis Batch: 430168

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	<0.400		3.00	0.400	ug/L			08/13/24 10:47	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*98*		*73 - 130*		*08/13/24 10:47*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*08/13/24 10:47*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*08/13/24 10:47*	*1*

Lab Sample ID: LCS 310-430168/6
Matrix: Water
Analysis Batch: 430168

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	20.0	21.92		ug/L		110	71 - 120
1,1,1-Trichloroethane	20.0	25.13		ug/L		126	73 - 129
1,1,2,2-Tetrachloroethane	20.0	22.16		ug/L		111	68 - 124
1,1,2-Trichloroethane	20.0	24.13		ug/L		121	73 - 123
1,1-Dichloroethane	20.0	25.24		ug/L		126	70 - 127
1,1-Dichloroethene	20.0	25.63		ug/L		128	63 - 132
1,2,3-Trichloropropane	20.0	21.89		ug/L		109	65 - 127
1,2-Dibromo-3-Chloropropane	20.0	19.20		ug/L		96	50 - 150
1,2-Dibromoethane (EDB)	20.0	23.39		ug/L		117	75 - 125
1,2-Dichlorobenzene	20.0	22.67		ug/L		113	74 - 120
1,2-Dichloroethane	20.0	23.27		ug/L		116	71 - 125
1,2-Dichloropropane	20.0	25.56	*+	ug/L		128	73 - 124
1,4-Dichlorobenzene	20.0	21.05		ug/L		105	72 - 120
2-Butanone (MEK)	40.0	45.92		ug/L		115	50 - 150
2-Hexanone	40.0	48.36		ug/L		121	60 - 140
4-Methyl-2-pentanone (MIBK)	40.0	48.30		ug/L		121	60 - 139
Acetone	40.0	48.99		ug/L		122	50 - 150
Acrylonitrile	200	233.5		ug/L		117	50 - 150
Benzene	20.0	24.72		ug/L		124	72 - 124
Bromochloromethane	20.0	24.62		ug/L		123	73 - 130
Bromodichloromethane	20.0	22.89		ug/L		114	74 - 122
Bromoform	20.0	20.05		ug/L		100	61 - 122
Carbon disulfide	20.0	24.03		ug/L		120	59 - 135
Carbon tetrachloride	20.0	21.59		ug/L		108	67 - 132
Chlorobenzene	20.0	22.58		ug/L		113	76 - 120
Chlorodibromomethane	20.0	23.03		ug/L		115	71 - 121
Chloroform	20.0	23.14		ug/L		116	72 - 125
cis-1,2-Dichloroethene	20.0	25.29	*+	ug/L		126	74 - 123
cis-1,3-Dichloropropene	20.0	25.20	*+	ug/L		126	71 - 125
Dibromomethane	20.0	23.80		ug/L		119	74 - 125
Ethylbenzene	20.0	23.24		ug/L		116	74 - 122
Iodomethane	20.0	22.23		ug/L		111	10 - 150
Methylene Chloride	20.0	24.57		ug/L		123	50 - 150
Styrene	20.0	23.42		ug/L		117	74 - 121
Tetrachloroethene	20.0	23.16		ug/L		116	71 - 130
Toluene	20.0	24.11		ug/L		121	74 - 123

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-430168/6
Matrix: Water
Analysis Batch: 430168

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
trans-1,2-Dichloroethene	20.0	24.92		ug/L		125	70 - 126
trans-1,3-Dichloropropene	20.0	21.66		ug/L		108	69 - 123
trans-1,4-Dichloro-2-butene	20.0	19.72		ug/L		99	50 - 150
Trichloroethene	20.0	24.70		ug/L		124	72 - 126
Vinyl acetate	40.0	46.66		ug/L		117	50 - 150
Xylenes, Total	40.0	46.61		ug/L		117	73 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*99*		*73 - 130*
Toluene-d8 (Surr)	*97*		*80 - 120*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*

Lab Sample ID: LCS 310-430168/7
Matrix: Water
Analysis Batch: 430168

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	23.73		ug/L		119	23 - 150
Chloroethane	20.0	22.23		ug/L		111	54 - 136
Chloromethane	20.0	23.89		ug/L		119	38 - 150
Trichlorofluoromethane	20.0	21.99		ug/L		110	54 - 149
Vinyl chloride	20.0	22.59		ug/L		113	56 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*100*		*73 - 130*
Toluene-d8 (Surr)	*97*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*

Lab Sample ID: MB 310-430305/5
Matrix: Water
Analysis Batch: 430305

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			08/14/24 14:27	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			08/14/24 14:27	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			08/14/24 14:27	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			08/14/24 14:27	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			08/14/24 14:27	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			08/14/24 14:27	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			08/14/24 14:27	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			08/14/24 14:27	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			08/14/24 14:27	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			08/14/24 14:27	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			08/14/24 14:27	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			08/14/24 14:27	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			08/14/24 14:27	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			08/14/24 14:27	1
2-Hexanone	<2.00		10.0	2.00	ug/L			08/14/24 14:27	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-430305/5
Matrix: Water
Analysis Batch: 430305

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			08/14/24 14:27	1
Acetone	<3.10		10.0	3.10	ug/L			08/14/24 14:27	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			08/14/24 14:27	1
Benzene	<0.220		0.500	0.220	ug/L			08/14/24 14:27	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			08/14/24 14:27	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			08/14/24 14:27	1
Bromoform	<0.780		5.00	0.780	ug/L			08/14/24 14:27	1
Bromomethane	<1.10		4.00	1.10	ug/L			08/14/24 14:27	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			08/14/24 14:27	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			08/14/24 14:27	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			08/14/24 14:27	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			08/14/24 14:27	1
Chloroethane	<0.790		4.00	0.790	ug/L			08/14/24 14:27	1
Chloroform	<1.30		3.00	1.30	ug/L			08/14/24 14:27	1
Chloromethane	<0.610		3.00	0.610	ug/L			08/14/24 14:27	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			08/14/24 14:27	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			08/14/24 14:27	1
Dibromomethane	<0.330		1.00	0.330	ug/L			08/14/24 14:27	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			08/14/24 14:27	1
Iodomethane	<7.00		10.0	7.00	ug/L			08/14/24 14:27	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			08/14/24 14:27	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			08/14/24 14:27	1
o-Xylene	<0.400		1.00	0.400	ug/L			08/14/24 14:27	1
Styrene	<0.370		1.00	0.370	ug/L			08/14/24 14:27	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			08/14/24 14:27	1
Toluene	<0.430		1.00	0.430	ug/L			08/14/24 14:27	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			08/14/24 14:27	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			08/14/24 14:27	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			08/14/24 14:27	1
Trichloroethene	<0.430		1.00	0.430	ug/L			08/14/24 14:27	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			08/14/24 14:27	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			08/14/24 14:27	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			08/14/24 14:27	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			08/14/24 14:27	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*102*		*73 - 130*		*08/14/24 14:27*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*08/14/24 14:27*	*1*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*		*08/14/24 14:27*	*1*

Lab Sample ID: LCS 310-430305/6
Matrix: Water
Analysis Batch: 430305

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	20.0	20.04		ug/L		100	71 - 120
1,1,1-Trichloroethane	20.0	22.82		ug/L		114	73 - 129
1,1,2,2-Tetrachloroethane	20.0	19.89		ug/L		99	68 - 124

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-430305/6
Matrix: Water
Analysis Batch: 430305

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,2-Trichloroethane	20.0	22.30		ug/L		112	73 - 123
1,1-Dichloroethane	20.0	22.13		ug/L		111	70 - 127
1,1-Dichloroethene	20.0	24.58		ug/L		123	63 - 132
1,2,3-Trichloropropane	20.0	19.95		ug/L		100	65 - 127
1,2-Dibromo-3-Chloropropane	20.0	19.39		ug/L		97	50 - 150
1,2-Dibromoethane (EDB)	20.0	21.39		ug/L		107	75 - 125
1,2-Dichlorobenzene	20.0	20.56		ug/L		103	74 - 120
1,2-Dichloroethane	20.0	21.01		ug/L		105	71 - 125
1,2-Dichloropropane	20.0	21.86		ug/L		109	73 - 124
1,4-Dichlorobenzene	20.0	19.80		ug/L		99	72 - 120
2-Butanone (MEK)	40.0	44.65		ug/L		112	50 - 150
2-Hexanone	40.0	43.26		ug/L		108	60 - 140
4-Methyl-2-pentanone (MIBK)	40.0	43.99		ug/L		110	60 - 139
Acetone	40.0	43.85		ug/L		110	50 - 150
Acrylonitrile	200	207.2		ug/L		104	50 - 150
Benzene	20.0	21.97		ug/L		110	72 - 124
Bromochloromethane	20.0	22.89		ug/L		114	73 - 130
Bromodichloromethane	20.0	21.01		ug/L		105	74 - 122
Bromoform	20.0	18.96		ug/L		95	61 - 122
Carbon disulfide	20.0	24.63		ug/L		123	59 - 135
Carbon tetrachloride	20.0	20.68		ug/L		103	67 - 132
Chlorobenzene	20.0	20.51		ug/L		103	76 - 120
Chlorodibromomethane	20.0	21.26		ug/L		106	71 - 121
Chloroform	20.0	20.67		ug/L		103	72 - 125
cis-1,2-Dichloroethene	20.0	22.38		ug/L		112	74 - 123
cis-1,3-Dichloropropene	20.0	22.27		ug/L		111	71 - 125
Dibromomethane	20.0	21.17		ug/L		106	74 - 125
Ethylbenzene	20.0	21.54		ug/L		108	74 - 122
Iodomethane	20.0	19.77		ug/L		99	10 - 150
Methylene Chloride	20.0	22.49		ug/L		112	50 - 150
Styrene	20.0	21.67		ug/L		108	74 - 121
Tetrachloroethene	20.0	22.31		ug/L		112	71 - 130
Toluene	20.0	22.50		ug/L		112	74 - 123
trans-1,2-Dichloroethene	20.0	23.42		ug/L		117	70 - 126
trans-1,3-Dichloropropene	20.0	19.65		ug/L		98	69 - 123
trans-1,4-Dichloro-2-butene	20.0	18.71		ug/L		94	50 - 150
Trichloroethene	20.0	22.95		ug/L		115	72 - 126
Vinyl acetate	40.0	40.86		ug/L		102	50 - 150
Xylenes, Total	40.0	43.42		ug/L		109	73 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*100*		*73 - 130*
Toluene-d8 (Surr)	*99*		*80 - 120*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-430305/7
Matrix: Water
Analysis Batch: 430305

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	21.99		ug/L		110	23 - 150
Chloroethane	20.0	19.32		ug/L		97	54 - 136
Chloromethane	20.0	20.78		ug/L		104	38 - 150
Trichlorofluoromethane	20.0	19.76		ug/L		99	54 - 149
Vinyl chloride	20.0	20.17		ug/L		101	56 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*101*		*73 - 130*
Toluene-d8 (Surr)	*96*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-430256/1-A
Matrix: Water
Analysis Batch: 430554

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 430256

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		08/14/24 09:00	08/15/24 12:46	1
Arsenic	<0.530		2.00	0.530	ug/L		08/14/24 09:00	08/15/24 12:46	1
Barium	<0.660		2.00	0.660	ug/L		08/14/24 09:00	08/15/24 12:46	1
Beryllium	<0.330		1.00	0.330	ug/L		08/14/24 09:00	08/15/24 12:46	1
Cadmium	<0.100		0.200	0.100	ug/L		08/14/24 09:00	08/15/24 12:46	1
Chromium	<1.20		5.00	1.20	ug/L		08/14/24 09:00	08/15/24 12:46	1
Cobalt	<0.170		0.500	0.170	ug/L		08/14/24 09:00	08/15/24 12:46	1
Copper	<1.80		5.00	1.80	ug/L		08/14/24 09:00	08/15/24 12:46	1
Lead	<0.260		0.500	0.260	ug/L		08/14/24 09:00	08/15/24 12:46	1
Selenium	<1.40		5.00	1.40	ug/L		08/14/24 09:00	08/15/24 12:46	1
Silver	<0.500		1.00	0.500	ug/L		08/14/24 09:00	08/15/24 12:46	1
Thallium	<0.570		1.00	0.570	ug/L		08/14/24 09:00	08/15/24 12:46	1
Vanadium	<1.10		5.00	1.10	ug/L		08/14/24 09:00	08/15/24 12:46	1
Zinc	<9.70		20.0	9.70	ug/L		08/14/24 09:00	08/15/24 12:46	1

Lab Sample ID: MB 310-430256/1-A
Matrix: Water
Analysis Batch: 430986

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 430256

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nickel	<2.10		5.00	2.10	ug/L		08/14/24 09:00	08/20/24 20:08	1

Lab Sample ID: LCS 310-430256/2-A
Matrix: Water
Analysis Batch: 430554

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 430256

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	200	238.1		ug/L		119	80 - 120
Arsenic	200	206.2		ug/L		103	80 - 120
Barium	100	103.5		ug/L		103	80 - 120
Beryllium	100	104.9		ug/L		105	80 - 120

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 310-430256/2-A
Matrix: Water
Analysis Batch: 430554

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 430256

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	100	107.6		ug/L		108	80 - 120
Chromium	100	102.8		ug/L		103	80 - 120
Cobalt	100	113.8		ug/L		114	80 - 120
Copper	200	217.4		ug/L		109	80 - 120
Lead	200	216.7		ug/L		108	80 - 120
Selenium	400	395.3		ug/L		99	80 - 120
Silver	100	118.9		ug/L		119	80 - 120
Thallium	100	114.5		ug/L		114	80 - 120
Vanadium	100	98.07		ug/L		98	80 - 120
Zinc	200	199.5		ug/L		100	80 - 120

Lab Sample ID: LCS 310-430256/2-A
Matrix: Water
Analysis Batch: 430986

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 430256

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nickel	200	219.9		ug/L		110	80 - 120
Silver	100	109.6		ug/L		110	80 - 120

Lab Sample ID: 310-287913-1 MS
Matrix: Ground Water
Analysis Batch: 430554

Client Sample ID: P-214CR
Prep Type: Total/NA
Prep Batch: 430256

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	<1.00		200	229.9		ug/L		115	75 - 125
Arsenic	0.842	J	200	221.5		ug/L		110	75 - 125
Barium	121		100	226.1		ug/L		105	75 - 125
Cadmium	<0.100		100	102.6		ug/L		103	75 - 125
Chromium	<1.20		100	97.63		ug/L		98	75 - 125
Cobalt	0.176	J	100	109.8		ug/L		110	75 - 125
Copper	<1.80		200	207.6		ug/L		104	75 - 125
Lead	<0.260		200	204.8		ug/L		102	75 - 125
Selenium	<1.40		400	425.4		ug/L		106	75 - 125
Silver	<0.500		100	110.7		ug/L		111	75 - 125
Thallium	<0.570		100	110.9		ug/L		111	75 - 125
Vanadium	<1.10		100	96.99		ug/L		97	75 - 125
Zinc	<9.70		200	208.6		ug/L		104	75 - 125

Lab Sample ID: 310-287913-1 MS
Matrix: Ground Water
Analysis Batch: 430986

Client Sample ID: P-214CR
Prep Type: Total/NA
Prep Batch: 430256

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Nickel	<2.10		200	219.9		ug/L		110	75 - 125

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: 310-287913-1 MS
Matrix: Ground Water
Analysis Batch: 431060

Client Sample ID: P-214CR
Prep Type: Total/NA
Prep Batch: 430256

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Beryllium	<0.330		100	105.1		ug/L		105	75 - 125		

Lab Sample ID: 310-287913-1 MSD
Matrix: Ground Water
Analysis Batch: 430554

Client Sample ID: P-214CR
Prep Type: Total/NA
Prep Batch: 430256

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Antimony	<1.00		200	230.1		ug/L		115	75 - 125	0	20
Arsenic	0.842	J	200	220.1		ug/L		110	75 - 125	1	20
Barium	121		100	223.3		ug/L		103	75 - 125	1	20
Cadmium	<0.100		100	101.7		ug/L		102	75 - 125	1	20
Chromium	<1.20		100	97.37		ug/L		97	75 - 125	0	20
Cobalt	0.176	J	100	108.6		ug/L		108	75 - 125	1	20
Copper	<1.80		200	204.1		ug/L		102	75 - 125	2	20
Lead	<0.260		200	206.5		ug/L		103	75 - 125	1	20
Selenium	<1.40		400	421.0		ug/L		105	75 - 125	1	20
Silver	<0.500		100	111.2		ug/L		111	75 - 125	0	20
Thallium	<0.570		100	108.4		ug/L		108	75 - 125	2	20
Vanadium	<1.10		100	96.47		ug/L		96	75 - 125	1	20
Zinc	<9.70		200	206.0		ug/L		103	75 - 125	1	20

Lab Sample ID: 310-287913-1 MSD
Matrix: Ground Water
Analysis Batch: 430986

Client Sample ID: P-214CR
Prep Type: Total/NA
Prep Batch: 430256

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nickel	<2.10		200	207.6		ug/L		104	75 - 125	6	20

Lab Sample ID: 310-287913-1 MSD
Matrix: Ground Water
Analysis Batch: 431060

Client Sample ID: P-214CR
Prep Type: Total/NA
Prep Batch: 430256

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Beryllium	<0.330		100	105.3		ug/L		105	75 - 125	0	20

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: MB 310-430208/1
Matrix: Water
Analysis Batch: 430208

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<3.70		5.00	3.70	mg/L			08/13/24 11:55	1

Lab Sample ID: LCS 310-430208/2
Matrix: Water
Analysis Batch: 430208

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Suspended Solids			100	95.00		mg/L		95	81 - 116		

Client: AECOM
Job ID: 310-287913-1
Project/Site: Black Hawk County Landfill (IDNR)

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: MB 310-430223/1
Matrix: Water
Analysis Batch: 430223

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<3.70		5.00	3.70	mg/L			08/13/24 12:47	1

Lab Sample ID: LCS 310-430223/2
Matrix: Water
Analysis Batch: 430223

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	99.00		mg/L		99	81 - 116

GC/MS VOA

Analysis Batch: 430168

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-287913-1	P-214CR	Total/NA	Ground Water	8260D	
310-287913-2	P-215CR	Total/NA	Ground Water	8260D	
310-287913-3	P-216CR	Total/NA	Ground Water	8260D	
MB 310-430168/5	Method Blank	Total/NA	Water	8260D	
LCS 310-430168/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-430168/7	Lab Control Sample	Total/NA	Water	8260D	

Analysis Batch: 430305

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-287913-4	Equipment Blank-1	Total/NA	Ground Water	8260D	
310-287913-5	P-215CR-FD	Total/NA	Ground Water	8260D	
310-287913-6	Trip Blank	Total/NA	Water	8260D	
MB 310-430305/5	Method Blank	Total/NA	Water	8260D	
LCS 310-430305/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-430305/7	Lab Control Sample	Total/NA	Water	8260D	

Metals

Prep Batch: 430256

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-287913-1	P-214CR	Total/NA	Ground Water	3005A	
310-287913-2	P-215CR	Total/NA	Ground Water	3005A	
310-287913-3	P-216CR	Total/NA	Ground Water	3005A	
310-287913-4	Equipment Blank-1	Total/NA	Ground Water	3005A	
310-287913-5	P-215CR-FD	Total/NA	Ground Water	3005A	
MB 310-430256/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-430256/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-287913-1 MS	P-214CR	Total/NA	Ground Water	3005A	
310-287913-1 MSD	P-214CR	Total/NA	Ground Water	3005A	

Analysis Batch: 430554

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-287913-1	P-214CR	Total/NA	Ground Water	6020B	430256
310-287913-2	P-215CR	Total/NA	Ground Water	6020B	430256
310-287913-3	P-216CR	Total/NA	Ground Water	6020B	430256
310-287913-4	Equipment Blank-1	Total/NA	Ground Water	6020B	430256
310-287913-5	P-215CR-FD	Total/NA	Ground Water	6020B	430256
MB 310-430256/1-A	Method Blank	Total/NA	Water	6020B	430256
LCS 310-430256/2-A	Lab Control Sample	Total/NA	Water	6020B	430256
310-287913-1 MS	P-214CR	Total/NA	Ground Water	6020B	430256
310-287913-1 MSD	P-214CR	Total/NA	Ground Water	6020B	430256

Analysis Batch: 430986

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-287913-1	P-214CR	Total/NA	Ground Water	6020B	430256
310-287913-2	P-215CR	Total/NA	Ground Water	6020B	430256
310-287913-3	P-216CR	Total/NA	Ground Water	6020B	430256
310-287913-4	Equipment Blank-1	Total/NA	Ground Water	6020B	430256
310-287913-5	P-215CR-FD	Total/NA	Ground Water	6020B	430256
MB 310-430256/1-A	Method Blank	Total/NA	Water	6020B	430256
LCS 310-430256/2-A	Lab Control Sample	Total/NA	Water	6020B	430256

Metals (Continued)

Analysis Batch: 430986 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-287913-1 MS	P-214CR	Total/NA	Ground Water	6020B	430256
310-287913-1 MSD	P-214CR	Total/NA	Ground Water	6020B	430256

Analysis Batch: 431060

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-287913-2	P-215CR	Total/NA	Ground Water	6020B	430256
310-287913-3	P-216CR	Total/NA	Ground Water	6020B	430256
310-287913-4	Equipment Blank-1	Total/NA	Ground Water	6020B	430256
310-287913-5	P-215CR-FD	Total/NA	Ground Water	6020B	430256
310-287913-1 MS	P-214CR	Total/NA	Ground Water	6020B	430256
310-287913-1 MSD	P-214CR	Total/NA	Ground Water	6020B	430256

General Chemistry

Analysis Batch: 430208

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-287913-1	P-214CR	Total/NA	Ground Water	I-3765-85	
310-287913-2	P-215CR	Total/NA	Ground Water	I-3765-85	
MB 310-430208/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-430208/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Analysis Batch: 430223

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-287913-3	P-216CR	Total/NA	Ground Water	I-3765-85	
310-287913-4	Equipment Blank-1	Total/NA	Ground Water	I-3765-85	
310-287913-5	P-215CR-FD	Total/NA	Ground Water	I-3765-85	
MB 310-430223/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-430223/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Field Service / Mobile Lab

Analysis Batch: 430877

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-287913-1	P-214CR	Total/NA	Ground Water	Field Sampling	
310-287913-2	P-215CR	Total/NA	Ground Water	Field Sampling	
310-287913-3	P-216CR	Total/NA	Ground Water	Field Sampling	

Lab Chronicle

Client: AECOM
Job ID: 310-287913-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: P-214CR
Lab Sample ID: 310-287913-1
Date Collected: 08/09/24 12:30
Matrix: Ground Water
Date Received: 08/09/24 16:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	430168	WSE8	EET CF	08/13/24 17:10
Total/NA	Prep	3005A			430256	DHM5	EET CF	08/14/24 09:00
Total/NA	Analysis	6020B		1	430986	NFT2	EET CF	08/20/24 20:15
Total/NA	Prep	3005A			430256	DHM5	EET CF	08/14/24 09:00
Total/NA	Analysis	6020B		1	430554	NFT2	EET CF	08/15/24 12:50
Total/NA	Analysis	I-3765-85		1	430208	DGU1	EET CF	08/13/24 11:55
Total/NA	Analysis	Field Sampling		1	430877	BJ0R	EET CF	08/09/24 12:30

Client Sample ID: P-215CR
Lab Sample ID: 310-287913-2
Date Collected: 08/09/24 10:00
Matrix: Ground Water
Date Received: 08/09/24 16:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	430168	WSE8	EET CF	08/13/24 17:33
Total/NA	Prep	3005A			430256	DHM5	EET CF	08/14/24 09:00
Total/NA	Analysis	6020B		1	430986	NFT2	EET CF	08/20/24 20:39
Total/NA	Prep	3005A			430256	DHM5	EET CF	08/14/24 09:00
Total/NA	Analysis	6020B		1	430554	NFT2	EET CF	08/15/24 13:09
Total/NA	Prep	3005A			430256	DHM5	EET CF	08/14/24 09:00
Total/NA	Analysis	6020B		1	431060	NFT2	EET CF	08/21/24 14:38
Total/NA	Analysis	I-3765-85		1	430208	DGU1	EET CF	08/13/24 11:55
Total/NA	Analysis	Field Sampling		1	430877	BJ0R	EET CF	08/09/24 10:00

Client Sample ID: P-216CR
Lab Sample ID: 310-287913-3
Date Collected: 08/09/24 09:00
Matrix: Ground Water
Date Received: 08/09/24 16:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	430168	WSE8	EET CF	08/13/24 17:55
Total/NA	Prep	3005A			430256	DHM5	EET CF	08/14/24 09:00
Total/NA	Analysis	6020B		1	430986	NFT2	EET CF	08/20/24 20:43
Total/NA	Prep	3005A			430256	DHM5	EET CF	08/14/24 09:00
Total/NA	Analysis	6020B		1	430554	NFT2	EET CF	08/15/24 13:11
Total/NA	Prep	3005A			430256	DHM5	EET CF	08/14/24 09:00
Total/NA	Analysis	6020B		1	431060	NFT2	EET CF	08/21/24 14:40
Total/NA	Analysis	I-3765-85		1	430223	DGU1	EET CF	08/13/24 12:47
Total/NA	Analysis	Field Sampling		1	430877	BJ0R	EET CF	08/09/24 09:00

Client Sample ID: Equipment Blank-1
Lab Sample ID: 310-287913-4
Date Collected: 08/09/24 13:00
Matrix: Ground Water
Date Received: 08/09/24 16:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	430305	WSE8	EET CF	08/14/24 16:43

Lab Chronicle

Client: AECOM
Job ID: 310-287913-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Equipment Blank-1
Lab Sample ID: 310-287913-4
Date Collected: 08/09/24 13:00
Matrix: Ground Water
Date Received: 08/09/24 16:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			430256	DHM5	EET CF	08/14/24 09:00
Total/NA	Analysis	6020B		1	430986	NFT2	EET CF	08/20/24 20:47
Total/NA	Prep	3005A			430256	DHM5	EET CF	08/14/24 09:00
Total/NA	Analysis	6020B		1	430554	NFT2	EET CF	08/15/24 13:13
Total/NA	Prep	3005A			430256	DHM5	EET CF	08/14/24 09:00
Total/NA	Analysis	6020B		1	431060	NFT2	EET CF	08/21/24 14:42
Total/NA	Analysis	I-3765-85		1	430223	DGU1	EET CF	08/13/24 12:47

Client Sample ID: P-215CR-FD
Lab Sample ID: 310-287913-5
Date Collected: 08/09/24 10:00
Matrix: Ground Water
Date Received: 08/09/24 16:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	430305	WSE8	EET CF	08/14/24 19:20
Total/NA	Prep	3005A			430256	DHM5	EET CF	08/14/24 09:00
Total/NA	Analysis	6020B		1	430986	NFT2	EET CF	08/20/24 20:50
Total/NA	Prep	3005A			430256	DHM5	EET CF	08/14/24 09:00
Total/NA	Analysis	6020B		1	430554	NFT2	EET CF	08/15/24 13:17
Total/NA	Prep	3005A			430256	DHM5	EET CF	08/14/24 09:00
Total/NA	Analysis	6020B		1	431060	NFT2	EET CF	08/21/24 14:44
Total/NA	Analysis	I-3765-85		1	430223	DGU1	EET CF	08/13/24 12:47

Client Sample ID: Trip Blank
Lab Sample ID: 310-287913-6
Date Collected: 08/09/24 06:00
Matrix: Water
Date Received: 08/09/24 16:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	430305	WSE8	EET CF	08/14/24 17:05

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Accreditation/Certification Summary

Client: AECOM
Job ID: 310-287913-1
Project/Site: Black Hawk County Landfill (IDNR)

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8260D		Ground Water	m,p-Xylene
8260D		Ground Water	o-Xylene
8260D		Water	m,p-Xylene
8260D		Water	o-Xylene
Field Sampling		Ground Water	Field Turbidity

Method Summary

Client: AECOM
Job ID: 310-287913-1
Project/Site: Black Hawk County Landfill (IDNR)

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
Field Sampling	Field Sampling	EPA	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
5030B	Purge and Trap	SW846	EET CF

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

eurofins | Environment Testing America

310-287913 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: AECOM

City/State: CITY Waterloo STATE IA Project: BK Hk Co. Landfill

Receipt Information

Date/Time Received: DATE 8/9/24 TIME 1605 Received By: JL

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☐ Lab Courier ☐ Lab Field Services ☑ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler?	☑ Yes ☐ No	*If yes:* Cooler ID:
Multiple Coolers?	☐ Yes ☑ No	*If yes:* Cooler # _____ of _____
Cooler Custody Seals Present? No	☐ Yes ☑ No	*If yes:* Cooler custody seals intact? ☐ Yes ☐ No
Sample Custody Seals Present? No	☐ Yes ☑ No	*If yes:* Sample custody seals intact? ☐ Yes ☐ No
Trip Blank Present?	☐ Yes ☑ No	*If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☑ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: 4 Correction Factor (°C): 0 3.7

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 3.7 Corrected Temp (°C):

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☑ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE If yes, contact PM before proceeding If no, proceed with login

Additional Comments

Eurofins Cedar Falls
3019 Venture Way

Cedar Falls IA 50613
phone 319 277 2401 fax 319 277 2425

Chain of Custody Record

eurofins

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other IDNR

Eurofins Environment Testing America

Client Contact	Project Manager: Chris Oelkers	Site Contact:	Date: 8-9-24	COC No
AECOM	Tel/Fax:319-296-6878	Lab Contact:	Carrier:	1 of 1 COCs
501 Sycamore Street, Suite 222	Analysis Turnaround Time			TALS Project #
Waterloo IA 50703	☑ CALENDAR DAYS ☐ WORKING DAYS			Sampler:
(319) 232-6531 Phone	TAT if different from Below ____			For Lab Use Only:
(xxx) xxx-xxxx FAX	☐ 2 weeks			Walk-in Client:
Project Name Black Hawk Co IDNR	☐ 1 week			Lab Sampling
Site Black Hawk County Landfill	☐ 2 days			Job / SDG No
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Appendix I	TSS	Arsenic	Cobalt	Sulfide	Appendix I VOCs Only	Sample Specific Notes
MW-712B			G	GW		N			X		X			
P-214CR	8-9-24	1230	G	GW	5	N		X	X					Turbidity - 8.98 NTU
P-215CR	8-9-24	1000	G	GW	5	N		X	X					Turbidity - 8.18 NTU
P-216CR	8-9-24	0900	G	GW	5	N		X	X					Turbidity - 3.03 NTU
P-604C			G	GW		N							X	
Equipment Blank-1 Deep Well	8-9-24	1300	G	GW	5	N		X	X					
P-215CR-FD	8-9-24	1000	G	GW	5	N		X	X					
Trip Blank	8-9-24	0600	G	W	2	N						X		

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for ____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No		Cooler Temp (°C) Obs'd ____ Corr'd ____		Therm ID No ____
Relinquished by: Ben Porter	Company: Aecom	Date/Time: 8-9-24	Received by:	Company:	Date/Time: 8/9/24 1605
Relinquished by:	Company:	Date/Time	Received by:	Company:	Date/Time
Relinquished by:	Company:	Date/Time	Received in Laboratory by	Company:	Date/Time: 8/12/24 1000

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-287913-1

Login Number: 287913

List Number: 1

Creator: Mathews, Emily A

List Source: Eurofins Cedar Falls

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

APPENDIX B-3
2024 FALL LABORATORY REPORTS

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ANALYTICAL REPORT

PREPARED FOR

Attn: Chris Oelkers
AECOM
501 Sycamore Street
Suite #222
Waterloo, Iowa 50703

Generated 10/6/2024 10:09:53 PM

JOB DESCRIPTION

Black Hawk County Landfill (IDNR)
Fall 2024

JOB NUMBER

310-291397-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



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10/6/2024 10:09:53 PM

Authorized for release by
Zach Bindert, Senior Project Manager
Zach.Bindert@et.eurofinsus.com
(319)595-2016

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Job Narrative
310-291397-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 9/26/2024 9:00 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.2°C.

GC/MS VOA
Method 8260D: The laboratory control sample (LCS) for 310-434513 recovered outside control limits for the following analytes: Xylenes, Total, m-Xylene & p-Xylene, Toluene, o-Xylene, Ethylbenzene. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Method 8260D: The continuing calibration verification (CCV) associated with batch 310-434870 recovered above the upper control limit for 2-Hexanone (50.1%D), trans-1,3-Dichloropropene (32.4%D), 1,1,2,2-Tetrachloroethane (23.0%D), 4-Methyl-2-pentanone (48.8%D), and 1,1-Dichloroethane (24.6%D). The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated sample is impacted: (CCV 310-434870/3).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
Method 6020B: The initial calibration verification (ICV) result for batch 310-435214 was above the upper control limit. The affected analytes are: Silver. Sample results were non-detects, and have been reported as qualified data.

Method 6020B: The laboratory control sample (LCS) for preparation batch 310-434436 and analytical batch 310-435214 recovered outside control limits for the following analytes: Antimony. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Field Service / Mobile Lab
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Sample Summary

Client: AECOM
Job ID: 310-291397-1
Project/Site: Black Hawk County Landfill (IDNR)

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-291397-1	OW-216BR	Ground Water	09/25/24 11:45	09/26/24 09:00
310-291397-2	Trip Blank	Water	09/25/24 06:00	09/26/24 09:00
310-291397-3	P-216CR	Groundwater	09/25/24 09:15	09/26/24 09:00
310-291397-4	P-216CR-FD	Ground Water	09/25/24 09:30	09/26/24 09:00

Detection Summary

Client: AECOM
Job ID: 310-291397-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-216BR — Lab Sample ID: 310-291397-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
m,p-Xylene	0.707	J	2.00	0.380	ug/L	1		8260D	Total/NA
Toluene	0.914	J	1.00	0.430	ug/L	1		8260D	Total/NA
Xylenes, Total	0.707	J	3.00	0.400	ug/L	1		8260D	Total/NA
Barium	246		2.00	0.660	ug/L	1		6020B	Total/NA
Total Suspended Solids	5.25		1.88	1.39	mg/L	1		I-3765-85	Total/NA
Field Turbidity	8.28				NTU	1		Field Sampling	Total/NA

Client Sample ID: Trip Blank — Lab Sample ID: 310-291397-2

No Detections.

Client Sample ID: P-216CR — Lab Sample ID: 310-291397-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	52.1		2.00	0.660	ug/L	1		6020B	Total/NA
Cobalt	1.11		0.500	0.170	ug/L	1		6020B	Total/NA
Copper	2.40	J	5.00	1.80	ug/L	1		6020B	Total/NA
Lead	0.307	J	0.500	0.260	ug/L	1		6020B	Total/NA
Nickel	2.96	J	5.00	2.10	ug/L	1		6020B	Total/NA
Total Suspended Solids	33.0		1.88	1.39	mg/L	1		I-3765-85	Total/NA
Field Turbidity	8.54				NTU	1		Field Sampling	Total/NA

Client Sample ID: P-216CR-FD — Lab Sample ID: 310-291397-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	52.8		2.00	0.660	ug/L	1		6020B	Total/NA
Cobalt	1.10		0.500	0.170	ug/L	1		6020B	Total/NA
Copper	2.83	J	5.00	1.80	ug/L	1		6020B	Total/NA
Lead	0.379	J	0.500	0.260	ug/L	1		6020B	Total/NA
Nickel	2.91	J	5.00	2.10	ug/L	1		6020B	Total/NA
Total Suspended Solids	41.3		1.88	1.39	mg/L	1		I-3765-85	Total/NA

This Detection Summary does not include radiochemical test results.

Client: AECOM
Job ID: 310-291397-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-216BR
Lab Sample ID: 310-291397-1
Date Collected: 09/25/24 11:45
Matrix: Ground Water
Date Received: 09/26/24 09:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			09/27/24 13:54	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			09/27/24 13:54	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			09/27/24 13:54	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			09/27/24 13:54	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			09/27/24 13:54	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			09/27/24 13:54	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			09/27/24 13:54	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			09/27/24 13:54	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			09/27/24 13:54	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			09/27/24 13:54	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			09/27/24 13:54	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			09/27/24 13:54	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			09/27/24 13:54	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			09/27/24 13:54	1
2-Hexanone	<2.00		10.0	2.00	ug/L			09/27/24 13:54	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			09/27/24 13:54	1
Acetone	<3.10		10.0	3.10	ug/L			09/27/24 13:54	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			09/27/24 13:54	1
Benzene	<0.220		0.500	0.220	ug/L			09/27/24 13:54	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			09/27/24 13:54	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			09/27/24 13:54	1
Bromoform	<0.780		5.00	0.780	ug/L			09/27/24 13:54	1
Bromomethane	<1.10		4.00	1.10	ug/L			09/27/24 13:54	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			09/27/24 13:54	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			09/27/24 13:54	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			09/27/24 13:54	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			09/27/24 13:54	1
Chloroethane	<0.790		4.00	0.790	ug/L			09/27/24 13:54	1
Chloroform	<1.30		3.00	1.30	ug/L			09/27/24 13:54	1
Chloromethane	<0.610		3.00	0.610	ug/L			09/27/24 13:54	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			09/27/24 13:54	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			09/27/24 13:54	1
Dibromomethane	<0.330		1.00	0.330	ug/L			09/27/24 13:54	1
Ethylbenzene	<0.310	*+	1.00	0.310	ug/L			09/27/24 13:54	1
Iodomethane	<7.00		10.0	7.00	ug/L			09/27/24 13:54	1
m,p-Xylene	**0.707**	**J**	2.00	0.380	ug/L			10/01/24 19:32	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			09/27/24 13:54	1
o-Xylene	<0.400		1.00	0.400	ug/L			10/01/24 19:32	1
Styrene	<0.370		1.00	0.370	ug/L			09/27/24 13:54	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			09/27/24 13:54	1
Toluene	**0.914**	**J**	1.00	0.430	ug/L			10/01/24 19:32	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			09/27/24 13:54	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			09/27/24 13:54	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			09/27/24 13:54	1
Trichloroethene	<0.430		1.00	0.430	ug/L			09/27/24 13:54	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			09/27/24 13:54	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			09/27/24 13:54	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			09/27/24 13:54	1
Xylenes, Total	**0.707**	**J**	3.00	0.400	ug/L			10/01/24 19:32	1

Client: AECOM
Job ID: 310-291397-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-216BR
Lab Sample ID: 310-291397-1
Date Collected: 09/25/24 11:45
Matrix: Ground Water
Date Received: 09/26/24 09:00

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*100*		*73 - 130*		*09/27/24 13:54*	*1*
Dibromofluoromethane (Surr)	*101*		*73 - 130*		*10/01/24 19:32*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*09/27/24 13:54*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*10/01/24 19:32*	*1*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*09/27/24 13:54*	*1*
4-Bromofluorobenzene (Surr)	*91*		*80 - 120*		*10/01/24 19:32*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00	*+	2.00	1.00	ug/L		09/27/24 09:00	10/03/24 20:10	1
Arsenic	<0.530		2.00	0.530	ug/L		09/27/24 09:00	10/03/24 20:10	1
Barium	**246**		2.00	0.660	ug/L		09/27/24 09:00	10/03/24 20:10	1
Beryllium	<0.330		1.00	0.330	ug/L		09/27/24 09:00	10/03/24 20:10	1
Cadmium	<0.100		0.200	0.100	ug/L		09/27/24 09:00	10/03/24 20:10	1
Chromium	<1.20		5.00	1.20	ug/L		09/27/24 09:00	10/03/24 20:10	1
Cobalt	<0.170		0.500	0.170	ug/L		09/27/24 09:00	10/03/24 20:10	1
Copper	<1.80		5.00	1.80	ug/L		09/27/24 09:00	10/03/24 20:10	1
Lead	<0.260		0.500	0.260	ug/L		09/27/24 09:00	10/03/24 20:10	1
Nickel	<2.10		5.00	2.10	ug/L		09/27/24 09:00	10/03/24 20:10	1
Selenium	<1.40		5.00	1.40	ug/L		09/27/24 09:00	10/03/24 20:10	1
Silver	<0.500	^1+	1.00	0.500	ug/L		09/27/24 09:00	10/03/24 20:10	1
Thallium	<0.570		1.00	0.570	ug/L		09/27/24 09:00	10/03/24 20:10	1
Vanadium	<1.10		5.00	1.10	ug/L		09/27/24 09:00	10/03/24 20:10	1
Zinc	<9.70		20.0	9.70	ug/L		09/27/24 09:00	10/03/24 20:10	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**5.25**		1.88	1.39	mg/L			09/26/24 12:16	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**8.28**				NTU			09/25/24 11:45	1

Client: AECOM
Job ID: 310-291397-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Trip Blank
Lab Sample ID: 310-291397-2
Date Collected: 09/25/24 06:00
Matrix: Water
Date Received: 09/26/24 09:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			09/27/24 12:46	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			09/27/24 12:46	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			09/27/24 12:46	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			09/27/24 12:46	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			09/27/24 12:46	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			09/27/24 12:46	1
1,1-Dichloropropene	<0.430		1.00	0.430	ug/L			09/27/24 12:46	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			09/27/24 12:46	1
1,2,4-Trichlorobenzene	<0.750		5.00	0.750	ug/L			09/27/24 12:46	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			09/27/24 12:46	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			09/27/24 12:46	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			09/27/24 12:46	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			09/27/24 12:46	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			09/27/24 12:46	1
1,3-Dichlorobenzene	<0.300		1.00	0.300	ug/L			09/27/24 12:46	1
1,3-Dichloropropane	<0.400		1.00	0.400	ug/L			09/27/24 12:46	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			09/27/24 12:46	1
2,2-Dichloropropane	<0.690		4.00	0.690	ug/L			09/27/24 12:46	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			09/27/24 12:46	1
2-Hexanone	<2.00		10.0	2.00	ug/L			09/27/24 12:46	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			09/27/24 12:46	1
Acetone	<3.10		10.0	3.10	ug/L			09/27/24 12:46	1
Acrolein	<3.60		10.0	3.60	ug/L			09/27/24 12:46	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			09/27/24 12:46	1
Allyl chloride	<0.700		2.00	0.700	ug/L			09/27/24 12:46	1
Benzene	<0.220		0.500	0.220	ug/L			09/27/24 12:46	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			09/27/24 12:46	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			09/27/24 12:46	1
Bromoform	<0.780		5.00	0.780	ug/L			09/27/24 12:46	1
Bromomethane	<1.10		4.00	1.10	ug/L			09/27/24 12:46	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			09/27/24 12:46	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			09/27/24 12:46	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			09/27/24 12:46	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			09/27/24 12:46	1
Chloroethane	<0.790		4.00	0.790	ug/L			09/27/24 12:46	1
Chloroform	<1.30		3.00	1.30	ug/L			09/27/24 12:46	1
Chloromethane	<0.610		3.00	0.610	ug/L			09/27/24 12:46	1
Chloroprene	<0.230		1.00	0.230	ug/L			09/27/24 12:46	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			09/27/24 12:46	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			09/27/24 12:46	1
Dibromomethane	<0.330		1.00	0.330	ug/L			09/27/24 12:46	1
Dichlorodifluoromethane	<0.250		3.00	0.250	ug/L			09/27/24 12:46	1
Ethyl methacrylate	<0.680		2.00	0.680	ug/L			09/27/24 12:46	1
Ethylbenzene	<0.310	*+	1.00	0.310	ug/L			09/27/24 12:46	1
Iodomethane	<7.00		10.0	7.00	ug/L			09/27/24 12:46	1
m,p-Xylene	<0.380	*+	2.00	0.380	ug/L			09/27/24 12:46	1
Methacrylonitrile	<3.30		10.0	3.30	ug/L			09/27/24 12:46	1
Methyl methacrylate	<0.760		2.00	0.760	ug/L			09/27/24 12:46	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			09/27/24 12:46	1

Client: AECOM
Job ID: 310-291397-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Trip Blank
Lab Sample ID: 310-291397-2
Date Collected: 09/25/24 06:00
Matrix: Water
Date Received: 09/26/24 09:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<3.00		5.00	3.00	ug/L			09/27/24 12:46	1
o-Xylene	<0.400	*+	1.00	0.400	ug/L			09/27/24 12:46	1
Propionitrile	<3.40		10.0	3.40	ug/L			09/27/24 12:46	1
Styrene	<0.370		1.00	0.370	ug/L			09/27/24 12:46	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			09/27/24 12:46	1
Toluene	<0.430	*+	1.00	0.430	ug/L			09/27/24 12:46	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			09/27/24 12:46	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			09/27/24 12:46	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			09/27/24 12:46	1
Trichloroethene	<0.430		1.00	0.430	ug/L			09/27/24 12:46	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			09/27/24 12:46	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			09/27/24 12:46	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			09/27/24 12:46	1
Xylenes, Total	<0.400	*+	3.00	0.400	ug/L			09/27/24 12:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*100*		*73 - 130*		*09/27/24 12:46*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*09/27/24 12:46*	*1*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*09/27/24 12:46*	*1*

Client: AECOM
Job ID: 310-291397-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: P-216CR
Lab Sample ID: 310-291397-3
Date Collected: 09/25/24 09:15
Matrix: Groundwater
Date Received: 09/26/24 09:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			09/27/24 14:16	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			09/27/24 14:16	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			09/27/24 14:16	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			09/27/24 14:16	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			09/27/24 14:16	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			09/27/24 14:16	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			09/27/24 14:16	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			09/27/24 14:16	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			09/27/24 14:16	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			09/27/24 14:16	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			09/27/24 14:16	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			09/27/24 14:16	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			09/27/24 14:16	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			09/27/24 14:16	1
2-Hexanone	<2.00		10.0	2.00	ug/L			09/27/24 14:16	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			09/27/24 14:16	1
Acetone	<3.10		10.0	3.10	ug/L			09/27/24 14:16	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			09/27/24 14:16	1
Benzene	<0.220		0.500	0.220	ug/L			09/27/24 14:16	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			09/27/24 14:16	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			09/27/24 14:16	1
Bromoform	<0.780		5.00	0.780	ug/L			09/27/24 14:16	1
Bromomethane	<1.10		4.00	1.10	ug/L			09/27/24 14:16	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			09/27/24 14:16	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			09/27/24 14:16	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			09/27/24 14:16	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			09/27/24 14:16	1
Chloroethane	<0.790		4.00	0.790	ug/L			09/27/24 14:16	1
Chloroform	<1.30		3.00	1.30	ug/L			09/27/24 14:16	1
Chloromethane	<0.610		3.00	0.610	ug/L			09/27/24 14:16	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			09/27/24 14:16	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			09/27/24 14:16	1
Dibromomethane	<0.330		1.00	0.330	ug/L			09/27/24 14:16	1
Ethylbenzene	<0.310	*+	1.00	0.310	ug/L			09/27/24 14:16	1
Iodomethane	<7.00		10.0	7.00	ug/L			09/27/24 14:16	1
m,p-Xylene	<0.380	*+	2.00	0.380	ug/L			09/27/24 14:16	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			09/27/24 14:16	1
o-Xylene	<0.400	*+	1.00	0.400	ug/L			09/27/24 14:16	1
Styrene	<0.370		1.00	0.370	ug/L			09/27/24 14:16	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			09/27/24 14:16	1
Toluene	<0.430	*+	1.00	0.430	ug/L			09/27/24 14:16	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			09/27/24 14:16	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			09/27/24 14:16	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			09/27/24 14:16	1
Trichloroethene	<0.430		1.00	0.430	ug/L			09/27/24 14:16	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			09/27/24 14:16	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			09/27/24 14:16	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			09/27/24 14:16	1
Xylenes, Total	<0.400	*+	3.00	0.400	ug/L			09/27/24 14:16	1

Client: AECOM
Job ID: 310-291397-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: P-216CR
Lab Sample ID: 310-291397-3

Date Collected: 09/25/24 09:15
Matrix: Groundwater

Date Received: 09/26/24 09:00

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*100*		*73 - 130*		*09/27/24 14:16*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*09/27/24 14:16*	*1*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*09/27/24 14:16*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00	*+	2.00	1.00	ug/L		09/27/24 09:00	10/03/24 20:12	1
Arsenic	<0.530		2.00	0.530	ug/L		09/27/24 09:00	10/03/24 20:12	1
Barium	**52.1**		2.00	0.660	ug/L		09/27/24 09:00	10/03/24 20:12	1
Beryllium	<0.330		1.00	0.330	ug/L		09/27/24 09:00	10/03/24 20:12	1
Cadmium	<0.100		0.200	0.100	ug/L		09/27/24 09:00	10/03/24 20:12	1
Chromium	<1.20		5.00	1.20	ug/L		09/27/24 09:00	10/03/24 20:12	1
Cobalt	**1.11**		0.500	0.170	ug/L		09/27/24 09:00	10/03/24 20:12	1
Copper	**2.40**	**J**	5.00	1.80	ug/L		09/27/24 09:00	10/03/24 20:12	1
Lead	**0.307**	**J**	0.500	0.260	ug/L		09/27/24 09:00	10/03/24 20:12	1
Nickel	**2.96**	**J**	5.00	2.10	ug/L		09/27/24 09:00	10/03/24 20:12	1
Selenium	<1.40		5.00	1.40	ug/L		09/27/24 09:00	10/03/24 20:12	1
Silver	<0.500	^1+	1.00	0.500	ug/L		09/27/24 09:00	10/03/24 20:12	1
Thallium	<0.570		1.00	0.570	ug/L		09/27/24 09:00	10/03/24 20:12	1
Vanadium	<1.10		5.00	1.10	ug/L		09/27/24 09:00	10/03/24 20:12	1
Zinc	<9.70		20.0	9.70	ug/L		09/27/24 09:00	10/03/24 20:12	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**33.0**		1.88	1.39	mg/L			09/26/24 12:16	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**8.54**				NTU			09/25/24 09:15	1

Client: AECOM
Job ID: 310-291397-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: P-216CR-FD
Lab Sample ID: 310-291397-4
Date Collected: 09/25/24 09:30
Matrix: Ground Water
Date Received: 09/26/24 09:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			09/27/24 14:39	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			09/27/24 14:39	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			09/27/24 14:39	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			09/27/24 14:39	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			09/27/24 14:39	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			09/27/24 14:39	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			09/27/24 14:39	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			09/27/24 14:39	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			09/27/24 14:39	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			09/27/24 14:39	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			09/27/24 14:39	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			09/27/24 14:39	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			09/27/24 14:39	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			09/27/24 14:39	1
2-Hexanone	<2.00		10.0	2.00	ug/L			09/27/24 14:39	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			09/27/24 14:39	1
Acetone	<3.10		10.0	3.10	ug/L			09/27/24 14:39	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			09/27/24 14:39	1
Benzene	<0.220		0.500	0.220	ug/L			09/27/24 14:39	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			09/27/24 14:39	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			09/27/24 14:39	1
Bromoform	<0.780		5.00	0.780	ug/L			09/27/24 14:39	1
Bromomethane	<1.10		4.00	1.10	ug/L			09/27/24 14:39	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			09/27/24 14:39	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			09/27/24 14:39	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			09/27/24 14:39	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			09/27/24 14:39	1
Chloroethane	<0.790		4.00	0.790	ug/L			09/27/24 14:39	1
Chloroform	<1.30		3.00	1.30	ug/L			09/27/24 14:39	1
Chloromethane	<0.610		3.00	0.610	ug/L			09/27/24 14:39	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			09/27/24 14:39	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			09/27/24 14:39	1
Dibromomethane	<0.330		1.00	0.330	ug/L			09/27/24 14:39	1
Ethylbenzene	<0.310	*+	1.00	0.310	ug/L			09/27/24 14:39	1
Iodomethane	<7.00		10.0	7.00	ug/L			09/27/24 14:39	1
m,p-Xylene	<0.380	*+	2.00	0.380	ug/L			09/27/24 14:39	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			09/27/24 14:39	1
o-Xylene	<0.400	*+	1.00	0.400	ug/L			09/27/24 14:39	1
Styrene	<0.370		1.00	0.370	ug/L			09/27/24 14:39	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			09/27/24 14:39	1
Toluene	<0.430	*+	1.00	0.430	ug/L			09/27/24 14:39	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			09/27/24 14:39	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			09/27/24 14:39	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			09/27/24 14:39	1
Trichloroethene	<0.430		1.00	0.430	ug/L			09/27/24 14:39	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			09/27/24 14:39	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			09/27/24 14:39	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			09/27/24 14:39	1
Xylenes, Total	<0.400	*+	3.00	0.400	ug/L			09/27/24 14:39	1

Client: AECOM
Project/Site: Black Hawk County Landfill (IDNR)

Job ID: 310-291397-1

Client Sample ID: P-216CR-FD

Date Collected: 09/25/24 09:30
Date Received: 09/26/24 09:00

Lab Sample ID: 310-291397-4

Matrix: Ground Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*101*		*73 - 130*		*09/27/24 14:39*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*09/27/24 14:39*	*1*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*09/27/24 14:39*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00	*+	2.00	1.00	ug/L		09/27/24 09:00	10/03/24 20:14	1
Arsenic	<0.530		2.00	0.530	ug/L		09/27/24 09:00	10/03/24 20:14	1
Barium	**52.8**		2.00	0.660	ug/L		09/27/24 09:00	10/03/24 20:14	1
Beryllium	<0.330		1.00	0.330	ug/L		09/27/24 09:00	10/03/24 20:14	1
Cadmium	<0.100		0.200	0.100	ug/L		09/27/24 09:00	10/03/24 20:14	1
Chromium	<1.20		5.00	1.20	ug/L		09/27/24 09:00	10/03/24 20:14	1
Cobalt	**1.10**		0.500	0.170	ug/L		09/27/24 09:00	10/03/24 20:14	1
Copper	**2.83**	**J**	5.00	1.80	ug/L		09/27/24 09:00	10/03/24 20:14	1
Lead	**0.379**	**J**	0.500	0.260	ug/L		09/27/24 09:00	10/03/24 20:14	1
Nickel	**2.91**	**J**	5.00	2.10	ug/L		09/27/24 09:00	10/03/24 20:14	1
Selenium	<1.40		5.00	1.40	ug/L		09/27/24 09:00	10/03/24 20:14	1
Silver	<0.500	^1+	1.00	0.500	ug/L		09/27/24 09:00	10/03/24 20:14	1
Thallium	<0.570		1.00	0.570	ug/L		09/27/24 09:00	10/03/24 20:14	1
Vanadium	<1.10		5.00	1.10	ug/L		09/27/24 09:00	10/03/24 20:14	1
Zinc	<9.70		20.0	9.70	ug/L		09/27/24 09:00	10/03/24 20:14	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**41.3**		1.88	1.39	mg/L			09/26/24 12:16	1

Definitions/Glossary

Client: AECOM
Job ID: 310-291397-1
Project/Site: Black Hawk County Landfill (IDNR)

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
^1+	Initial Calibration Verification (ICV) is outside acceptance limits, high biased.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Surrogate Summary

Client: AECOM
Job ID: 310-291397-1
Project/Site: Black Hawk County Landfill (IDNR)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Ground Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-291397-1	OW-216BR	100	100	99
310-291397-1	OW-216BR	101	98	91
310-291397-4	P-216CR-FD	101	98	99

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Groundwater — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-291397-3	P-216CR	100	99	99

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-291397-2	Trip Blank	100	99	99
LCS 310-434513/6	Lab Control Sample	101	100	97
LCS 310-434513/7	Lab Control Sample	101	99	99
LCS 310-434870/6	Lab Control Sample	92	104	98
LCS 310-434870/7	Lab Control Sample	103	99	93
MB 310-434513/5	Method Blank	100	100	98
MB 310-434870/5	Method Blank	101	98	92

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 310-434513/5
Matrix: Water
Analysis Batch: 434513

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			09/27/24 10:52	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			09/27/24 10:52	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			09/27/24 10:52	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			09/27/24 10:52	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			09/27/24 10:52	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			09/27/24 10:52	1
1,1-Dichloropropene	<0.430		1.00	0.430	ug/L			09/27/24 10:52	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			09/27/24 10:52	1
1,2,4-Trichlorobenzene	<0.750		5.00	0.750	ug/L			09/27/24 10:52	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			09/27/24 10:52	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			09/27/24 10:52	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			09/27/24 10:52	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			09/27/24 10:52	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			09/27/24 10:52	1
1,3-Dichlorobenzene	<0.300		1.00	0.300	ug/L			09/27/24 10:52	1
1,3-Dichloropropane	<0.400		1.00	0.400	ug/L			09/27/24 10:52	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			09/27/24 10:52	1
2,2-Dichloropropane	<0.690		4.00	0.690	ug/L			09/27/24 10:52	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			09/27/24 10:52	1
2-Hexanone	<2.00		10.0	2.00	ug/L			09/27/24 10:52	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			09/27/24 10:52	1
Acetone	<3.10		10.0	3.10	ug/L			09/27/24 10:52	1
Acrolein	<3.60		10.0	3.60	ug/L			09/27/24 10:52	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			09/27/24 10:52	1
Allyl chloride	<0.700		2.00	0.700	ug/L			09/27/24 10:52	1
Benzene	<0.220		0.500	0.220	ug/L			09/27/24 10:52	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			09/27/24 10:52	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			09/27/24 10:52	1
Bromoform	<0.780		5.00	0.780	ug/L			09/27/24 10:52	1
Bromomethane	<1.10		4.00	1.10	ug/L			09/27/24 10:52	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			09/27/24 10:52	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			09/27/24 10:52	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			09/27/24 10:52	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			09/27/24 10:52	1
Chloroethane	<0.790		4.00	0.790	ug/L			09/27/24 10:52	1
Chloroform	<1.30		3.00	1.30	ug/L			09/27/24 10:52	1
Chloromethane	<0.610		3.00	0.610	ug/L			09/27/24 10:52	1
Chloroprene	<0.230		1.00	0.230	ug/L			09/27/24 10:52	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			09/27/24 10:52	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			09/27/24 10:52	1
Dibromomethane	<0.330		1.00	0.330	ug/L			09/27/24 10:52	1
Dichlorodifluoromethane	<0.250		3.00	0.250	ug/L			09/27/24 10:52	1
Ethyl methacrylate	<0.680		2.00	0.680	ug/L			09/27/24 10:52	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			09/27/24 10:52	1
Iodomethane	<7.00		10.0	7.00	ug/L			09/27/24 10:52	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			09/27/24 10:52	1
Methacrylonitrile	<3.30		10.0	3.30	ug/L			09/27/24 10:52	1
Methyl methacrylate	<0.760		2.00	0.760	ug/L			09/27/24 10:52	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-434513/5
Matrix: Water
Analysis Batch: 434513

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylene Chloride	<1.70		5.00	1.70	ug/L			09/27/24 10:52	1
Naphthalene	<3.00		5.00	3.00	ug/L			09/27/24 10:52	1
o-Xylene	<0.400		1.00	0.400	ug/L			09/27/24 10:52	1
Propionitrile	<3.40		10.0	3.40	ug/L			09/27/24 10:52	1
Styrene	<0.370		1.00	0.370	ug/L			09/27/24 10:52	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			09/27/24 10:52	1
Toluene	<0.430		1.00	0.430	ug/L			09/27/24 10:52	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			09/27/24 10:52	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			09/27/24 10:52	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			09/27/24 10:52	1
Trichloroethene	<0.430		1.00	0.430	ug/L			09/27/24 10:52	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			09/27/24 10:52	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			09/27/24 10:52	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			09/27/24 10:52	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			09/27/24 10:52	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*100*		*73 - 130*		*09/27/24 10:52*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*09/27/24 10:52*	*1*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*09/27/24 10:52*	*1*

Lab Sample ID: LCS 310-434513/6
Matrix: Water
Analysis Batch: 434513

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	20.0	18.59		ug/L		93	71 - 120
1,1,1-Trichloroethane	20.0	18.87		ug/L		94	73 - 129
1,1,2,2-Tetrachloroethane	20.0	18.65		ug/L		93	68 - 124
1,1,2-Trichloroethane	20.0	18.98		ug/L		95	73 - 123
1,1-Dichloroethane	20.0	18.61		ug/L		93	70 - 127
1,1-Dichloroethene	20.0	18.85		ug/L		94	63 - 132
1,1-Dichloropropene	20.0	18.93		ug/L		95	69 - 132
1,2,3-Trichloropropane	20.0	18.56		ug/L		93	65 - 127
1,2,4-Trichlorobenzene	20.0	19.03		ug/L		95	68 - 124
1,2-Dibromo-3-Chloropropane	20.0	18.19		ug/L		91	50 - 150
1,2-Dibromoethane (EDB)	20.0	18.53		ug/L		93	75 - 125
1,2-Dichlorobenzene	20.0	18.88		ug/L		94	74 - 120
1,2-Dichloroethane	20.0	18.63		ug/L		93	71 - 125
1,2-Dichloropropane	20.0	19.01		ug/L		95	73 - 124
1,3-Dichlorobenzene	20.0	18.81		ug/L		94	72 - 120
1,3-Dichloropropane	20.0	18.78		ug/L		94	72 - 125
1,4-Dichlorobenzene	20.0	18.63		ug/L		93	72 - 120
2,2-Dichloropropane	20.0	20.85		ug/L		104	50 - 150
2-Butanone (MEK)	40.0	36.12		ug/L		90	50 - 150
2-Hexanone	40.0	39.70		ug/L		99	60 - 140
4-Methyl-2-pentanone (MIBK)	40.0	40.04		ug/L		100	60 - 139
Acetone	40.0	33.41		ug/L		84	50 - 150

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-434513/6
Matrix: Water
Analysis Batch: 434513

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Acrolein	94.8	94.52		ug/L		100	49 - 150
Acrylonitrile	200	185.9		ug/L		93	50 - 150
Allyl chloride	20.0	19.38		ug/L		97	49 - 150
Benzene	20.0	18.85		ug/L		94	72 - 124
Bromochloromethane	20.0	18.78		ug/L		94	73 - 130
Bromodichloromethane	20.0	18.29		ug/L		91	74 - 122
Bromoform	20.0	18.26		ug/L		91	61 - 122
Carbon disulfide	20.0	17.69		ug/L		88	59 - 135
Carbon tetrachloride	20.0	19.03		ug/L		95	67 - 132
Chlorobenzene	20.0	18.47		ug/L		92	76 - 120
Chlorodibromomethane	20.0	19.06		ug/L		95	71 - 121
Chloroform	20.0	18.69		ug/L		93	72 - 125
Chloroprene	20.0	19.22		ug/L		96	69 - 133
cis-1,2-Dichloroethene	20.0	18.73		ug/L		94	74 - 123
cis-1,3-Dichloropropene	20.0	19.04		ug/L		95	71 - 125
Dibromomethane	20.0	18.48		ug/L		92	74 - 125
Ethyl methacrylate	20.0	19.90		ug/L		100	70 - 129
Ethylbenzene	20.0	51.25	*+	ug/L		256	74 - 122
Iodomethane	20.0	16.21		ug/L		81	10 - 150
Methacrylonitrile	200	190.6		ug/L		95	69 - 129
Methyl methacrylate	40.0	42.49		ug/L		106	68 - 131
Methylene Chloride	20.0	19.18		ug/L		96	50 - 150
Naphthalene	20.0	18.91		ug/L		95	50 - 150
Propionitrile	200	186.5		ug/L		93	63 - 135
Styrene	20.0	20.93		ug/L		105	74 - 121
Tetrachloroethene	20.0	19.35		ug/L		97	71 - 130
Toluene	20.0	212.0	*+	ug/L		1060	74 - 123
trans-1,2-Dichloroethene	20.0	18.52		ug/L		93	70 - 126
trans-1,3-Dichloropropene	20.0	18.55		ug/L		93	69 - 123
trans-1,4-Dichloro-2-butene	20.0	17.50		ug/L		87	50 - 150
Trichloroethene	20.0	18.85		ug/L		94	72 - 126
Vinyl acetate	40.0	38.35		ug/L		96	50 - 150
Xylenes, Total	40.0	309.5	*+	ug/L		774	73 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*101*		*73 - 130*
Toluene-d8 (Surr)	*100*		*80 - 120*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*

Lab Sample ID: LCS 310-434513/7
Matrix: Water
Analysis Batch: 434513

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	16.59		ug/L		83	23 - 150
Chloroethane	20.0	18.15		ug/L		91	54 - 136
Chloromethane	20.0	18.38		ug/L		92	38 - 150
Dichlorodifluoromethane	20.0	19.81		ug/L		99	39 - 150

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-434513/7
Matrix: Water
Analysis Batch: 434513

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Trichlorofluoromethane	20.0	18.93		ug/L		95	54 - 149
Vinyl chloride	20.0	18.64		ug/L		93	56 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*101*		*73 - 130*
Toluene-d8 (Surr)	*99*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*

Lab Sample ID: MB 310-434870/5
Matrix: Water
Analysis Batch: 434870

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			10/01/24 18:05	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			10/01/24 18:05	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			10/01/24 18:05	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			10/01/24 18:05	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			10/01/24 18:05	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			10/01/24 18:05	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			10/01/24 18:05	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			10/01/24 18:05	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			10/01/24 18:05	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			10/01/24 18:05	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			10/01/24 18:05	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			10/01/24 18:05	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			10/01/24 18:05	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			10/01/24 18:05	1
2-Hexanone	<2.00		10.0	2.00	ug/L			10/01/24 18:05	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			10/01/24 18:05	1
Acetone	<3.10		10.0	3.10	ug/L			10/01/24 18:05	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			10/01/24 18:05	1
Benzene	<0.220		0.500	0.220	ug/L			10/01/24 18:05	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			10/01/24 18:05	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			10/01/24 18:05	1
Bromoform	<0.780		5.00	0.780	ug/L			10/01/24 18:05	1
Bromomethane	<1.10		4.00	1.10	ug/L			10/01/24 18:05	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			10/01/24 18:05	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			10/01/24 18:05	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			10/01/24 18:05	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			10/01/24 18:05	1
Chloroethane	<0.790		4.00	0.790	ug/L			10/01/24 18:05	1
Chloroform	<1.30		3.00	1.30	ug/L			10/01/24 18:05	1
Chloromethane	<0.610		3.00	0.610	ug/L			10/01/24 18:05	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			10/01/24 18:05	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			10/01/24 18:05	1
Dibromomethane	<0.330		1.00	0.330	ug/L			10/01/24 18:05	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			10/01/24 18:05	1
Iodomethane	<7.00		10.0	7.00	ug/L			10/01/24 18:05	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-434870/5
Matrix: Water
Analysis Batch: 434870

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
m,p-Xylene	<0.380		2.00	0.380	ug/L			10/01/24 18:05	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			10/01/24 18:05	1
o-Xylene	<0.400		1.00	0.400	ug/L			10/01/24 18:05	1
Styrene	<0.370		1.00	0.370	ug/L			10/01/24 18:05	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			10/01/24 18:05	1
Toluene	<0.430		1.00	0.430	ug/L			10/01/24 18:05	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			10/01/24 18:05	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			10/01/24 18:05	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			10/01/24 18:05	1
Trichloroethene	<0.430		1.00	0.430	ug/L			10/01/24 18:05	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			10/01/24 18:05	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			10/01/24 18:05	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			10/01/24 18:05	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			10/01/24 18:05	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*101*		*73 - 130*		*10/01/24 18:05*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*10/01/24 18:05*	*1*
4-Bromofluorobenzene (Surr)	*92*		*80 - 120*		*10/01/24 18:05*	*1*

Lab Sample ID: LCS 310-434870/6
Matrix: Water
Analysis Batch: 434870

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	20.0	15.90		ug/L		79	71 - 120
1,1,1-Trichloroethane	20.0	16.19		ug/L		81	73 - 129
1,1,2,2-Tetrachloroethane	20.0	21.66		ug/L		108	68 - 124
1,1,2-Trichloroethane	20.0	18.22		ug/L		91	73 - 123
1,1-Dichloroethane	20.0	20.28		ug/L		101	70 - 127
1,1-Dichloroethene	20.0	18.67		ug/L		93	63 - 132
1,2,3-Trichloropropane	20.0	19.19		ug/L		96	65 - 127
1,2-Dibromo-3-Chloropropane	20.0	22.60		ug/L		113	50 - 150
1,2-Dibromoethane (EDB)	20.0	17.70		ug/L		88	75 - 125
1,2-Dichlorobenzene	20.0	17.17		ug/L		86	74 - 120
1,2-Dichloroethane	20.0	17.47		ug/L		87	71 - 125
1,2-Dichloropropane	20.0	19.76		ug/L		99	73 - 124
1,4-Dichlorobenzene	20.0	17.07		ug/L		85	72 - 120
2-Butanone (MEK)	40.0	42.35		ug/L		106	50 - 150
2-Hexanone	40.0	49.47		ug/L		124	60 - 140
4-Methyl-2-pentanone (MIBK)	40.0	42.59		ug/L		106	60 - 139
Acetone	40.0	51.00		ug/L		128	50 - 150
Acrylonitrile	200	211.6		ug/L		106	50 - 150
Benzene	20.0	18.53		ug/L		93	72 - 124
Bromochloromethane	20.0	16.12		ug/L		81	73 - 130
Bromodichloromethane	20.0	15.78		ug/L		79	74 - 122
Bromoform	20.0	15.93		ug/L		80	61 - 122
Carbon disulfide	20.0	19.24		ug/L		96	59 - 135

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-434870/6
Matrix: Water
Analysis Batch: 434870

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Carbon tetrachloride	20.0	14.38		ug/L		72	67 - 132
Chlorobenzene	20.0	16.90		ug/L		85	76 - 120
Chlorodibromomethane	20.0	15.09		ug/L		75	71 - 121
Chloroform	20.0	18.10		ug/L		91	72 - 125
cis-1,2-Dichloroethene	20.0	16.70		ug/L		84	74 - 123
cis-1,3-Dichloropropene	20.0	18.02		ug/L		90	71 - 125
Dibromomethane	20.0	16.79		ug/L		84	74 - 125
Ethylbenzene	20.0	18.79		ug/L		94	74 - 122
Iodomethane	20.0	16.45		ug/L		82	10 - 150
Methylene Chloride	20.0	20.04		ug/L		100	50 - 150
Styrene	20.0	18.06		ug/L		90	74 - 121
Tetrachloroethene	20.0	14.97		ug/L		75	71 - 130
Toluene	20.0	17.65		ug/L		88	74 - 123
trans-1,2-Dichloroethene	20.0	15.90		ug/L		80	70 - 126
trans-1,3-Dichloropropene	20.0	19.89		ug/L		99	69 - 123
trans-1,4-Dichloro-2-butene	20.0	22.98		ug/L		115	50 - 150
Trichloroethene	20.0	16.89		ug/L		84	72 - 126
Vinyl acetate	40.0	36.16		ug/L		90	50 - 150
Xylenes, Total	40.0	34.54		ug/L		86	73 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*92*		*73 - 130*
Toluene-d8 (Surr)	*104*		*80 - 120*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*

Lab Sample ID: LCS 310-434870/7
Matrix: Water
Analysis Batch: 434870

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	15.63		ug/L		78	23 - 150
Chloroethane	20.0	19.71		ug/L		99	54 - 136
Chloromethane	20.0	25.71		ug/L		129	38 - 150
Trichlorofluoromethane	20.0	17.60		ug/L		88	54 - 149
Vinyl chloride	20.0	20.76		ug/L		104	56 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*103*		*73 - 130*
Toluene-d8 (Surr)	*99*		*80 - 120*
4-Bromofluorobenzene (Surr)	*93*		*80 - 120*

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-434436/1-A
Matrix: Water
Analysis Batch: 435214

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 434436

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		09/27/24 09:00	10/03/24 19:09	1
Arsenic	<0.530		2.00	0.530	ug/L		09/27/24 09:00	10/03/24 19:09	1
Barium	<0.660		2.00	0.660	ug/L		09/27/24 09:00	10/03/24 19:09	1
Beryllium	<0.330		1.00	0.330	ug/L		09/27/24 09:00	10/03/24 19:09	1
Cadmium	<0.100		0.200	0.100	ug/L		09/27/24 09:00	10/03/24 19:09	1
Chromium	<1.20		5.00	1.20	ug/L		09/27/24 09:00	10/03/24 19:09	1
Cobalt	<0.170		0.500	0.170	ug/L		09/27/24 09:00	10/03/24 19:09	1
Copper	<1.80		5.00	1.80	ug/L		09/27/24 09:00	10/03/24 19:09	1
Lead	<0.260		0.500	0.260	ug/L		09/27/24 09:00	10/03/24 19:09	1
Nickel	<2.10		5.00	2.10	ug/L		09/27/24 09:00	10/03/24 19:09	1
Selenium	<1.40		5.00	1.40	ug/L		09/27/24 09:00	10/03/24 19:09	1
Silver	<0.500	^1+	1.00	0.500	ug/L		09/27/24 09:00	10/03/24 19:09	1
Thallium	<0.570		1.00	0.570	ug/L		09/27/24 09:00	10/03/24 19:09	1
Vanadium	<1.10		5.00	1.10	ug/L		09/27/24 09:00	10/03/24 19:09	1
Zinc	<9.70		20.0	9.70	ug/L		09/27/24 09:00	10/03/24 19:09	1

Lab Sample ID: LCS 310-434436/2-A
Matrix: Water
Analysis Batch: 435214

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 434436

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	200	241.6	*+	ug/L		121	80 - 120
Arsenic	200	220.5		ug/L		110	80 - 120
Barium	100	109.1		ug/L		109	80 - 120
Beryllium	100	102.0		ug/L		102	80 - 120
Cadmium	100	104.7		ug/L		105	80 - 120
Chromium	100	97.16		ug/L		97	80 - 120
Cobalt	100	112.4		ug/L		112	80 - 120
Copper	200	219.0		ug/L		110	80 - 120
Lead	200	213.3		ug/L		107	80 - 120
Nickel	200	210.5		ug/L		105	80 - 120
Selenium	400	418.2		ug/L		105	80 - 120
Silver	100	111.7	^1+	ug/L		112	80 - 120
Thallium	100	96.18		ug/L		96	80 - 120
Vanadium	100	93.33		ug/L		93	80 - 120
Zinc	200	196.6		ug/L		98	80 - 120

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: MB 310-434408/1
Matrix: Water
Analysis Batch: 434408

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<3.70		5.00	3.70	mg/L			09/26/24 12:16	1

Client: AECOM
Job ID: 310-291397-1
Project/Site: Black Hawk County Landfill (IDNR)

Method: I-3765-85 - Residue, Non-filterable (TSS) (Continued)

Lab Sample ID: LCS 310-434408/2
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 434408

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Suspended Solids			100	98.00		mg/L		98	81 - 116		

GC/MS VOA

Analysis Batch: 434513

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-291397-1	OW-216BR	Total/NA	Ground Water	8260D	
310-291397-2	Trip Blank	Total/NA	Water	8260D	
310-291397-3	P-216CR	Total/NA	Groundwater	8260D	
310-291397-4	P-216CR-FD	Total/NA	Ground Water	8260D	
MB 310-434513/5	Method Blank	Total/NA	Water	8260D	
LCS 310-434513/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-434513/7	Lab Control Sample	Total/NA	Water	8260D	

Analysis Batch: 434870

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-291397-1	OW-216BR	Total/NA	Ground Water	8260D	
MB 310-434870/5	Method Blank	Total/NA	Water	8260D	
LCS 310-434870/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-434870/7	Lab Control Sample	Total/NA	Water	8260D	

Metals

Prep Batch: 434436

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-291397-1	OW-216BR	Total/NA	Ground Water	3005A	
310-291397-3	P-216CR	Total/NA	Groundwater	3005A	
310-291397-4	P-216CR-FD	Total/NA	Ground Water	3005A	
MB 310-434436/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-434436/2-A	Lab Control Sample	Total/NA	Water	3005A	

Analysis Batch: 435214

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-291397-1	OW-216BR	Total/NA	Ground Water	6020B	434436
310-291397-3	P-216CR	Total/NA	Groundwater	6020B	434436
310-291397-4	P-216CR-FD	Total/NA	Ground Water	6020B	434436
MB 310-434436/1-A	Method Blank	Total/NA	Water	6020B	434436
LCS 310-434436/2-A	Lab Control Sample	Total/NA	Water	6020B	434436

General Chemistry

Analysis Batch: 434408

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-291397-1	OW-216BR	Total/NA	Ground Water	I-3765-85	
310-291397-3	P-216CR	Total/NA	Groundwater	I-3765-85	
310-291397-4	P-216CR-FD	Total/NA	Ground Water	I-3765-85	
MB 310-434408/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-434408/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Field Service / Mobile Lab

Analysis Batch: 434705

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-291397-1	OW-216BR	Total/NA	Ground Water	Field Sampling	
310-291397-3	P-216CR	Total/NA	Groundwater	Field Sampling	

Lab Chronicle

Client: AECOM
Job ID: 310-291397-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-216BR
Lab Sample ID: 310-291397-1
Date Collected: 09/25/24 11:45
Matrix: Ground Water
Date Received: 09/26/24 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	434870	WSE8	EET CF	10/01/24 19:32
Total/NA	Analysis	8260D		1	434513	WSE8	EET CF	09/27/24 13:54
Total/NA	Prep	3005A			434436	F5MW	EET CF	09/27/24 09:00
Total/NA	Analysis	6020B		1	435214	NFT2	EET CF	10/03/24 20:10
Total/NA	Analysis	I-3765-85		1	434408	DGU1	EET CF	09/26/24 12:16
Total/NA	Analysis	Field Sampling		1	434705	BJ0R	EET CF	09/25/24 11:45

Client Sample ID: Trip Blank
Lab Sample ID: 310-291397-2
Date Collected: 09/25/24 06:00
Matrix: Water
Date Received: 09/26/24 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	434513	WSE8	EET CF	09/27/24 12:46

Client Sample ID: P-216CR
Lab Sample ID: 310-291397-3
Date Collected: 09/25/24 09:15
Matrix: Groundwater
Date Received: 09/26/24 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	434513	WSE8	EET CF	09/27/24 14:16
Total/NA	Prep	3005A			434436	F5MW	EET CF	09/27/24 09:00
Total/NA	Analysis	6020B		1	435214	NFT2	EET CF	10/03/24 20:12
Total/NA	Analysis	I-3765-85		1	434408	DGU1	EET CF	09/26/24 12:16
Total/NA	Analysis	Field Sampling		1	434705	BJ0R	EET CF	09/25/24 09:15

Client Sample ID: P-216CR-FD
Lab Sample ID: 310-291397-4
Date Collected: 09/25/24 09:30
Matrix: Ground Water
Date Received: 09/26/24 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	434513	WSE8	EET CF	09/27/24 14:39
Total/NA	Prep	3005A			434436	F5MW	EET CF	09/27/24 09:00
Total/NA	Analysis	6020B		1	435214	NFT2	EET CF	10/03/24 20:14
Total/NA	Analysis	I-3765-85		1	434408	DGU1	EET CF	09/26/24 12:16

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Accreditation/Certification Summary

Client: AECOM
Job ID: 310-291397-1
Project/Site: Black Hawk County Landfill (IDNR)

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8260D		Ground Water	m,p-Xylene
8260D		Ground Water	o-Xylene
8260D		Groundwater	m,p-Xylene
8260D		Groundwater	o-Xylene
8260D		Water	1,2,4-Trichlorobenzene
8260D		Water	Allyl chloride
8260D		Water	Ethyl methacrylate
8260D		Water	m,p-Xylene
8260D		Water	o-Xylene
Field Sampling		Ground Water	Field Turbidity
Field Sampling		Groundwater	Field Turbidity

Method Summary

Client: AECOM
Job ID: 310-291397-1
Project/Site: Black Hawk County Landfill (IDNR)

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
Field Sampling	Field Sampling	EPA	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
5030B	Purge and Trap	SW846	EET CF

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

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310-291397 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: AECOM

City/State: CITY Waterloo STATE IA. Project: Black Hawk Co. IDNR

Receipt Information

Date/Time Received: DATE 9/26/24 TIME 9:00 Received By: JL

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ Lab Field Services ☑ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler?	☑ Yes	☐ No	*If yes:* Cooler ID:
Multiple Coolers?	☐ Yes	☑ No	*If yes:* Cooler # _____ of _____
Cooler Custody Seals Present?	☐ Yes	☑ No	*If yes:* Cooler custody seals intact? ☐ Yes ☐ No
Sample Custody Seals Present?	☐ Yes	☑ No	*If yes:* Sample custody seals intact? ☐ Yes ☐ No
Trip Blank Present?	☐ Yes	☑ No	*If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☑ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE 0

Thermometer ID: 4 Correction Factor (°C): 0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 1.2 Corrected Temp (°C): 1.2

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g , bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE: If yes, contact PM before proceeding If no, proceed with login

Additional Comments

Eurofins Cedar Falls
3019 Venture Way

Cedar Falls, IA 50613
phone 319 277.2401 fax 319.277 2425

Chain of Custody Record

eurofins Environment Testing America

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other IDNR

Eurofins Environment Testing America

Client Contact	**Project Manager: Chris Oelkers**		COC No
AECOM	Email Christopher Oelkers@aecom.com	**Site Contact:**	**Date:** 9-26-24	1 of 2 COCs
501 Sycamore Street, Suite 222	**Tel/Fax:319-296-6878**	**Lab Contact:**	**Carrier:**	TALS Project #
Waterloo, IA 50703	**Analysis Turnaround Time**			Sampler
(319) 232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS			**For Lab Use Only:**
(xxx) xxx-xxxx FAX	TAT if different from Below ____			Walk-in Client.
Project Name Black Hawk Co IDNR	☑ 2 weeks			Lab Sampling
Site Black Hawk County Landfill	☐ 1 week			
P O #	☐ 2 days			Job / SDG No
	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Appendix I, TSS	Appendix II, TSS	2,4-D	4,4'-DDD	beta-BHC	delta BHC	Endosulfan I	Endosulfan sulfate	Endrin aldehyde	Silvex	Sulfide							Sample Specific Notes
OW-101B			G	GW		N		X																	
OW-105B			G	GW		N		X																	
OW-113B			G	GW		N		X										X							
OW-114B			G	GW		N		X																	
OW-205B			G	GW		N		X			X			X				X							
OW-209B			G	GW		N		X																	
OW-209B-FD			G	GW		N		X																	
OW-212B			G	GW		N		X																	
OW-213BR			G	GW		N		X																	
OW-216BR	9-25-24	1145	G	GW	5	N		X																	Turbidity - 8.28 NTU
OW-219B			G	GW		N		X																	
Trip Blank	9-25-24	0600	G	W	3	N		X																	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for ____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No | Cooler Temp (°C) Obs'd.____ Corr'd.____ | Therm ID No.____

Relinquished by: Ben Porter	Company: Accom	Date/Time: 9-26-24	Received by:	Company:	Date/Time: 9/26/24 / 9:00
Relinquished by:	Company:	Date/Time	Received by:	Company:	Date/Time
Relinquished by:	Company:	Date/Time	Received in Laboratory by:	Company:	Date/Time

Eurofins Cedar Falls
3019 Venture Way

Cedar Falls, IA 50613
phone 319.277.2401 fax 319.277 2425

Chain of Custody Record

eurofins Environment Testing America

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other IDNR

Eurofins Environment Testing America

Client Contact	**Project Manager: Chris Oelkers**	COC No
AECOM	Email Christopher Oelkers@aecom.com	**Site Contact:** **Date:**	_____ of _____ COCs
501 Sycamore Street, Suite 222	**Tel/Fax:319-296-6878**	**Lab Contact:** **Carrier:**	TALS Project #
Waterloo, IA 50703	**Analysis Turnaround Time**		Sampler
(319) 232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS		**For Lab Use Only:**
(xxx) xxx-xxxx FAX	TAT if different from Below _____		Walk-in Client:
Project Name Black Hawk Co IDNR	☑ 2 weeks		Lab Sampling
Site Black Hawk County Landfill	☐ 1 week		Job / SDG No
P O #	☐ 2 days		
	☐ 1 day		

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Appendix I, TSS	Appendix II, TSS	2,4-D	4,4'-DDD	beta-BHC	delta BHC	Endosulfan I	Endosulfan sulfate	Endrin aldehyde	Silvex	Sulfide	Sample Specific Notes
GUW3-1			G	GW		N		X											
GUX-1			G	GW		N		X											
P-213C			G	GW		N		X											
P-214CR			G	GW		N		X											
P-215CR			G	GW		N		X											
P-216CR	9-25-24	0915	G	GW	5	N		X											Turbidity - 8.54 NTU
P-216CR-FD	9-25-24	0930	G	GW	5	N		X											
P-604C			G	GW		N		X											
P-703C			G	GW		N		X											

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No		Cooler Temp (°C) Obs'd._____ Corr'd._____		Therm ID No ._____
Relinquished by: Ben Porter	Company: AECOM	Date/Time: 9-26-24	Received by:	Company:	Date/Time: 9/26/24 9:00
Relinquished by:	Company:	Date/Time	Received by:	Company:	Date/Time
Relinquished by:	Company:	Date/Time	Received in Laboratory by:	Company:	Date/Time

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-291397-1

Login Number: 291397

List Source: Eurofins Cedar Falls

List Number: 1

Creator: Hirsch, Preston

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Chris Oelkers
AECOM
501 Sycamore Street
Suite #222
Waterloo, Iowa 50703

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JOB DESCRIPTION

Black Hawk County Landfill (IDNR)

JOB NUMBER

310-291544-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



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10/8/2024 12:54:56 PM

Authorized for release by
Zach Bindert, Senior Project Manager
Zach.Bindert@et.eurofinsus.com
(319)595-2016

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Job ID: 310-291544-1 — Eurofins Cedar Falls

Job Narrative
310-291544-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 9/27/2024 9:40 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.9°C.

GC/MS VOA
Method 8260D: The method requirement for no headspace was not met. The following volatile sample was analyzed with headspace in the sample container: Trip Blank (310-291544-3).

Method 8260D: The continuing calibration verification (CCV) associated with batch 310-434685 recovered above the upper control limit for 2-Hexanone (32.2%D), trans-1,3-Dichloropropene (23.1%D), and 4-Methyl-2-pentanone (29.0%D). The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated sample is impacted: (CCV 310-434685/3).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
Method 6020B: The initial calibration verification (ICV) result for batch 310-435490 was above the upper control limit. The affected analytes are: Silver. Sample results were non-detects, and have been reported as qualified data.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Field Service / Mobile Lab
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Sample Summary

Client: AECOM
Job ID: 310-291544-1
Project/Site: Black Hawk County Landfill (IDNR)

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-291544-1	P-214CR	Ground Water	09/26/24 11:30	09/27/24 09:40
310-291544-2	P-215CR	Ground Water	09/26/24 10:00	09/27/24 09:40
310-291544-3	Trip Blank	Ground Water	09/26/24 06:00	09/27/24 09:40

Detection Summary

Client: AECOM
Job ID: 310-291544-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: P-214CR — Lab Sample ID: 310-291544-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	106		2.00	0.660	ug/L	1		6020B	Total/NA
Total Suspended Solids	16.8		1.88	1.39	mg/L	1		I-3765-85	Total/NA
Field Turbidity	31.87				NTU	1		Field Sampling	Total/NA

Client Sample ID: P-215CR — Lab Sample ID: 310-291544-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone (MEK)	2.42	J	10.0	2.10	ug/L	1		8260D	Total/NA
Barium	18.8		2.00	0.660	ug/L	1		6020B	Total/NA
Cobalt	1.05	J	2.50	0.850	ug/L	5		6020B	Total/NA
Total Suspended Solids	6.00		1.88	1.39	mg/L	1		I-3765-85	Total/NA
Field Turbidity	6.14				NTU	1		Field Sampling	Total/NA

Client Sample ID: Trip Blank — Lab Sample ID: 310-291544-3

No Detections.

This Detection Summary does not include radiochemical test results.

Client: AECOM
Job ID: 310-291544-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: P-214CR
Lab Sample ID: 310-291544-1
Date Collected: 09/26/24 11:30
Matrix: Ground Water
Date Received: 09/27/24 09:40

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			09/30/24 13:55	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			09/30/24 13:55	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			09/30/24 13:55	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			09/30/24 13:55	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			09/30/24 13:55	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			09/30/24 13:55	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			09/30/24 13:55	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			09/30/24 13:55	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			09/30/24 13:55	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			09/30/24 13:55	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			09/30/24 13:55	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			09/30/24 13:55	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			09/30/24 13:55	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			09/30/24 13:55	1
2-Hexanone	<2.00		10.0	2.00	ug/L			09/30/24 13:55	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			09/30/24 13:55	1
Acetone	<3.10		10.0	3.10	ug/L			09/30/24 13:55	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			09/30/24 13:55	1
Benzene	<0.220		0.500	0.220	ug/L			09/30/24 13:55	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			09/30/24 13:55	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			09/30/24 13:55	1
Bromoform	<0.780		5.00	0.780	ug/L			09/30/24 13:55	1
Bromomethane	<1.10		4.00	1.10	ug/L			09/30/24 13:55	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			09/30/24 13:55	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			09/30/24 13:55	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			09/30/24 13:55	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			09/30/24 13:55	1
Chloroethane	<0.790		4.00	0.790	ug/L			09/30/24 13:55	1
Chloroform	<1.30		3.00	1.30	ug/L			09/30/24 13:55	1
Chloromethane	<0.610		3.00	0.610	ug/L			09/30/24 13:55	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			09/30/24 13:55	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			09/30/24 13:55	1
Dibromomethane	<0.330		1.00	0.330	ug/L			09/30/24 13:55	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			09/30/24 13:55	1
Iodomethane	<7.00		10.0	7.00	ug/L			09/30/24 13:55	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			09/30/24 13:55	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			09/30/24 13:55	1
o-Xylene	<0.400		1.00	0.400	ug/L			09/30/24 13:55	1
Styrene	<0.370		1.00	0.370	ug/L			09/30/24 13:55	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			09/30/24 13:55	1
Toluene	<0.430		1.00	0.430	ug/L			09/30/24 13:55	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			09/30/24 13:55	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			09/30/24 13:55	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			09/30/24 13:55	1
Trichloroethene	<0.430		1.00	0.430	ug/L			09/30/24 13:55	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			09/30/24 13:55	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			09/30/24 13:55	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			09/30/24 13:55	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			09/30/24 13:55	1

Client: AECOM
Job ID: 310-291544-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: P-214CR
Lab Sample ID: 310-291544-1
Date Collected: 09/26/24 11:30
Matrix: Ground Water
Date Received: 09/27/24 09:40

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*104*		*73 - 130*		*09/30/24 13:55*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*09/30/24 13:55*	*1*
4-Bromofluorobenzene (Surr)	*94*		*80 - 120*		*09/30/24 13:55*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<5.00		10.0	5.00	ug/L		09/30/24 09:30	10/07/24 13:50	5
Arsenic	<2.65		10.0	2.65	ug/L		09/30/24 09:30	10/07/24 13:50	5
Barium	**106**		2.00	0.660	ug/L		09/30/24 09:30	10/04/24 22:15	1
Beryllium	<1.65		5.00	1.65	ug/L		09/30/24 09:30	10/07/24 13:50	5
Cadmium	<0.500		1.00	0.500	ug/L		09/30/24 09:30	10/07/24 13:50	5
Chromium	<6.00		25.0	6.00	ug/L		09/30/24 09:30	10/07/24 13:50	5
Cobalt	<0.850		2.50	0.850	ug/L		09/30/24 09:30	10/07/24 13:50	5
Copper	<9.00		25.0	9.00	ug/L		09/30/24 09:30	10/07/24 13:50	5
Lead	<0.260		0.500	0.260	ug/L		09/30/24 09:30	10/04/24 22:15	1
Nickel	<10.5		25.0	10.5	ug/L		09/30/24 09:30	10/07/24 13:50	5
Selenium	<7.00		25.0	7.00	ug/L		09/30/24 09:30	10/07/24 13:50	5
Silver	<2.50	^1+	5.00	2.50	ug/L		09/30/24 09:30	10/07/24 13:50	5
Thallium	<0.570		1.00	0.570	ug/L		09/30/24 09:30	10/04/24 22:15	1
Vanadium	<5.50		25.0	5.50	ug/L		09/30/24 09:30	10/07/24 13:50	5
Zinc	<48.5		100	48.5	ug/L		09/30/24 09:30	10/07/24 13:50	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**16.8**		1.88	1.39	mg/L			09/27/24 13:00	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**31.87**				NTU			09/26/24 11:30	1

Client: AECOM
Job ID: 310-291544-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: P-215CR
Lab Sample ID: 310-291544-2
Date Collected: 09/26/24 10:00
Matrix: Ground Water
Date Received: 09/27/24 09:40

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			09/30/24 14:17	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			09/30/24 14:17	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			09/30/24 14:17	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			09/30/24 14:17	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			09/30/24 14:17	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			09/30/24 14:17	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			09/30/24 14:17	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			09/30/24 14:17	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			09/30/24 14:17	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			09/30/24 14:17	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			09/30/24 14:17	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			09/30/24 14:17	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			09/30/24 14:17	1
2-Butanone (MEK)	**2.42**	**J**	10.0	2.10	ug/L			09/30/24 14:17	1
2-Hexanone	<2.00		10.0	2.00	ug/L			09/30/24 14:17	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			09/30/24 14:17	1
Acetone	<3.10		10.0	3.10	ug/L			09/30/24 14:17	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			09/30/24 14:17	1
Benzene	<0.220		0.500	0.220	ug/L			09/30/24 14:17	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			09/30/24 14:17	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			09/30/24 14:17	1
Bromoform	<0.780		5.00	0.780	ug/L			09/30/24 14:17	1
Bromomethane	<1.10		4.00	1.10	ug/L			09/30/24 14:17	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			09/30/24 14:17	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			09/30/24 14:17	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			09/30/24 14:17	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			09/30/24 14:17	1
Chloroethane	<0.790		4.00	0.790	ug/L			09/30/24 14:17	1
Chloroform	<1.30		3.00	1.30	ug/L			09/30/24 14:17	1
Chloromethane	<0.610		3.00	0.610	ug/L			09/30/24 14:17	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			09/30/24 14:17	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			09/30/24 14:17	1
Dibromomethane	<0.330		1.00	0.330	ug/L			09/30/24 14:17	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			09/30/24 14:17	1
Iodomethane	<7.00		10.0	7.00	ug/L			09/30/24 14:17	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			09/30/24 14:17	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			09/30/24 14:17	1
o-Xylene	<0.400		1.00	0.400	ug/L			09/30/24 14:17	1
Styrene	<0.370		1.00	0.370	ug/L			09/30/24 14:17	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			09/30/24 14:17	1
Toluene	<0.430		1.00	0.430	ug/L			09/30/24 14:17	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			09/30/24 14:17	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			09/30/24 14:17	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			09/30/24 14:17	1
Trichloroethene	<0.430		1.00	0.430	ug/L			09/30/24 14:17	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			09/30/24 14:17	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			09/30/24 14:17	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			09/30/24 14:17	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			09/30/24 14:17	1

Client: AECOM
Job ID: 310-291544-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: P-215CR
Lab Sample ID: 310-291544-2

Date Collected: 09/26/24 10:00
Matrix: Ground Water

Date Received: 09/27/24 09:40

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*104*		*73 - 130*		*09/30/24 14:17*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*09/30/24 14:17*	*1*
4-Bromofluorobenzene (Surr)	*94*		*80 - 120*		*09/30/24 14:17*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<5.00		10.0	5.00	ug/L		09/30/24 09:30	10/07/24 13:52	5
Arsenic	<2.65		10.0	2.65	ug/L		09/30/24 09:30	10/07/24 13:52	5
Barium	**18.8**		2.00	0.660	ug/L		09/30/24 09:30	10/04/24 22:19	1
Beryllium	<1.65		5.00	1.65	ug/L		09/30/24 09:30	10/07/24 13:52	5
Cadmium	<0.500		1.00	0.500	ug/L		09/30/24 09:30	10/07/24 13:52	5
Chromium	<6.00		25.0	6.00	ug/L		09/30/24 09:30	10/07/24 13:52	5
Cobalt	**1.05**	**J**	2.50	0.850	ug/L		09/30/24 09:30	10/07/24 13:52	5
Copper	<9.00		25.0	9.00	ug/L		09/30/24 09:30	10/07/24 13:52	5
Lead	<0.260		0.500	0.260	ug/L		09/30/24 09:30	10/04/24 22:19	1
Nickel	<10.5		25.0	10.5	ug/L		09/30/24 09:30	10/07/24 13:52	5
Selenium	<7.00		25.0	7.00	ug/L		09/30/24 09:30	10/07/24 13:52	5
Silver	<2.50	^1+	5.00	2.50	ug/L		09/30/24 09:30	10/07/24 13:52	5
Thallium	<0.570		1.00	0.570	ug/L		09/30/24 09:30	10/04/24 22:19	1
Vanadium	<5.50		25.0	5.50	ug/L		09/30/24 09:30	10/07/24 13:52	5
Zinc	<48.5		100	48.5	ug/L		09/30/24 09:30	10/07/24 13:52	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**6.00**		1.88	1.39	mg/L			09/27/24 13:00	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**6.14**				NTU			09/26/24 10:00	1

Client: AECOM
Job ID: 310-291544-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Trip Blank
Lab Sample ID: 310-291544-3
Date Collected: 09/26/24 06:00
Matrix: Ground Water
Date Received: 09/27/24 09:40

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			09/30/24 11:44	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			09/30/24 11:44	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			09/30/24 11:44	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			09/30/24 11:44	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			09/30/24 11:44	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			09/30/24 11:44	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			09/30/24 11:44	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			09/30/24 11:44	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			09/30/24 11:44	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			09/30/24 11:44	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			09/30/24 11:44	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			09/30/24 11:44	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			09/30/24 11:44	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			09/30/24 11:44	1
2-Hexanone	<2.00		10.0	2.00	ug/L			09/30/24 11:44	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			09/30/24 11:44	1
Acetone	<3.10		10.0	3.10	ug/L			09/30/24 11:44	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			09/30/24 11:44	1
Benzene	<0.220		0.500	0.220	ug/L			09/30/24 11:44	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			09/30/24 11:44	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			09/30/24 11:44	1
Bromoform	<0.780		5.00	0.780	ug/L			09/30/24 11:44	1
Bromomethane	<1.10		4.00	1.10	ug/L			09/30/24 11:44	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			09/30/24 11:44	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			09/30/24 11:44	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			09/30/24 11:44	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			09/30/24 11:44	1
Chloroethane	<0.790		4.00	0.790	ug/L			09/30/24 11:44	1
Chloroform	<1.30		3.00	1.30	ug/L			09/30/24 11:44	1
Chloromethane	<0.610		3.00	0.610	ug/L			09/30/24 11:44	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			09/30/24 11:44	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			09/30/24 11:44	1
Dibromomethane	<0.330		1.00	0.330	ug/L			09/30/24 11:44	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			09/30/24 11:44	1
Iodomethane	<7.00		10.0	7.00	ug/L			09/30/24 11:44	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			09/30/24 11:44	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			09/30/24 11:44	1
o-Xylene	<0.400		1.00	0.400	ug/L			09/30/24 11:44	1
Styrene	<0.370		1.00	0.370	ug/L			09/30/24 11:44	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			09/30/24 11:44	1
Toluene	<0.430		1.00	0.430	ug/L			09/30/24 11:44	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			09/30/24 11:44	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			09/30/24 11:44	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			09/30/24 11:44	1
Trichloroethene	<0.430		1.00	0.430	ug/L			09/30/24 11:44	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			09/30/24 11:44	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			09/30/24 11:44	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			09/30/24 11:44	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			09/30/24 11:44	1

Client: AECOM
Job ID: 310-291544-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Trip Blank
Lab Sample ID: 310-291544-3
Date Collected: 09/26/24 06:00
Matrix: Ground Water
Date Received: 09/27/24 09:40

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	112		73 - 130		09/30/24 11:44	1
Toluene-d8 (Surr)	96		80 - 120		09/30/24 11:44	1
4-Bromofluorobenzene (Surr)	91		80 - 120		09/30/24 11:44	1

Definitions/Glossary

Client: AECOM
Job ID: 310-291544-1
Project/Site: Black Hawk County Landfill (IDNR)

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
^1+	Initial Calibration Verification (ICV) is outside acceptance limits, high biased.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Surrogate Summary

Client: AECOM
Job ID: 310-291544-1
Project/Site: Black Hawk County Landfill (IDNR)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Ground Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-291544-1	P-214CR	104	96	94
310-291544-2	P-215CR	104	97	94
310-291544-3	Trip Blank	112	96	91

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
LCS 310-434685/6	Lab Control Sample	88	103	98
LCS 310-434685/7	Lab Control Sample	111	96	91
MB 310-434685/5	Method Blank	106	96	91

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 310-434685/5
Matrix: Water
Analysis Batch: 434685

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			09/30/24 10:17	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			09/30/24 10:17	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			09/30/24 10:17	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			09/30/24 10:17	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			09/30/24 10:17	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			09/30/24 10:17	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			09/30/24 10:17	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			09/30/24 10:17	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			09/30/24 10:17	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			09/30/24 10:17	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			09/30/24 10:17	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			09/30/24 10:17	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			09/30/24 10:17	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			09/30/24 10:17	1
2-Hexanone	<2.00		10.0	2.00	ug/L			09/30/24 10:17	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			09/30/24 10:17	1
Acetone	<3.10		10.0	3.10	ug/L			09/30/24 10:17	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			09/30/24 10:17	1
Benzene	<0.220		0.500	0.220	ug/L			09/30/24 10:17	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			09/30/24 10:17	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			09/30/24 10:17	1
Bromoform	<0.780		5.00	0.780	ug/L			09/30/24 10:17	1
Bromomethane	<1.10		4.00	1.10	ug/L			09/30/24 10:17	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			09/30/24 10:17	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			09/30/24 10:17	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			09/30/24 10:17	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			09/30/24 10:17	1
Chloroethane	<0.790		4.00	0.790	ug/L			09/30/24 10:17	1
Chloroform	<1.30		3.00	1.30	ug/L			09/30/24 10:17	1
Chloromethane	<0.610		3.00	0.610	ug/L			09/30/24 10:17	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			09/30/24 10:17	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			09/30/24 10:17	1
Dibromomethane	<0.330		1.00	0.330	ug/L			09/30/24 10:17	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			09/30/24 10:17	1
Iodomethane	<7.00		10.0	7.00	ug/L			09/30/24 10:17	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			09/30/24 10:17	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			09/30/24 10:17	1
o-Xylene	<0.400		1.00	0.400	ug/L			09/30/24 10:17	1
Styrene	<0.370		1.00	0.370	ug/L			09/30/24 10:17	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			09/30/24 10:17	1
Toluene	<0.430		1.00	0.430	ug/L			09/30/24 10:17	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			09/30/24 10:17	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			09/30/24 10:17	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			09/30/24 10:17	1
Trichloroethene	<0.430		1.00	0.430	ug/L			09/30/24 10:17	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			09/30/24 10:17	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			09/30/24 10:17	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			09/30/24 10:17	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-434685/5
Matrix: Water
Analysis Batch: 434685

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	<0.400		3.00	0.400	ug/L			09/30/24 10:17	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*106*		*73 - 130*		*09/30/24 10:17*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*09/30/24 10:17*	*1*
4-Bromofluorobenzene (Surr)	*91*		*80 - 120*		*09/30/24 10:17*	*1*

Lab Sample ID: LCS 310-434685/6
Matrix: Water
Analysis Batch: 434685

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	20.0	18.01		ug/L		90	71 - 120
1,1,1-Trichloroethane	20.0	17.90		ug/L		89	73 - 129
1,1,2,2-Tetrachloroethane	20.0	21.74		ug/L		109	68 - 124
1,1,2-Trichloroethane	20.0	18.85		ug/L		94	73 - 123
1,1-Dichloroethane	20.0	21.33		ug/L		107	70 - 127
1,1-Dichloroethene	20.0	19.95		ug/L		100	63 - 132
1,2,3-Trichloropropane	20.0	19.11		ug/L		96	65 - 127
1,2-Dibromo-3-Chloropropane	20.0	21.04		ug/L		105	50 - 150
1,2-Dibromoethane (EDB)	20.0	18.61		ug/L		93	75 - 125
1,2-Dichlorobenzene	20.0	18.03		ug/L		90	74 - 120
1,2-Dichloroethane	20.0	17.52		ug/L		88	71 - 125
1,2-Dichloropropane	20.0	20.37		ug/L		102	73 - 124
1,4-Dichlorobenzene	20.0	17.83		ug/L		89	72 - 120
2-Butanone (MEK)	40.0	39.87		ug/L		100	50 - 150
2-Hexanone	40.0	46.77		ug/L		117	60 - 140
4-Methyl-2-pentanone (MIBK)	40.0	42.36		ug/L		106	60 - 139
Acetone	40.0	46.64		ug/L		117	50 - 150
Acrylonitrile	200	214.0		ug/L		107	50 - 150
Benzene	20.0	19.52		ug/L		98	72 - 124
Bromochloromethane	20.0	17.99		ug/L		90	73 - 130
Bromodichloromethane	20.0	17.46		ug/L		87	74 - 122
Bromoform	20.0	17.90		ug/L		90	61 - 122
Carbon disulfide	20.0	20.67		ug/L		103	59 - 135
Carbon tetrachloride	20.0	17.40		ug/L		87	67 - 132
Chlorobenzene	20.0	18.37		ug/L		92	76 - 120
Chlorodibromomethane	20.0	17.18		ug/L		86	71 - 121
Chloroform	20.0	19.55		ug/L		98	72 - 125
cis-1,2-Dichloroethene	20.0	18.43		ug/L		92	74 - 123
cis-1,3-Dichloropropene	20.0	19.79		ug/L		99	71 - 125
Dibromomethane	20.0	17.94		ug/L		90	74 - 125
Ethylbenzene	20.0	19.88		ug/L		99	74 - 122
Iodomethane	20.0	14.19		ug/L		71	10 - 150
Methylene Chloride	20.0	20.79		ug/L		104	50 - 150
Styrene	20.0	19.30		ug/L		97	74 - 121
Tetrachloroethene	20.0	17.27		ug/L		86	71 - 130
Toluene	20.0	19.35		ug/L		97	74 - 123

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-434685/6
Matrix: Water
Analysis Batch: 434685

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
trans-1,2-Dichloroethene	20.0	18.73		ug/L		94	70 - 126
trans-1,3-Dichloropropene	20.0	21.47		ug/L		107	69 - 123
trans-1,4-Dichloro-2-butene	20.0	22.99		ug/L		115	50 - 150
Trichloroethene	20.0	18.44		ug/L		92	72 - 126
Vinyl acetate	40.0	40.71		ug/L		102	50 - 150
Xylenes, Total	40.0	36.83		ug/L		92	73 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*88*		*73 - 130*
Toluene-d8 (Surr)	*103*		*80 - 120*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*

Lab Sample ID: LCS 310-434685/7
Matrix: Water
Analysis Batch: 434685

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	19.37		ug/L		97	23 - 150
Chloroethane	20.0	21.43		ug/L		107	54 - 136
Chloromethane	20.0	26.51		ug/L		133	38 - 150
Trichlorofluoromethane	20.0	18.38		ug/L		92	54 - 149
Vinyl chloride	20.0	22.31		ug/L		112	56 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*111*		*73 - 130*
Toluene-d8 (Surr)	*96*		*80 - 120*
4-Bromofluorobenzene (Surr)	*91*		*80 - 120*

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-434580/1-A
Matrix: Water
Analysis Batch: 435361

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 434580

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.530		2.00	0.530	ug/L		09/30/24 09:30	10/04/24 20:23	1
Barium	<0.660		2.00	0.660	ug/L		09/30/24 09:30	10/04/24 20:23	1
Beryllium	<0.330		1.00	0.330	ug/L		09/30/24 09:30	10/04/24 20:23	1
Cadmium	<0.100		0.200	0.100	ug/L		09/30/24 09:30	10/04/24 20:23	1
Chromium	<1.20		5.00	1.20	ug/L		09/30/24 09:30	10/04/24 20:23	1
Cobalt	<0.170		0.500	0.170	ug/L		09/30/24 09:30	10/04/24 20:23	1
Copper	<1.80		5.00	1.80	ug/L		09/30/24 09:30	10/04/24 20:23	1
Lead	<0.260		0.500	0.260	ug/L		09/30/24 09:30	10/04/24 20:23	1
Nickel	<2.10		5.00	2.10	ug/L		09/30/24 09:30	10/04/24 20:23	1
Selenium	<1.40		5.00	1.40	ug/L		09/30/24 09:30	10/04/24 20:23	1
Silver	<0.500		1.00	0.500	ug/L		09/30/24 09:30	10/04/24 20:23	1
Thallium	<0.570		1.00	0.570	ug/L		09/30/24 09:30	10/04/24 20:23	1
Vanadium	<1.10		5.00	1.10	ug/L		09/30/24 09:30	10/04/24 20:23	1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 310-434580/1-A
Matrix: Water
Analysis Batch: 435361

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 434580

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	<9.70		20.0	9.70	ug/L		09/30/24 09:30	10/04/24 20:23	1

Lab Sample ID: MB 310-434580/1-A
Matrix: Water
Analysis Batch: 435490

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 434580

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		09/30/24 09:30	10/07/24 13:11	1
Silver	<0.500	^1+	1.00	0.500	ug/L		09/30/24 09:30	10/07/24 13:11	1

Lab Sample ID: LCS 310-434580/2-A
Matrix: Water
Analysis Batch: 435361

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 434580

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	200	213.0		ug/L		107	80 - 120
Barium	100	98.94		ug/L		99	80 - 120
Beryllium	100	91.56		ug/L		92	80 - 120
Cadmium	100	95.42		ug/L		95	80 - 120
Chromium	100	96.08		ug/L		96	80 - 120
Cobalt	100	96.48		ug/L		96	80 - 120
Copper	200	191.6		ug/L		96	80 - 120
Lead	200	205.7		ug/L		103	80 - 120
Nickel	200	203.8		ug/L		102	80 - 120
Selenium	400	363.8		ug/L		91	80 - 120
Silver	100	98.05		ug/L		98	80 - 120
Thallium	100	85.10		ug/L		85	80 - 120
Vanadium	100	92.04		ug/L		92	80 - 120
Zinc	200	184.9		ug/L		92	80 - 120

Lab Sample ID: LCS 310-434580/2-A
Matrix: Water
Analysis Batch: 435490

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 434580

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	200	230.9		ug/L		115	80 - 120
Silver	100	112.2	^1+	ug/L		112	80 - 120

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: MB 310-434563/1
Matrix: Water
Analysis Batch: 434563

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<3.70		5.00	3.70	mg/L			09/27/24 13:00	1

Client: AECOM
Job ID: 310-291544-1
Project/Site: Black Hawk County Landfill (IDNR)

Method: I-3765-85 - Residue, Non-filterable (TSS) (Continued)

Lab Sample ID: LCS 310-434563/2
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 434563

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Suspended Solids			100	97.00		mg/L		97	81 - 116		

QC Association Summary

Client: AECOM
Job ID: 310-291544-1
Project/Site: Black Hawk County Landfill (IDNR)

GC/MS VOA

Analysis Batch: 434685

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-291544-1	P-214CR	Total/NA	Ground Water	8260D	
310-291544-2	P-215CR	Total/NA	Ground Water	8260D	
310-291544-3	Trip Blank	Total/NA	Ground Water	8260D	
MB 310-434685/5	Method Blank	Total/NA	Water	8260D	
LCS 310-434685/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-434685/7	Lab Control Sample	Total/NA	Water	8260D	

Metals

Prep Batch: 434580

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-291544-1	P-214CR	Total/NA	Ground Water	3005A	
310-291544-2	P-215CR	Total/NA	Ground Water	3005A	
MB 310-434580/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-434580/2-A	Lab Control Sample	Total/NA	Water	3005A	

Analysis Batch: 435361

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-291544-1	P-214CR	Total/NA	Ground Water	6020B	434580
310-291544-2	P-215CR	Total/NA	Ground Water	6020B	434580
MB 310-434580/1-A	Method Blank	Total/NA	Water	6020B	434580
LCS 310-434580/2-A	Lab Control Sample	Total/NA	Water	6020B	434580

Analysis Batch: 435490

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-291544-1	P-214CR	Total/NA	Ground Water	6020B	434580
310-291544-2	P-215CR	Total/NA	Ground Water	6020B	434580
MB 310-434580/1-A	Method Blank	Total/NA	Water	6020B	434580
LCS 310-434580/2-A	Lab Control Sample	Total/NA	Water	6020B	434580

General Chemistry

Analysis Batch: 434563

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-291544-1	P-214CR	Total/NA	Ground Water	I-3765-85	
310-291544-2	P-215CR	Total/NA	Ground Water	I-3765-85	
MB 310-434563/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-434563/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Field Service / Mobile Lab

Analysis Batch: 434705

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-291544-1	P-214CR	Total/NA	Ground Water	Field Sampling	
310-291544-2	P-215CR	Total/NA	Ground Water	Field Sampling	

Lab Chronicle

Client: AECOM
Job ID: 310-291544-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: P-214CR
Lab Sample ID: 310-291544-1
Date Collected: 09/26/24 11:30
Matrix: Ground Water
Date Received: 09/27/24 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	434685	WSE8	EET CF	09/30/24 13:55
Total/NA	Prep	3005A			434580	F5MW	EET CF	09/30/24 09:30
Total/NA	Analysis	6020B		1	435361	NFT2	EET CF	10/04/24 22:15
Total/NA	Prep	3005A			434580	F5MW	EET CF	09/30/24 09:30
Total/NA	Analysis	6020B		5	435490	NFT2	EET CF	10/07/24 13:50
Total/NA	Analysis	I-3765-85		1	434563	DGU1	EET CF	09/27/24 13:00
Total/NA	Analysis	Field Sampling		1	434705	BJ0R	EET CF	09/26/24 11:30

Client Sample ID: P-215CR
Lab Sample ID: 310-291544-2
Date Collected: 09/26/24 10:00
Matrix: Ground Water
Date Received: 09/27/24 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	434685	WSE8	EET CF	09/30/24 14:17
Total/NA	Prep	3005A			434580	F5MW	EET CF	09/30/24 09:30
Total/NA	Analysis	6020B		1	435361	NFT2	EET CF	10/04/24 22:19
Total/NA	Prep	3005A			434580	F5MW	EET CF	09/30/24 09:30
Total/NA	Analysis	6020B		5	435490	NFT2	EET CF	10/07/24 13:52
Total/NA	Analysis	I-3765-85		1	434563	DGU1	EET CF	09/27/24 13:00
Total/NA	Analysis	Field Sampling		1	434705	BJ0R	EET CF	09/26/24 10:00

Client Sample ID: Trip Blank
Lab Sample ID: 310-291544-3
Date Collected: 09/26/24 06:00
Matrix: Ground Water
Date Received: 09/27/24 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	434685	WSE8	EET CF	09/30/24 11:44

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Accreditation/Certification Summary

Client: AECOM
Job ID: 310-291544-1
Project/Site: Black Hawk County Landfill (IDNR)

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8260D		Ground Water	m,p-Xylene
8260D		Ground Water	o-Xylene
Field Sampling		Ground Water	Field Turbidity

Method Summary

Client: AECOM
Job ID: 310-291544-1
Project/Site: Black Hawk County Landfill (IDNR)

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
Field Sampling	Field Sampling	EPA	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
5030B	Purge and Trap	SW846	EET CF

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

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310-291544 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: Aecom

City/State: CITY Waterloo STATE IA Project:

Receipt Information

Date/Time Received: DATE 9/27/24 TIME 0940 Received By: TD

Delivery Type. ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☐ Lab Courier ☐ Lab Field Services ☒ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler?	☒ Yes	☐ No	*If yes:* Cooler ID:
Multiple Coolers?	☐ Yes	☒ No	*If yes:* Cooler # _____ of _____
Cooler Custody Seals Present?	☐ Yes	☒ No	*If yes:* Cooler custody seals intact? ☐ Yes ☐ No
Sample Custody Seals Present?	☐ Yes	☒ No	*If yes:* Sample custody seals intact? ☐ Yes ☐ No
Trip Blank Present?	☐ Yes	☒ No	*If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other _____ ☐ NONE

Thermometer ID: P Correction Factor (°C): +0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C). Corrected Temp (°C):

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:	PLLTN	
Uncorrected Temp (°C):	3.9	
Corrected Temp (°C):	3.9	

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE If yes, contact PM before proceeding If no, proceed with login

Additional Comments

Eurofins Cedar Falls
3019 Venture Way

Cedar Falls, IA 50613
phone 319 277.2401 fax 319.277 2425

Chain of Custody Record

eurofins Environment Testing America

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other IDNR

Eurofins Environment Testing America

Client Contact	**Project Manager: Chris Oelkers**	COC No
AECOM	Email Christopher Oelkers@aecom com	**Site Contact:** / **Date: 9-27-24** / ___ of ___ COCs
501 Sycamore Street, Suite 222	**Tel/Fax:319-296-6878**	**Lab Contact:** / **Carrier:** / TALS Project #
Waterloo, IA 50703	**Analysis Turnaround Time** ☑ CALENDAR DAYS ☐ WORKING DAYS	Sampler
(319) 232-6531 Phone	TAT if different from Below ___ ☑ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day	**For Lab Use Only:** Walk-in Client: / Lab Sampling
(xxx) xxx-xxxx FAX		
Project Name Black Hawk Co IDNR		Job / SDG No
Site Black Hawk County Landfill		
P O #		

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Appendix I, TSS	Appendix II, TSS	2,4-D	4,4'-DDD	beta-BHC	delta BHC	Endosulfan I	Endosulfan sulfate	Endrin aldehyde	Silvex	Sulfide	Sample Specific Notes
GUW3-1			G	GW		N		X											
GUX-1			G	GW		N		X											
P-213C			G	GW		N		X											
P-214CR	9-26-24	1130	G	GW	5	N		X											Turbidity – 31.87 NTU
P-215CR	9-26-24	1000	G	GW	5	N		X											Turbidity – 6.14 NTU
P-216CR			G	GW		N		X											
P-216CR-FD			G	GW		N		X											
P-604C			G	GW		N		X											
P-703C			G	GW		N		X											
Trip Blank	9-26-24	0600	G	W	3	N		X											

Preservation Used: 1= Ice, 2= HCl; 3= H_2SO_4; 4=HNO_3; 5=NaOH; 6= Other ___

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for ___ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No | Cooler Temp (°C) Obs'd. ___ Corr'd. ___ | Therm ID No. ___

Relinquished by: Ben Poser	Company: Accom	Date/Time: 9-27-24	Received by:	Company:	Date/Time: 9-27-24 0940
Relinquished by:	Company:	Date/Time	Received by:	Company:	Date/Time
Relinquished by:	Company:	Date/Time	Received in Laboratory by:	Company:	Date/Time

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-291544-1

Login Number: 291544

List Source: Eurofins Cedar Falls

List Number: 1

Creator: Homolar, Dana J

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

ANALYTICAL REPORT

PREPARED FOR

Attn: Chris Oelkers
AECOM
501 Sycamore Street
Suite #222
Waterloo, Iowa 50703

Generated 10/13/2024 8:59:28 PM

JOB DESCRIPTION

Black Hawk County Landfill (IDNR)
Fall 2024

JOB NUMBER

310-291802-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

my EOL

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



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Authorized for release by
Zach Bindert, Senior Project Manager
Zach.Bindert@et.eurofinsus.com
(319)595-2016

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Job ID: 310-291802-1 — Eurofins Cedar Falls

Job Narrative
310-291802-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 10/2/2024 9:00 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.7°C.

GC/MS VOA
Method 8260D: The continuing calibration verification (CCV) associated with batch 310-435093 recovered above the upper control limit for 2-Hexanone (50.7%D), trans-1,3-Dichloropropene (24.6%D), 4-Methyl-2-pentanone (44.0%D). The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated sample is impacted: (CCV 310-435093/3).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
Method 6020B: The initial calibration verification (ICV) result for batch 310-435360 was above the upper control limit. The affected analytes are: Silver. Sample results were non-detects, and have been reported as qualified data.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Field Service / Mobile Lab
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Sample Summary

Client: AECOM
Job ID: 310-291802-1
Project/Site: Black Hawk County Landfill (IDNR)

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-291802-1	OW-101B	Water	10/01/24 09:30	10/02/24 09:00
310-291802-2	OW-105B	Water	10/01/24 10:30	10/02/24 09:00
310-291802-3	OW-113B	Water	10/01/24 13:00	10/02/24 09:00
310-291802-4	Trip Blank	Water	10/01/24 00:00	10/02/24 09:00

Detection Summary

Client: AECOM
Job ID: 310-291802-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-101B — Lab Sample ID: 310-291802-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	193		2.00	0.660	ug/L	1		6020B	Total/NA
Chromium	2.51	J	5.00	1.20	ug/L	1		6020B	Total/NA
Cobalt	0.334	J	0.500	0.170	ug/L	1		6020B	Total/NA
Nickel	4.96	J	5.00	2.10	ug/L	1		6020B	Total/NA
Total Suspended Solids	3.38		1.88	1.39	mg/L	1		I-3765-85	Total/NA
Field Turbidity	5.83				NTU	1		Field Sampling	Total/NA

Client Sample ID: OW-105B — Lab Sample ID: 310-291802-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	89.0		2.00	0.660	ug/L	1		6020B	Total/NA
Chromium	2.10	J	5.00	1.20	ug/L	1		6020B	Total/NA
Nickel	3.61	J	5.00	2.10	ug/L	1		6020B	Total/NA
Field Turbidity	5.38				NTU	1		Field Sampling	Total/NA

Client Sample ID: OW-113B — Lab Sample ID: 310-291802-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	1.52	J	2.00	0.530	ug/L	1		6020B	Total/NA
Barium	15.8		2.00	0.660	ug/L	1		6020B	Total/NA
Chromium	1.27	J	5.00	1.20	ug/L	1		6020B	Total/NA
Cobalt	12.6		0.500	0.170	ug/L	1		6020B	Total/NA
Nickel	15.9		5.00	2.10	ug/L	1		6020B	Total/NA
Total Suspended Solids	11.3		5.00	3.70	mg/L	1		I-3765-85	Total/NA
Field Turbidity	29.25				NTU	1		Field Sampling	Total/NA

Client Sample ID: Trip Blank — Lab Sample ID: 310-291802-4

No Detections.

This Detection Summary does not include radiochemical test results.

Client: AECOM
Job ID: 310-291802-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-101B
Lab Sample ID: 310-291802-1
Date Collected: 10/01/24 09:30
Matrix: Water
Date Received: 10/02/24 09:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			10/03/24 14:39	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			10/03/24 14:39	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			10/03/24 14:39	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			10/03/24 14:39	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			10/03/24 14:39	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			10/03/24 14:39	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			10/03/24 14:39	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			10/03/24 14:39	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			10/03/24 14:39	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			10/03/24 14:39	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			10/03/24 14:39	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			10/03/24 14:39	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			10/03/24 14:39	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			10/03/24 14:39	1
2-Hexanone	<2.00		10.0	2.00	ug/L			10/03/24 14:39	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			10/03/24 14:39	1
Acetone	<3.10		10.0	3.10	ug/L			10/10/24 15:01	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			10/03/24 14:39	1
Benzene	<0.220		0.500	0.220	ug/L			10/03/24 14:39	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			10/03/24 14:39	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			10/03/24 14:39	1
Bromoform	<0.780		5.00	0.780	ug/L			10/03/24 14:39	1
Bromomethane	<1.10		4.00	1.10	ug/L			10/03/24 14:39	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			10/03/24 14:39	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			10/03/24 14:39	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			10/03/24 14:39	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			10/03/24 14:39	1
Chloroethane	<0.790		4.00	0.790	ug/L			10/03/24 14:39	1
Chloroform	<1.30		3.00	1.30	ug/L			10/03/24 14:39	1
Chloromethane	<0.610		3.00	0.610	ug/L			10/03/24 14:39	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			10/03/24 14:39	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			10/03/24 14:39	1
Dibromomethane	<0.330		1.00	0.330	ug/L			10/03/24 14:39	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			10/03/24 14:39	1
Iodomethane	<7.00		10.0	7.00	ug/L			10/03/24 14:39	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			10/03/24 14:39	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			10/03/24 14:39	1
o-Xylene	<0.400		1.00	0.400	ug/L			10/03/24 14:39	1
Styrene	<0.370		1.00	0.370	ug/L			10/03/24 14:39	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			10/03/24 14:39	1
Toluene	<0.430		1.00	0.430	ug/L			10/03/24 14:39	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			10/03/24 14:39	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			10/03/24 14:39	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			10/03/24 14:39	1
Trichloroethene	<0.430		1.00	0.430	ug/L			10/03/24 14:39	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			10/03/24 14:39	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			10/03/24 14:39	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			10/03/24 14:39	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			10/03/24 14:39	1

Client: AECOM
Job ID: 310-291802-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-101B
Lab Sample ID: 310-291802-1
Date Collected: 10/01/24 09:30
Matrix: Water
Date Received: 10/02/24 09:00

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*103*		*73 - 130*		*10/03/24 14:39*	*1*
Dibromofluoromethane (Surr)	*101*		*73 - 130*		*10/10/24 15:01*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*10/03/24 14:39*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*10/10/24 15:01*	*1*
4-Bromofluorobenzene (Surr)	*90*		*80 - 120*		*10/03/24 14:39*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*10/10/24 15:01*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		10/03/24 09:30	10/04/24 22:15	1
Arsenic	<0.530		2.00	0.530	ug/L		10/03/24 09:30	10/04/24 22:15	1
Barium	**193**		2.00	0.660	ug/L		10/03/24 09:30	10/04/24 22:15	1
Beryllium	<0.330		1.00	0.330	ug/L		10/03/24 09:30	10/04/24 22:15	1
Cadmium	<0.100		0.200	0.100	ug/L		10/03/24 09:30	10/04/24 22:15	1
Chromium	**2.51**	**J**	5.00	1.20	ug/L		10/03/24 09:30	10/04/24 22:15	1
Cobalt	**0.334**	**J**	0.500	0.170	ug/L		10/03/24 09:30	10/04/24 22:15	1
Copper	<1.80		5.00	1.80	ug/L		10/03/24 09:30	10/04/24 22:15	1
Lead	<0.260		0.500	0.260	ug/L		10/03/24 09:30	10/04/24 22:15	1
Nickel	**4.96**	**J**	5.00	2.10	ug/L		10/03/24 09:30	10/04/24 22:15	1
Selenium	<1.40		5.00	1.40	ug/L		10/03/24 09:30	10/04/24 22:15	1
Silver	<0.500	^1+	1.00	0.500	ug/L		10/03/24 09:30	10/04/24 22:15	1
Thallium	<0.570		1.00	0.570	ug/L		10/03/24 09:30	10/04/24 22:15	1
Vanadium	<1.10		5.00	1.10	ug/L		10/03/24 09:30	10/04/24 22:15	1
Zinc	<9.70		20.0	9.70	ug/L		10/03/24 09:30	10/04/24 22:15	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**3.38**		1.88	1.39	mg/L			10/02/24 16:58	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**5.83**				NTU			10/01/24 09:30	1

Client: AECOM
Job ID: 310-291802-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-105B
Lab Sample ID: 310-291802-2
Date Collected: 10/01/24 10:30
Matrix: Water
Date Received: 10/02/24 09:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			10/03/24 15:01	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			10/03/24 15:01	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			10/03/24 15:01	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			10/03/24 15:01	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			10/03/24 15:01	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			10/03/24 15:01	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			10/03/24 15:01	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			10/03/24 15:01	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			10/03/24 15:01	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			10/03/24 15:01	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			10/03/24 15:01	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			10/03/24 15:01	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			10/03/24 15:01	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			10/03/24 15:01	1
2-Hexanone	<2.00		10.0	2.00	ug/L			10/03/24 15:01	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			10/03/24 15:01	1
Acetone	<3.10		10.0	3.10	ug/L			10/03/24 15:01	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			10/03/24 15:01	1
Benzene	<0.220		0.500	0.220	ug/L			10/03/24 15:01	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			10/03/24 15:01	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			10/03/24 15:01	1
Bromoform	<0.780		5.00	0.780	ug/L			10/03/24 15:01	1
Bromomethane	<1.10		4.00	1.10	ug/L			10/03/24 15:01	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			10/03/24 15:01	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			10/03/24 15:01	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			10/03/24 15:01	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			10/03/24 15:01	1
Chloroethane	<0.790		4.00	0.790	ug/L			10/03/24 15:01	1
Chloroform	<1.30		3.00	1.30	ug/L			10/03/24 15:01	1
Chloromethane	<0.610		3.00	0.610	ug/L			10/03/24 15:01	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			10/03/24 15:01	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			10/03/24 15:01	1
Dibromomethane	<0.330		1.00	0.330	ug/L			10/03/24 15:01	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			10/03/24 15:01	1
Iodomethane	<7.00		10.0	7.00	ug/L			10/03/24 15:01	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			10/03/24 15:01	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			10/03/24 15:01	1
o-Xylene	<0.400		1.00	0.400	ug/L			10/03/24 15:01	1
Styrene	<0.370		1.00	0.370	ug/L			10/03/24 15:01	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			10/03/24 15:01	1
Toluene	<0.430		1.00	0.430	ug/L			10/03/24 15:01	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			10/03/24 15:01	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			10/03/24 15:01	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			10/03/24 15:01	1
Trichloroethene	<0.430		1.00	0.430	ug/L			10/03/24 15:01	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			10/03/24 15:01	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			10/03/24 15:01	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			10/03/24 15:01	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			10/03/24 15:01	1

Client: AECOM
Job ID: 310-291802-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-105B
Lab Sample ID: 310-291802-2

Date Collected: 10/01/24 10:30
Matrix: Water

Date Received: 10/02/24 09:00

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*110*		*73 - 130*		*10/03/24 15:01*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*10/03/24 15:01*	*1*
4-Bromofluorobenzene (Surr)	*92*		*80 - 120*		*10/03/24 15:01*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		10/03/24 09:30	10/04/24 22:17	1
Arsenic	<0.530		2.00	0.530	ug/L		10/03/24 09:30	10/04/24 22:17	1
Barium	**89.0**		2.00	0.660	ug/L		10/03/24 09:30	10/04/24 22:17	1
Beryllium	<0.330		1.00	0.330	ug/L		10/03/24 09:30	10/04/24 22:17	1
Cadmium	<0.100		0.200	0.100	ug/L		10/03/24 09:30	10/04/24 22:17	1
Chromium	**2.10**	**J**	5.00	1.20	ug/L		10/03/24 09:30	10/04/24 22:17	1
Cobalt	<0.170		0.500	0.170	ug/L		10/03/24 09:30	10/04/24 22:17	1
Copper	<1.80		5.00	1.80	ug/L		10/03/24 09:30	10/04/24 22:17	1
Lead	<0.260		0.500	0.260	ug/L		10/03/24 09:30	10/04/24 22:17	1
Nickel	**3.61**	**J**	5.00	2.10	ug/L		10/03/24 09:30	10/04/24 22:17	1
Selenium	<1.40		5.00	1.40	ug/L		10/03/24 09:30	10/04/24 22:17	1
Silver	<0.500	^1+	1.00	0.500	ug/L		10/03/24 09:30	10/04/24 22:17	1
Thallium	<0.570		1.00	0.570	ug/L		10/03/24 09:30	10/04/24 22:17	1
Vanadium	<1.10		5.00	1.10	ug/L		10/03/24 09:30	10/04/24 22:17	1
Zinc	<9.70		20.0	9.70	ug/L		10/03/24 09:30	10/04/24 22:17	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	<1.39		1.88	1.39	mg/L			10/02/24 16:58	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**5.38**				NTU			10/01/24 10:30	1

Client: AECOM
Job ID: 310-291802-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-113B
Lab Sample ID: 310-291802-3
Date Collected: 10/01/24 13:00
Matrix: Water
Date Received: 10/02/24 09:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			10/03/24 15:22	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			10/03/24 15:22	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			10/03/24 15:22	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			10/03/24 15:22	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			10/03/24 15:22	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			10/03/24 15:22	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			10/03/24 15:22	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			10/03/24 15:22	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			10/03/24 15:22	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			10/03/24 15:22	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			10/03/24 15:22	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			10/03/24 15:22	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			10/03/24 15:22	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			10/03/24 15:22	1
2-Hexanone	<2.00		10.0	2.00	ug/L			10/03/24 15:22	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			10/03/24 15:22	1
Acetone	<3.10		10.0	3.10	ug/L			10/03/24 15:22	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			10/03/24 15:22	1
Benzene	<0.220		0.500	0.220	ug/L			10/03/24 15:22	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			10/03/24 15:22	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			10/03/24 15:22	1
Bromoform	<0.780		5.00	0.780	ug/L			10/03/24 15:22	1
Bromomethane	<1.10		4.00	1.10	ug/L			10/03/24 15:22	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			10/03/24 15:22	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			10/03/24 15:22	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			10/03/24 15:22	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			10/03/24 15:22	1
Chloroethane	<0.790		4.00	0.790	ug/L			10/03/24 15:22	1
Chloroform	<1.30		3.00	1.30	ug/L			10/03/24 15:22	1
Chloromethane	<0.610		3.00	0.610	ug/L			10/03/24 15:22	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			10/03/24 15:22	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			10/03/24 15:22	1
Dibromomethane	<0.330		1.00	0.330	ug/L			10/03/24 15:22	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			10/03/24 15:22	1
Iodomethane	<7.00		10.0	7.00	ug/L			10/03/24 15:22	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			10/03/24 15:22	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			10/03/24 15:22	1
o-Xylene	<0.400		1.00	0.400	ug/L			10/03/24 15:22	1
Styrene	<0.370		1.00	0.370	ug/L			10/03/24 15:22	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			10/03/24 15:22	1
Toluene	<0.430		1.00	0.430	ug/L			10/03/24 15:22	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			10/03/24 15:22	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			10/03/24 15:22	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			10/03/24 15:22	1
Trichloroethene	<0.430		1.00	0.430	ug/L			10/03/24 15:22	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			10/03/24 15:22	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			10/03/24 15:22	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			10/03/24 15:22	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			10/03/24 15:22	1

Client: AECOM
Job ID: 310-291802-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-113B
Lab Sample ID: 310-291802-3
Date Collected: 10/01/24 13:00
Matrix: Water
Date Received: 10/02/24 09:00

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*108*		*73 - 130*		*10/03/24 15:22*	*1*
Toluene-d8 (Surr)	*95*		*80 - 120*		*10/03/24 15:22*	*1*
4-Bromofluorobenzene (Surr)	*90*		*80 - 120*		*10/03/24 15:22*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		10/03/24 09:30	10/04/24 22:20	1
Arsenic	**1.52**	**J**	2.00	0.530	ug/L		10/03/24 09:30	10/04/24 22:20	1
Barium	**15.8**		2.00	0.660	ug/L		10/03/24 09:30	10/04/24 22:20	1
Beryllium	<0.330		1.00	0.330	ug/L		10/03/24 09:30	10/04/24 22:20	1
Cadmium	<0.100		0.200	0.100	ug/L		10/03/24 09:30	10/04/24 22:20	1
Chromium	**1.27**	**J**	5.00	1.20	ug/L		10/03/24 09:30	10/04/24 22:20	1
Cobalt	**12.6**		0.500	0.170	ug/L		10/03/24 09:30	10/04/24 22:20	1
Copper	<1.80		5.00	1.80	ug/L		10/03/24 09:30	10/04/24 22:20	1
Lead	<0.260		0.500	0.260	ug/L		10/03/24 09:30	10/04/24 22:20	1
Nickel	**15.9**		5.00	2.10	ug/L		10/03/24 09:30	10/04/24 22:20	1
Selenium	<1.40		5.00	1.40	ug/L		10/03/24 09:30	10/04/24 22:20	1
Silver	<0.500	^1+	1.00	0.500	ug/L		10/03/24 09:30	10/04/24 22:20	1
Thallium	<0.570		1.00	0.570	ug/L		10/03/24 09:30	10/04/24 22:20	1
Vanadium	<1.10		5.00	1.10	ug/L		10/03/24 09:30	10/04/24 22:20	1
Zinc	<9.70		20.0	9.70	ug/L		10/03/24 09:30	10/04/24 22:20	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide (SW846 9034)	<1.41		3.00	1.41	mg/L		10/07/24 10:56	10/07/24 10:58	1
Total Suspended Solids (USGS I-3765-85)	**11.3**		5.00	3.70	mg/L			10/02/24 16:58	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**29.25**				NTU			10/01/24 13:00	1

Client: AECOM
Job ID: 310-291802-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Trip Blank
Lab Sample ID: 310-291802-4
Date Collected: 10/01/24 00:00
Matrix: Water
Date Received: 10/02/24 09:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			10/03/24 11:22	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			10/03/24 11:22	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			10/03/24 11:22	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			10/03/24 11:22	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			10/03/24 11:22	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			10/03/24 11:22	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			10/03/24 11:22	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			10/03/24 11:22	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			10/03/24 11:22	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			10/03/24 11:22	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			10/03/24 11:22	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			10/03/24 11:22	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			10/03/24 11:22	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			10/03/24 11:22	1
2-Hexanone	<2.00		10.0	2.00	ug/L			10/03/24 11:22	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			10/03/24 11:22	1
Acetone	<3.10		10.0	3.10	ug/L			10/03/24 11:22	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			10/03/24 11:22	1
Benzene	<0.220		0.500	0.220	ug/L			10/03/24 11:22	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			10/03/24 11:22	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			10/03/24 11:22	1
Bromoform	<0.780		5.00	0.780	ug/L			10/03/24 11:22	1
Bromomethane	<1.10		4.00	1.10	ug/L			10/03/24 11:22	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			10/03/24 11:22	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			10/03/24 11:22	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			10/03/24 11:22	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			10/03/24 11:22	1
Chloroethane	<0.790		4.00	0.790	ug/L			10/03/24 11:22	1
Chloroform	<1.30		3.00	1.30	ug/L			10/03/24 11:22	1
Chloromethane	<0.610		3.00	0.610	ug/L			10/03/24 11:22	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			10/03/24 11:22	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			10/03/24 11:22	1
Dibromomethane	<0.330		1.00	0.330	ug/L			10/03/24 11:22	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			10/03/24 11:22	1
Iodomethane	<7.00		10.0	7.00	ug/L			10/03/24 11:22	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			10/03/24 11:22	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			10/03/24 11:22	1
o-Xylene	<0.400		1.00	0.400	ug/L			10/03/24 11:22	1
Styrene	<0.370		1.00	0.370	ug/L			10/03/24 11:22	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			10/03/24 11:22	1
Toluene	<0.430		1.00	0.430	ug/L			10/03/24 11:22	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			10/03/24 11:22	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			10/03/24 11:22	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			10/03/24 11:22	1
Trichloroethene	<0.430		1.00	0.430	ug/L			10/03/24 11:22	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			10/03/24 11:22	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			10/03/24 11:22	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			10/03/24 11:22	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			10/03/24 11:22	1

Client: AECOM
Job ID: 310-291802-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Trip Blank
Lab Sample ID: 310-291802-4
Date Collected: 10/01/24 00:00
Matrix: Water
Date Received: 10/02/24 09:00

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	106		73 - 130		10/03/24 11:22	1
Toluene-d8 (Surr)	96		80 - 120		10/03/24 11:22	1
4-Bromofluorobenzene (Surr)	90		80 - 120		10/03/24 11:22	1

Definitions/Glossary

Client: AECOM
Job ID: 310-291802-1
Project/Site: Black Hawk County Landfill (IDNR)

Qualifiers

Metals

Qualifier	Qualifier Description
^1+	Initial Calibration Verification (ICV) is outside acceptance limits, high biased.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Surrogate Summary

Client: AECOM
Job ID: 310-291802-1
Project/Site: Black Hawk County Landfill (IDNR)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)								
		DBFM	TOL	BFB						
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)						
310-291802-1	OW-101B	103	97	90						
310-291802-1	OW-101B	101	98	101						
310-291802-2	OW-105B	110	96	92						
310-291802-2 MS	OW-105B	89	102	96						
310-291802-2 MSD	OW-105B	90	101	99						
310-291802-3	OW-113B	108	95	90						
310-291802-4	Trip Blank	106	96	90						
LCS 310-435093/6	Lab Control Sample	90	104	95						
LCS 310-435093/7	Lab Control Sample	109	96	91						
LCS 310-435841/6	Lab Control Sample	101	100	99						
LCS 310-435841/7	Lab Control Sample	100	99	100						
MB 310-435093/5	Method Blank	105	95	91						
MB 310-435841/5	Method Blank	100	98	101						

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)

TOL = Toluene-d8 (Surr)

BFB = 4-Bromofluorobenzene (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 310-435093/5
Matrix: Water
Analysis Batch: 435093

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			10/03/24 10:16	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			10/03/24 10:16	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			10/03/24 10:16	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			10/03/24 10:16	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			10/03/24 10:16	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			10/03/24 10:16	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			10/03/24 10:16	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			10/03/24 10:16	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			10/03/24 10:16	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			10/03/24 10:16	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			10/03/24 10:16	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			10/03/24 10:16	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			10/03/24 10:16	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			10/03/24 10:16	1
2-Hexanone	<2.00		10.0	2.00	ug/L			10/03/24 10:16	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			10/03/24 10:16	1
Acetone	<3.10		10.0	3.10	ug/L			10/03/24 10:16	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			10/03/24 10:16	1
Benzene	<0.220		0.500	0.220	ug/L			10/03/24 10:16	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			10/03/24 10:16	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			10/03/24 10:16	1
Bromoform	<0.780		5.00	0.780	ug/L			10/03/24 10:16	1
Bromomethane	<1.10		4.00	1.10	ug/L			10/03/24 10:16	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			10/03/24 10:16	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			10/03/24 10:16	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			10/03/24 10:16	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			10/03/24 10:16	1
Chloroethane	<0.790		4.00	0.790	ug/L			10/03/24 10:16	1
Chloroform	<1.30		3.00	1.30	ug/L			10/03/24 10:16	1
Chloromethane	<0.610		3.00	0.610	ug/L			10/03/24 10:16	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			10/03/24 10:16	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			10/03/24 10:16	1
Dibromomethane	<0.330		1.00	0.330	ug/L			10/03/24 10:16	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			10/03/24 10:16	1
Iodomethane	<7.00		10.0	7.00	ug/L			10/03/24 10:16	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			10/03/24 10:16	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			10/03/24 10:16	1
o-Xylene	<0.400		1.00	0.400	ug/L			10/03/24 10:16	1
Styrene	<0.370		1.00	0.370	ug/L			10/03/24 10:16	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			10/03/24 10:16	1
Toluene	<0.430		1.00	0.430	ug/L			10/03/24 10:16	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			10/03/24 10:16	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			10/03/24 10:16	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			10/03/24 10:16	1
Trichloroethene	<0.430		1.00	0.430	ug/L			10/03/24 10:16	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			10/03/24 10:16	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			10/03/24 10:16	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			10/03/24 10:16	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-435093/5
Matrix: Water
Analysis Batch: 435093

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	<0.400		3.00	0.400	ug/L			10/03/24 10:16	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*105*		*73 - 130*		*10/03/24 10:16*	*1*
Toluene-d8 (Surr)	*95*		*80 - 120*		*10/03/24 10:16*	*1*
4-Bromofluorobenzene (Surr)	*91*		*80 - 120*		*10/03/24 10:16*	*1*

Lab Sample ID: LCS 310-435093/6
Matrix: Water
Analysis Batch: 435093

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	20.0	17.50		ug/L		87	71 - 120
1,1,1-Trichloroethane	20.0	18.09		ug/L		90	73 - 129
1,1,2,2-Tetrachloroethane	20.0	22.29		ug/L		111	68 - 124
1,1,2-Trichloroethane	20.0	19.41		ug/L		97	73 - 123
1,1-Dichloroethane	20.0	22.77		ug/L		114	70 - 127
1,1-Dichloroethene	20.0	20.74		ug/L		104	63 - 132
1,2,3-Trichloropropane	20.0	19.90		ug/L		100	65 - 127
1,2-Dibromo-3-Chloropropane	20.0	24.26		ug/L		121	50 - 150
1,2-Dibromoethane (EDB)	20.0	18.75		ug/L		94	75 - 125
1,2-Dichlorobenzene	20.0	17.21		ug/L		86	74 - 120
1,2-Dichloroethane	20.0	17.86		ug/L		89	71 - 125
1,2-Dichloropropane	20.0	20.88		ug/L		104	73 - 124
1,4-Dichlorobenzene	20.0	17.74		ug/L		89	72 - 120
2-Butanone (MEK)	40.0	43.16		ug/L		108	50 - 150
2-Hexanone	40.0	51.30		ug/L		128	60 - 140
4-Methyl-2-pentanone (MIBK)	40.0	46.62		ug/L		117	60 - 139
Acetone	40.0	55.29		ug/L		138	50 - 150
Acrylonitrile	200	233.9		ug/L		117	50 - 150
Benzene	20.0	19.77		ug/L		99	72 - 124
Bromochloromethane	20.0	17.70		ug/L		88	73 - 130
Bromodichloromethane	20.0	17.48		ug/L		87	74 - 122
Bromoform	20.0	17.99		ug/L		90	61 - 122
Carbon disulfide	20.0	21.73		ug/L		109	59 - 135
Carbon tetrachloride	20.0	16.94		ug/L		85	67 - 132
Chlorobenzene	20.0	18.14		ug/L		91	76 - 120
Chlorodibromomethane	20.0	16.17		ug/L		81	71 - 121
Chloroform	20.0	19.44		ug/L		97	72 - 125
cis-1,2-Dichloroethene	20.0	18.47		ug/L		92	74 - 123
cis-1,3-Dichloropropene	20.0	19.55		ug/L		98	71 - 125
Dibromomethane	20.0	18.06		ug/L		90	74 - 125
Ethylbenzene	20.0	20.39		ug/L		102	74 - 122
Iodomethane	20.0	13.24		ug/L		66	10 - 150
Methylene Chloride	20.0	21.05		ug/L		105	50 - 150
Styrene	20.0	19.47		ug/L		97	74 - 121
Tetrachloroethene	20.0	16.16		ug/L		81	71 - 130
Toluene	20.0	19.49		ug/L		97	74 - 123

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-435093/6
Matrix: Water
Analysis Batch: 435093

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
trans-1,2-Dichloroethene	20.0	19.17		ug/L		96	70 - 126
trans-1,3-Dichloropropene	20.0	21.25		ug/L		106	69 - 123
trans-1,4-Dichloro-2-butene	20.0	24.34		ug/L		122	50 - 150
Trichloroethene	20.0	18.37		ug/L		92	72 - 126
Vinyl acetate	40.0	39.36		ug/L		98	50 - 150
Xylenes, Total	40.0	37.56		ug/L		94	73 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*90*		*73 - 130*
Toluene-d8 (Surr)	*104*		*80 - 120*
4-Bromofluorobenzene (Surr)	*95*		*80 - 120*

Lab Sample ID: LCS 310-435093/7
Matrix: Water
Analysis Batch: 435093

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	17.64		ug/L		88	23 - 150
Chloroethane	20.0	21.60		ug/L		108	54 - 136
Chloromethane	20.0	27.69		ug/L		138	38 - 150
Trichlorofluoromethane	20.0	19.10		ug/L		95	54 - 149
Vinyl chloride	20.0	23.49		ug/L		117	56 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*109*		*73 - 130*
Toluene-d8 (Surr)	*96*		*80 - 120*
4-Bromofluorobenzene (Surr)	*91*		*80 - 120*

Lab Sample ID: 310-291802-2 MS
Matrix: Water
Analysis Batch: 435093

Client Sample ID: OW-105B
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	<0.380		25.0	16.70		ug/L		67	55 - 130
1,1,1-Trichloroethane	<0.190		25.0	16.81		ug/L		67	52 - 130
1,1,2,2-Tetrachloroethane	<0.470		25.0	22.53		ug/L		90	54 - 130
1,1,2-Trichloroethane	<0.450		25.0	19.27		ug/L		77	58 - 130
1,1-Dichloroethane	<0.220		25.0	22.18		ug/L		89	49 - 130
1,1-Dichloroethene	<0.560		25.0	21.12		ug/L		84	37 - 132
1,2,3-Trichloropropane	<0.590		25.0	19.68		ug/L		79	49 - 130
1,2-Dibromo-3-Chloropropane	<1.20		25.0	23.03		ug/L		92	38 - 150
1,2-Dibromoethane (EDB)	<0.340		25.0	19.08		ug/L		76	60 - 130
1,2-Dichlorobenzene	<0.370		25.0	18.04		ug/L		72	59 - 130
1,2-Dichloroethane	<0.390		25.0	18.05		ug/L		72	51 - 130
1,2-Dichloropropane	<0.270		25.0	20.79		ug/L		83	57 - 130
1,4-Dichlorobenzene	<0.230		25.0	17.98		ug/L		72	57 - 130
2-Butanone (MEK)	<2.10		50.0	42.74		ug/L		85	38 - 150
2-Hexanone	<2.00		50.0	46.10		ug/L		92	46 - 140

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 310-291802-2 MS
Matrix: Water
Analysis Batch: 435093

Client Sample ID: OW-105B
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
4-Methyl-2-pentanone (MIBK)	<2.10		50.0	48.14		ug/L		96	47 - 139
Acetone	<3.10		50.0	51.25		ug/L		102	31 - 150
Acrylonitrile	<2.20		250	238.0		ug/L		95	40 - 150
Benzene	<0.220		25.0	20.58		ug/L		82	46 - 130
Bromochloromethane	<0.540		25.0	17.94		ug/L		72	57 - 130
Bromodichloromethane	<0.390		25.0	16.85		ug/L		67	57 - 130
Bromoform	<0.780		25.0	16.65		ug/L		67	44 - 130
Carbon disulfide	<0.450		25.0	23.70		ug/L		95	38 - 135
Carbon tetrachloride	<0.650		25.0	14.87		ug/L		59	45 - 132
Chlorobenzene	<0.400		25.0	18.49		ug/L		74	59 - 130
Chlorodibromomethane	<0.750		25.0	16.18		ug/L		65	54 - 130
Chloroform	<1.30		25.0	18.89		ug/L		76	51 - 130
cis-1,2-Dichloroethene	<0.210		25.0	18.60		ug/L		74	45 - 130
cis-1,3-Dichloropropene	<0.250		25.0	19.79		ug/L		79	53 - 130
Dibromomethane	<0.330		25.0	17.53		ug/L		70	59 - 130
Ethylbenzene	<0.310		25.0	20.57		ug/L		82	45 - 130
Iodomethane	<7.00		25.0	17.08		ug/L		68	10 - 150
Methylene Chloride	<1.70		25.0	22.57		ug/L		90	37 - 150
Styrene	<0.370		25.0	19.79		ug/L		79	47 - 130
Tetrachloroethene	<0.480		25.0	16.79		ug/L		67	47 - 130
Toluene	<0.430		25.0	19.74		ug/L		79	51 - 130
trans-1,2-Dichloroethene	<0.270		25.0	18.32		ug/L		73	48 - 130
trans-1,3-Dichloropropene	<0.560		25.0	21.19		ug/L		85	50 - 130
trans-1,4-Dichloro-2-butene	<1.10		25.0	22.69		ug/L		91	26 - 150
Trichloroethene	<0.430		25.0	18.48		ug/L		74	51 - 130
Vinyl acetate	<2.50		50.0	40.32		ug/L		81	29 - 150
Xylenes, Total	<0.400		50.0	37.07		ug/L		74	43 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*89*		*73 - 130*
Toluene-d8 (Surr)	*102*		*80 - 120*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*

Lab Sample ID: 310-291802-2 MSD
Matrix: Water
Analysis Batch: 435093

Client Sample ID: OW-105B
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	<0.380		25.0	17.05		ug/L		68	55 - 130	2	20
1,1,1-Trichloroethane	<0.190		25.0	16.93		ug/L		68	52 - 130	1	20
1,1,2,2-Tetrachloroethane	<0.470		25.0	23.50		ug/L		94	54 - 130	4	20
1,1,2-Trichloroethane	<0.450		25.0	19.65		ug/L		79	58 - 130	2	20
1,1-Dichloroethane	<0.220		25.0	22.06		ug/L		88	49 - 130	1	20
1,1-Dichloroethene	<0.560		25.0	19.57		ug/L		78	37 - 132	8	26
1,2,3-Trichloropropane	<0.590		25.0	20.68		ug/L		83	49 - 130	5	26
1,2-Dibromo-3-Chloropropane	<1.20		25.0	24.36		ug/L		97	38 - 150	6	20
1,2-Dibromoethane (EDB)	<0.340		25.0	19.01		ug/L		76	60 - 130	0	20
1,2-Dichlorobenzene	<0.370		25.0	18.35		ug/L		73	59 - 130	2	20

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 310-291802-2 MSD
Matrix: Water
Analysis Batch: 435093

Client Sample ID: OW-105B
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2-Dichloroethane	<0.390		25.0	18.35		ug/L		73	51 - 130	2	20
1,2-Dichloropropane	<0.270		25.0	20.92		ug/L		84	57 - 130	1	20
1,4-Dichlorobenzene	<0.230		25.0	18.19		ug/L		73	57 - 130	1	20
2-Butanone (MEK)	<2.10		50.0	44.91		ug/L		90	38 - 150	5	20
2-Hexanone	<2.00		50.0	51.73		ug/L		103	46 - 140	12	20
4-Methyl-2-pentanone (MIBK)	<2.10		50.0	49.97		ug/L		100	47 - 139	4	20
Acetone	<3.10		50.0	59.70		ug/L		119	31 - 150	15	29
Acrylonitrile	<2.20		250	234.5		ug/L		94	40 - 150	1	20
Benzene	<0.220		25.0	19.28		ug/L		77	46 - 130	7	20
Bromochloromethane	<0.540		25.0	17.53		ug/L		70	57 - 130	2	20
Bromodichloromethane	<0.390		25.0	16.65		ug/L		67	57 - 130	1	20
Bromoform	<0.780		25.0	16.68		ug/L		67	44 - 130	0	20
Carbon disulfide	<0.450		25.0	20.56		ug/L		82	38 - 135	14	30
Carbon tetrachloride	<0.650		25.0	15.94		ug/L		64	45 - 132	7	20
Chlorobenzene	<0.400		25.0	17.93		ug/L		72	59 - 130	3	20
Chlorodibromomethane	<0.750		25.0	16.28		ug/L		65	54 - 130	1	20
Chloroform	<1.30		25.0	18.74		ug/L		75	51 - 130	1	20
cis-1,2-Dichloroethene	<0.210		25.0	17.81		ug/L		71	45 - 130	4	20
cis-1,3-Dichloropropene	<0.250		25.0	19.41		ug/L		78	53 - 130	2	20
Dibromomethane	<0.330		25.0	18.13		ug/L		73	59 - 130	3	20
Ethylbenzene	<0.310		25.0	20.08		ug/L		80	45 - 130	2	20
Iodomethane	<7.00		25.0	16.55		ug/L		66	10 - 150	3	35
Methylene Chloride	<1.70		25.0	21.01		ug/L		84	37 - 150	7	24
Styrene	<0.370		25.0	19.15		ug/L		77	47 - 130	3	20
Tetrachloroethene	<0.480		25.0	16.63		ug/L		67	47 - 130	1	20
Toluene	<0.430		25.0	18.98		ug/L		76	51 - 130	4	20
trans-1,2-Dichloroethene	<0.270		25.0	17.57		ug/L		70	48 - 130	4	22
trans-1,3-Dichloropropene	<0.560		25.0	21.12		ug/L		84	50 - 130	0	20
trans-1,4-Dichloro-2-butene	<1.10		25.0	24.40		ug/L		98	26 - 150	7	23
Trichloroethene	<0.430		25.0	17.49		ug/L		70	51 - 130	5	20
Vinyl acetate	<2.50		50.0	41.53		ug/L		83	29 - 150	3	23
Xylenes, Total	<0.400		50.0	36.00		ug/L		72	43 - 130	3	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*90*		*73 - 130*
Toluene-d8 (Surr)	*101*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*

Lab Sample ID: MB 310-435841/5
Matrix: Water
Analysis Batch: 435841

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			10/10/24 13:52	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			10/10/24 13:52	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			10/10/24 13:52	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			10/10/24 13:52	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			10/10/24 13:52	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-435841/5
Matrix: Water
Analysis Batch: 435841

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			10/10/24 13:52	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			10/10/24 13:52	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			10/10/24 13:52	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			10/10/24 13:52	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			10/10/24 13:52	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			10/10/24 13:52	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			10/10/24 13:52	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			10/10/24 13:52	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			10/10/24 13:52	1
2-Hexanone	<2.00		10.0	2.00	ug/L			10/10/24 13:52	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			10/10/24 13:52	1
Acetone	<3.10		10.0	3.10	ug/L			10/10/24 13:52	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			10/10/24 13:52	1
Benzene	<0.220		0.500	0.220	ug/L			10/10/24 13:52	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			10/10/24 13:52	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			10/10/24 13:52	1
Bromoform	<0.780		5.00	0.780	ug/L			10/10/24 13:52	1
Bromomethane	<1.10		4.00	1.10	ug/L			10/10/24 13:52	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			10/10/24 13:52	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			10/10/24 13:52	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			10/10/24 13:52	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			10/10/24 13:52	1
Chloroethane	<0.790		4.00	0.790	ug/L			10/10/24 13:52	1
Chloroform	<1.30		3.00	1.30	ug/L			10/10/24 13:52	1
Chloromethane	<0.610		3.00	0.610	ug/L			10/10/24 13:52	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			10/10/24 13:52	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			10/10/24 13:52	1
Dibromomethane	<0.330		1.00	0.330	ug/L			10/10/24 13:52	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			10/10/24 13:52	1
Iodomethane	<7.00		10.0	7.00	ug/L			10/10/24 13:52	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			10/10/24 13:52	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			10/10/24 13:52	1
o-Xylene	<0.400		1.00	0.400	ug/L			10/10/24 13:52	1
Styrene	<0.370		1.00	0.370	ug/L			10/10/24 13:52	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			10/10/24 13:52	1
Toluene	<0.430		1.00	0.430	ug/L			10/10/24 13:52	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			10/10/24 13:52	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			10/10/24 13:52	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			10/10/24 13:52	1
Trichloroethene	<0.430		1.00	0.430	ug/L			10/10/24 13:52	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			10/10/24 13:52	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			10/10/24 13:52	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			10/10/24 13:52	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			10/10/24 13:52	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*100*		*73 - 130*		*10/10/24 13:52*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*10/10/24 13:52*	*1*

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-435841/5
Matrix: Water
Analysis Batch: 435841

Client Sample ID: Method Blank
Prep Type: Total/NA

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		80 - 120		10/10/24 13:52	1

Lab Sample ID: LCS 310-435841/6
Matrix: Water
Analysis Batch: 435841

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	20.0	21.64		ug/L		108	71 - 120
1,1,1-Trichloroethane	20.0	21.36		ug/L		107	73 - 129
1,1,2,2-Tetrachloroethane	20.0	21.73		ug/L		109	68 - 124
1,1,2-Trichloroethane	20.0	21.87		ug/L		109	73 - 123
1,1-Dichloroethane	20.0	20.51		ug/L		103	70 - 127
1,1-Dichloroethene	20.0	20.61		ug/L		103	63 - 132
1,2,3-Trichloropropane	20.0	21.52		ug/L		108	65 - 127
1,2-Dibromo-3-Chloropropane	20.0	20.76		ug/L		104	50 - 150
1,2-Dibromoethane (EDB)	20.0	21.25		ug/L		106	75 - 125
1,2-Dichlorobenzene	20.0	21.41		ug/L		107	74 - 120
1,2-Dichloroethane	20.0	20.58		ug/L		103	71 - 125
1,2-Dichloropropane	20.0	20.66		ug/L		103	73 - 124
1,4-Dichlorobenzene	20.0	21.25		ug/L		106	72 - 120
2-Butanone (MEK)	40.0	41.95		ug/L		105	50 - 150
2-Hexanone	40.0	44.19		ug/L		110	60 - 140
4-Methyl-2-pentanone (MIBK)	40.0	43.46		ug/L		109	60 - 139
Acetone	40.0	40.85		ug/L		102	50 - 150
Acrylonitrile	200	201.9		ug/L		101	50 - 150
Benzene	20.0	20.74		ug/L		104	72 - 124
Bromochloromethane	20.0	20.66		ug/L		103	73 - 130
Bromodichloromethane	20.0	21.17		ug/L		106	74 - 122
Bromoform	20.0	21.33		ug/L		107	61 - 122
Carbon disulfide	20.0	20.04		ug/L		100	59 - 135
Carbon tetrachloride	20.0	21.32		ug/L		107	67 - 132
Chlorobenzene	20.0	21.47		ug/L		107	76 - 120
Chlorodibromomethane	20.0	21.44		ug/L		107	71 - 121
Chloroform	20.0	20.10		ug/L		100	72 - 125
cis-1,2-Dichloroethene	20.0	20.79		ug/L		104	74 - 123
cis-1,3-Dichloropropene	20.0	21.54		ug/L		108	71 - 125
Dibromomethane	20.0	20.72		ug/L		104	74 - 125
Ethylbenzene	20.0	22.07		ug/L		110	74 - 122
Iodomethane	20.0	14.61		ug/L		73	10 - 150
Methylene Chloride	20.0	19.87		ug/L		99	50 - 150
Styrene	20.0	22.41		ug/L		112	74 - 121
Tetrachloroethene	20.0	21.95		ug/L		110	71 - 130
Toluene	20.0	21.08		ug/L		105	74 - 123
trans-1,2-Dichloroethene	20.0	20.80		ug/L		104	70 - 126
trans-1,3-Dichloropropene	20.0	21.67		ug/L		108	69 - 123
trans-1,4-Dichloro-2-butene	20.0	20.12		ug/L		101	50 - 150
Trichloroethene	20.0	21.20		ug/L		106	72 - 126
Vinyl acetate	40.0	43.17		ug/L		108	50 - 150

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-435841/6
Matrix: Water
Analysis Batch: 435841

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Xylenes, Total			40.0	43.80		ug/L		110	73 - 123		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*101*		*73 - 130*
Toluene-d8 (Surr)	*100*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*

Lab Sample ID: LCS 310-435841/7
Matrix: Water
Analysis Batch: 435841

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Bromomethane			20.0	16.21		ug/L		81	23 - 150		
Chloroethane			20.0	19.65		ug/L		98	54 - 136		
Chloromethane			20.0	20.27		ug/L		101	38 - 150		
Trichlorofluoromethane			20.0	21.81		ug/L		109	54 - 149		
Vinyl chloride			20.0	20.72		ug/L		104	56 - 140		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*100*		*73 - 130*
Toluene-d8 (Surr)	*99*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-435034/1-A
Matrix: Water
Analysis Batch: 435360

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 435034

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		10/03/24 09:30	10/04/24 21:01	1
Arsenic	<0.530		2.00	0.530	ug/L		10/03/24 09:30	10/04/24 21:01	1
Barium	<0.660		2.00	0.660	ug/L		10/03/24 09:30	10/04/24 21:01	1
Beryllium	<0.330		1.00	0.330	ug/L		10/03/24 09:30	10/04/24 21:01	1
Cadmium	<0.100		0.200	0.100	ug/L		10/03/24 09:30	10/04/24 21:01	1
Chromium	<1.20		5.00	1.20	ug/L		10/03/24 09:30	10/04/24 21:01	1
Cobalt	<0.170		0.500	0.170	ug/L		10/03/24 09:30	10/04/24 21:01	1
Copper	<1.80		5.00	1.80	ug/L		10/03/24 09:30	10/04/24 21:01	1
Lead	<0.260		0.500	0.260	ug/L		10/03/24 09:30	10/04/24 21:01	1
Nickel	<2.10		5.00	2.10	ug/L		10/03/24 09:30	10/04/24 21:01	1
Selenium	<1.40		5.00	1.40	ug/L		10/03/24 09:30	10/04/24 21:01	1
Silver	<0.500	^1+	1.00	0.500	ug/L		10/03/24 09:30	10/04/24 21:01	1
Thallium	<0.570		1.00	0.570	ug/L		10/03/24 09:30	10/04/24 21:01	1
Vanadium	<1.10		5.00	1.10	ug/L		10/03/24 09:30	10/04/24 21:01	1
Zinc	<9.70		20.0	9.70	ug/L		10/03/24 09:30	10/04/24 21:01	1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 310-435034/2-A
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 435360
Prep Batch: 435034

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Antimony			200	222.3		ug/L		111	80 - 120		
Arsenic			200	216.7		ug/L		108	80 - 120		
Barium			100	108.1		ug/L		108	80 - 120		
Beryllium			100	91.59		ug/L		92	80 - 120		
Cadmium			100	103.3		ug/L		103	80 - 120		
Chromium			100	98.44		ug/L		98	80 - 120		
Cobalt			100	110.9		ug/L		111	80 - 120		
Copper			200	221.4		ug/L		111	80 - 120		
Lead			200	211.0		ug/L		105	80 - 120		
Nickel			200	202.1		ug/L		101	80 - 120		
Selenium			400	412.6		ug/L		103	80 - 120		
Silver			100	109.2	^1+	ug/L		109	80 - 120		
Thallium			100	95.44		ug/L		95	80 - 120		
Vanadium			100	94.70		ug/L		95	80 - 120		
Zinc			200	189.2		ug/L		95	80 - 120		

Method: 9034 - Sulfide, Acid soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 240-629766/1-A
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 629772
Prep Batch: 629766

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.41		3.00	1.41	mg/L		10/07/24 10:56	10/07/24 10:58	1

Lab Sample ID: LCS 240-629766/2-A
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 629772
Prep Batch: 629766

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Sulfide			8.53	8.400		mg/L		98	70 - 120		

Lab Sample ID: 310-291802-3 MS
Client Sample ID: OW-113B
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 629772
Prep Batch: 629766

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Sulfide	<1.41		8.53	6.400		mg/L		75	32 - 130		

Lab Sample ID: 310-291802-3 MSD
Client Sample ID: OW-113B
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 629772
Prep Batch: 629766

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfide	<1.41		8.53	6.800		mg/L		80	32 - 130	6	30

Client: AECOM
Job ID: 310-291802-1
Project/Site: Black Hawk County Landfill (IDNR)

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: MB 310-435037/1
Matrix: Water
Analysis Batch: 435037

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<3.70		5.00	3.70	mg/L			10/02/24 16:58	1

Lab Sample ID: LCS 310-435037/2
Matrix: Water
Analysis Batch: 435037

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	104.0		mg/L		104	81 - 116

GC/MS VOA

Analysis Batch: 435093

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-291802-1	OW-101B	Total/NA	Water	8260D	
310-291802-2	OW-105B	Total/NA	Water	8260D	
310-291802-3	OW-113B	Total/NA	Water	8260D	
310-291802-4	Trip Blank	Total/NA	Water	8260D	
MB 310-435093/5	Method Blank	Total/NA	Water	8260D	
LCS 310-435093/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-435093/7	Lab Control Sample	Total/NA	Water	8260D	
310-291802-2 MS	OW-105B	Total/NA	Water	8260D	
310-291802-2 MSD	OW-105B	Total/NA	Water	8260D	

Analysis Batch: 435841

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-291802-1	OW-101B	Total/NA	Water	8260D	
MB 310-435841/5	Method Blank	Total/NA	Water	8260D	
LCS 310-435841/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-435841/7	Lab Control Sample	Total/NA	Water	8260D	

Metals

Prep Batch: 435034

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-291802-1	OW-101B	Total/NA	Water	3005A	
310-291802-2	OW-105B	Total/NA	Water	3005A	
310-291802-3	OW-113B	Total/NA	Water	3005A	
MB 310-435034/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-435034/2-A	Lab Control Sample	Total/NA	Water	3005A	

Analysis Batch: 435360

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-291802-1	OW-101B	Total/NA	Water	6020B	435034
310-291802-2	OW-105B	Total/NA	Water	6020B	435034
310-291802-3	OW-113B	Total/NA	Water	6020B	435034
MB 310-435034/1-A	Method Blank	Total/NA	Water	6020B	435034
LCS 310-435034/2-A	Lab Control Sample	Total/NA	Water	6020B	435034

General Chemistry

Analysis Batch: 435037

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-291802-1	OW-101B	Total/NA	Water	I-3765-85	
310-291802-2	OW-105B	Total/NA	Water	I-3765-85	
310-291802-3	OW-113B	Total/NA	Water	I-3765-85	
MB 310-435037/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-435037/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Prep Batch: 629766

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-291802-3	OW-113B	Total/NA	Water	9030B	
MB 240-629766/1-A	Method Blank	Total/NA	Water	9030B	
LCS 240-629766/2-A	Lab Control Sample	Total/NA	Water	9030B	
310-291802-3 MS	OW-113B	Total/NA	Water	9030B	
310-291802-3 MSD	OW-113B	Total/NA	Water	9030B	

QC Association Summary

Client: AECOM
Job ID: 310-291802-1
Project/Site: Black Hawk County Landfill (IDNR)

General Chemistry

Analysis Batch: 629772

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-291802-3	OW-113B	Total/NA	Water	9034	629766
MB 240-629766/1-A	Method Blank	Total/NA	Water	9034	629766
LCS 240-629766/2-A	Lab Control Sample	Total/NA	Water	9034	629766
310-291802-3 MS	OW-113B	Total/NA	Water	9034	629766
310-291802-3 MSD	OW-113B	Total/NA	Water	9034	629766

Field Service / Mobile Lab

Analysis Batch: 435709

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-291802-1	OW-101B	Total/NA	Water	Field Sampling	
310-291802-2	OW-105B	Total/NA	Water	Field Sampling	
310-291802-3	OW-113B	Total/NA	Water	Field Sampling	

Lab Chronicle

Client: AECOM
Job ID: 310-291802-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-101B
Lab Sample ID: 310-291802-1
Date Collected: 10/01/24 09:30
Matrix: Water
Date Received: 10/02/24 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	435093	WSE8	EET CF	10/03/24 14:39
Total/NA	Analysis	8260D		1	435841	WSE8	EET CF	10/10/24 15:01
Total/NA	Prep	3005A			435034	F5MW	EET CF	10/03/24 09:30
Total/NA	Analysis	6020B		1	435360	NFT2	EET CF	10/04/24 22:15
Total/NA	Analysis	I-3765-85		1	435037	MDU9	EET CF	10/02/24 16:58
Total/NA	Analysis	Field Sampling		1	435709	BJ0R	EET CF	10/01/24 09:30

Client Sample ID: OW-105B
Lab Sample ID: 310-291802-2
Date Collected: 10/01/24 10:30
Matrix: Water
Date Received: 10/02/24 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	435093	WSE8	EET CF	10/03/24 15:01
Total/NA	Prep	3005A			435034	F5MW	EET CF	10/03/24 09:30
Total/NA	Analysis	6020B		1	435360	NFT2	EET CF	10/04/24 22:17
Total/NA	Analysis	I-3765-85		1	435037	MDU9	EET CF	10/02/24 16:58
Total/NA	Analysis	Field Sampling		1	435709	BJ0R	EET CF	10/01/24 10:30

Client Sample ID: OW-113B
Lab Sample ID: 310-291802-3
Date Collected: 10/01/24 13:00
Matrix: Water
Date Received: 10/02/24 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	435093	WSE8	EET CF	10/03/24 15:22
Total/NA	Prep	3005A			435034	F5MW	EET CF	10/03/24 09:30
Total/NA	Analysis	6020B		1	435360	NFT2	EET CF	10/04/24 22:20
Total/NA	Prep	9030B			629766	BLW	EET CLE	10/07/24 10:56
Total/NA	Analysis	9034		1	629772	BLW	EET CLE	10/07/24 10:58
Total/NA	Analysis	I-3765-85		1	435037	MDU9	EET CF	10/02/24 16:58
Total/NA	Analysis	Field Sampling		1	435709	BJ0R	EET CF	10/01/24 13:00

Client Sample ID: Trip Blank
Lab Sample ID: 310-291802-4
Date Collected: 10/01/24 00:00
Matrix: Water
Date Received: 10/02/24 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	435093	WSE8	EET CF	10/03/24 11:22

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Accreditation/Certification Summary

Client: AECOM
Job ID: 310-291802-1
Project/Site: Black Hawk County Landfill (IDNR)

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8260D		Water	m,p-Xylene
8260D		Water	o-Xylene
Field Sampling		Water	Field Turbidity

Laboratory: Eurofins Cleveland

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-28-25
Georgia	State	4062	02-27-25
Illinois	NELAP	200004	08-31-25
Iowa	State	421	06-01-25
Kentucky (UST)	State	112225	02-27-25
Kentucky (WW)	State	KY98016	12-30-24
Minnesota	NELAP	039-999-348	12-31-24
New Hampshire	NELAP	225024	09-30-25
New Jersey	NELAP	OH001	07-03-25
New York	NELAP	10975	04-02-25
Ohio VAP	State	ORELAP 4062	02-27-25
Oregon	NELAP	4062	02-27-25
Pennsylvania	NELAP	68-00340	08-31-25
Texas	NELAP	T104704517-22-19	08-31-25
USDA	US Federal Programs	P330-18-00281	01-05-27
Virginia	NELAP	460175	09-14-25
West Virginia DEP	State	210	12-31-24

Method Summary

Client: AECOM
Job ID: 310-291802-1
Project/Site: Black Hawk County Landfill (IDNR)

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
9034	Sulfide, Acid soluble and Insoluble (Titrimetric)	SW846	EET CLE
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
Field Sampling	Field Sampling	EPA	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
5030B	Purge and Trap	SW846	EET CF
9030B	Sulfide, Distillation (Acid Soluble and Insoluble)	SW846	EET CLE

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

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310-291802 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: AECOM			
City/State: CITY Waterloo	STATE IA	Project: Black Hawk Co SDNR	
Receipt Information			
Date/Time Received: DATE 10 2 24	TIME 0900	Received By: [illegible]	
Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ Lab Field Services ☑ Client Drop-off ☐ Other:_____			
Condition of Cooler/Containers			
Sample(s) received in Cooler?	☑ Yes ☐ No	*If yes:* Cooler ID:	
Multiple Coolers?	☐ Yes ☑ No	*If yes:* Cooler # _____ of _____	
Cooler Custody Seals Present?	☐ Yes ☑ No	*If yes:* Cooler custody seals intact? ☐ Yes ☐ No	
Sample Custody Seals Present?	☐ Yes ☑ No	*If yes:* Sample custody seals intact? ☐ Yes ☐ No	
Trip Blank Present?	☑ Yes ☐ No	*If yes:* Which VOA samples are in cooler? ↓	
Temperature Record			
Coolant: ☑ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE			
Thermometer ID: P		Correction Factor (°C): 0.0	
• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C): 1.7		Corrected Temp (°C): 1.7	
• **Sample Container Temperature**			
Container(s) used:	CONTAINER 1	CONTAINER 2	
Uncorrected Temp (°C):			
Corrected Temp (°C):			
Exceptions Noted			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No			
2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No			
NOTE: If yes, contact PM before proceeding If no, proceed with login			
Additional Comments			

Eurofins Cedar Falls
3019 Venture Way

Cedar Falls, IA 50613
phone 319 277.2401 fax 319.277 2425

Chain of Custody Record

eurofins Environment Testing America

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other IDNR

Eurofins Environment Testing America

Client Contact	**Project Manager: Chris Oelkers**	COC No
AECOM	Email Christopher Oelkers@aecom com	**Site Contact:** / **Date: 10-2-24** / 1 of 1 COCs
501 Sycamore Street, Suite 222	Tel/Fax:319-296-6878	**Lab Contact:** / **Carrier:** / TALS Project #
Waterloo, IA 50703	**Analysis Turnaround Time**	Sampler
(319) 232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS	**For Lab Use Only:**
(xxx) xxx-xxxx FAX	TAT if different from Below ____	Walk-in Client:
Project Name Black Hawk Co IDNR	☑ 2 weeks	Lab Sampling
Site Black Hawk County Landfill	☐ 1 week	Job / SDG No
P O #	☐ 2 days	
	☐ 1 day	

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	Appendix I, TSS	Appendix II, TSS	2,4-D	4,4'-DDD	beta-BHC	delta BHC	Endosulfan I	Endosulfan sulfate	Endrin aldehyde	Silvex	Sulfide	Sample Specific Notes
OW-101B	10-1-24	0930	G	GW	5	N		X											Turbidity - 5.83 NTU
OW-105B	10-1-24	1030	G	GW	5	N		X											Turbidity - 5.38 NTU
OW-113B	10-1-24	1300	G	GW	6	N		X										X	Turbidity - 29.25 NTU
OW-114B			G	GW		N		X											
OW-205B			G	GW		N		X			X			X				X	
OW-209B			G	GW		N		X											
OW-209B-FD			G	GW		N		X											
OW-212B			G	GW		N		X											
OW-213BR			G	GW		N		X											
OW-216BR			G	GW		N		X											
OW-219B			G	GW		N		X											
Trip Blank	10-1-24	0600	G	W	3	N		X											

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for ____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No | Cooler Temp (°C) Obs'd.____ Corr'd ____ | Therm ID No .____

Relinquished by: Ben Porter	Company: Aecom	Date/Time: 10-2-24	Received by:	Company:	Date/Time: 10 2 24 0900
Relinquished by:	Company:	Date/Time	Received by:	Company:	Date/Time
Relinquished by:	Company:	Date/Time	Received in Laboratory by:	Company:	Date/Time

10/13/2024

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone: 319-277-2401 Fax: 319-277-2425

Chain of Custody Record

14/15

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Bindert, Zach T	Carrier Tracking No(s):	COC No: 310-76942.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Zach.Bindert@et.eurofinsus.com	State of Origin: Iowa	Page: Page 1 of 1
Company: Eurofins Environment Testing North Centr		Accreditations Required (See note): State - Iowa; State Program - Iowa		Job #: 310-291802-1
Address: 180 S. Van Buren Avenue, ,	Due Date Requested: 10/15/2024	Analysis Requested		Preservation Codes:
City: Barberton	TAT Requested (days):			
State, Zip: OH, 44203				
Phone: 330-497-9396(Tel) 330-497-0772(Fax)	PO #:			
Email:	WO #:			
Project Name: Black Hawk County Landfill (IDNR)	Project #: 31017149			
Site: 310 - Black Hawk County (IDNR)	SSOW#:			Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9034_Calc/9030B Sulfide	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
OW-113B (310-291802-3)	10/1/24	13:00 Central	G	Water			X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing North Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing North Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing North Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing North Central, LLC.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	10-2-24 1540			10/3/24 915	EUR
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 05/06/2024

10/13/2024

Eurofins – Cleveland Sample Receipt Form/Narrative **Login # :** _____
Barberton Facility

Client Interlab En Tower Site Name _____ Cooler unpacked by: TF

Cooler Received on 10/3/24 Opened on 10/3/24

FedEx: 1st Grd (Exp) UPS FAS Waypoint Client Drop Off Eurofins Courier Other _____

Receipt After-hours: Drop-off Date/Time _____ Storage Location _____

Eurofins Cooler # EC Foam Box Client Cooler Box Other _____

Packing material used: Bubble Wrap Foam Plastic Bag (None) Other _____

COOLANT: (Wet Ice) Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt ☐ See Multiple Cooler Form
   IR GUN # 17 (CF +0.1 °C) Observed Cooler Temp. 1.4 °C Corrected Cooler Temp. 1.5 °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity_____	Yes (No)	
-Were the seals on the outside of the cooler(s) signed & dated?	Yes No (NA)	
-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)?	Yes (No)	
-Were tamper/custody seals intact and uncompromised?	Yes No (NA)	
3. Shippers' packing slip attached to the cooler(s)?	(Yes) No	
4. Did custody papers accompany the sample(s)?	(Yes) No	
5. Were the custody papers relinquished & signed in the appropriate place?	(Yes) No	
6. Was/were the person(s) who collected the samples clearly identified on the COC?	Yes (No)	
7. Did all bottles arrive in good condition (Unbroken)?	(Yes) No	
8. Could all bottle labels (ID/Date/Time) be reconciled with the COC?	(Yes) No	
9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp(Y/N)?		
10. Were correct bottle(s) used for the test(s) indicated?	(Yes) No	
11. Sufficient quantity received to perform indicated analyses?	(Yes) No	
12. Are these work share samples and all listed on the COC?	(Yes) No	
If yes, Questions 13-17 have been checked at the originating laboratory.		
13. Were all preserved sample(s) at the correct pH upon receipt?	Yes No NA	pH Strip Lot# HC447997
14. Were VOAs on the COC?	Yes No	
15. Were air bubbles >6 mm in any VOA vials? ● ← Larger than this.	Yes No NA	
16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot #_____	Yes No	
17. Was a LL Hg or Me Hg trip blank present? _____	Yes No	

Tests that are not checked for pH by Receiving:
VOAs
Oil and Grease
TOC

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other

Concerning _____

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES ☐ additional next page

Samples processed by:

_____
_____
_____
_____

19. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.
Sample(s) _____ were received in a broken container.
Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.
Time preserved: _____ Preservative(s) added/Lot number(s): _____

VOA Sample Preservation - Date/Time VOAs Frozen: _____

ORIGIN ID:HLOA (319) 277-2401
SAMPLE RECEIVING
EUROFINS TESTAMERICA
3019 VENTURE WAY

CEDAR FALLS, IA 50613
UNITED STATES US

SHIP DATE: 02OCT24
ACTWGT: 16.16 LB
CAD: 0870970/CAFE3808

BILL SENDER

TO SHIPPING/RECEIVING
EUROFINS ENVIRONMENT TESTING NORTH
180 S. VAN BUREN AVENUE

BARBERTON OH 44203
(330) 497-9396
REF: S310-98706

585C2/8041/C6C4

FedEx Express

TRK# 0201 4085 8612 6173

THU - 0. OCT 10:30A
PRIORI Y OVERNIGHT

XS CAKA

44203
OH-US CLE

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-291802-1

Login Number: 291802

List Source: Eurofins Cedar Falls

List Number: 1

Creator: Bunker, Xavier M

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Chris Oelkers
AECOM
501 Sycamore Street
Suite #222
Waterloo, Iowa 50703

Generated 10/18/2024 9:59:56 AM

JOB DESCRIPTION

Black Hawk County Landfill (IDNR)
Fall 2024

JOB NUMBER

310-291902-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



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10/18/2024 9:59:56 AM

Authorized for release by
Zach Bindert, Senior Project Manager
Zach.Bindert@et.eurofinsus.com
(319)595-2016

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Job ID: 310-291902-1 — Eurofins Cedar Falls

Job Narrative
310-291902-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 10/3/2024 9:25 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 5.6°C.

GC/MS VOA
Method 8260D: The continuing calibration verification (CCV) associated with batch 310-435270 recovered above the upper control limit for Methyl methacrylate (21.1%D). The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated sample is impacted: (CCV 310-435270/3).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
Method 6020B: The initial calibration verification (ICV) result for batch 310-435770 was above the upper control limit. The affected analytes are: Silver. Sample results were non-detects, and have been reported as qualified data.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Field Service / Mobile Lab
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Sample Summary

Client: AECOM
Job ID: 310-291902-1
Project/Site: Black Hawk County Landfill (IDNR)

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-291902-1	OW-114B	Ground Water	10/02/24 09:40	10/03/24 09:25
310-291902-2	OW-209B	Ground Water	10/02/24 10:30	10/03/24 09:25
310-291902-3	OW-209B-FD	Ground Water	10/02/24 10:30	10/03/24 09:25
310-291902-4	OW-212B	Groundwater	10/02/24 13:30	10/03/24 09:25
310-291902-5	Trip Blank	Water	10/02/24 06:00	10/03/24 09:25

Detection Summary

Client: AECOM
Job ID: 310-291902-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-114B — Lab Sample ID: 310-291902-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.697	J	2.00	0.530	ug/L	1		6020B	Total/NA
Barium	56.6		2.00	0.660	ug/L	1		6020B	Total/NA
Chromium	1.69	J	5.00	1.20	ug/L	1		6020B	Total/NA
Cobalt	1.92		0.500	0.170	ug/L	1		6020B	Total/NA
Nickel	14.0		5.00	2.10	ug/L	1		6020B	Total/NA
Thallium	1.50		1.00	0.570	ug/L	1		6020B	Total/NA
Field Turbidity	1.55				NTU	1		Field Sampling	Total/NA

Client Sample ID: OW-209B — Lab Sample ID: 310-291902-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	39.3		2.00	0.660	ug/L	1		6020B	Total/NA
Copper	3.13	J	5.00	1.80	ug/L	1		6020B	Total/NA
Nickel	7.39		5.00	2.10	ug/L	1		6020B	Total/NA
Total Suspended Solids	1.88		1.88	1.39	mg/L	1		I-3765-85	Total/NA
Field Turbidity	1.24				NTU	1		Field Sampling	Total/NA

Client Sample ID: OW-209B-FD — Lab Sample ID: 310-291902-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	39.9		2.00	0.660	ug/L	1		6020B	Total/NA
Copper	3.30	J	5.00	1.80	ug/L	1		6020B	Total/NA
Nickel	7.71		5.00	2.10	ug/L	1		6020B	Total/NA
Total Suspended Solids	2.00		1.88	1.39	mg/L	1		I-3765-85	Total/NA

Client Sample ID: OW-212B — Lab Sample ID: 310-291902-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	1.12	J	2.00	0.530	ug/L	1		6020B	Total/NA
Barium	22.8		2.00	0.660	ug/L	1		6020B	Total/NA
Cadmium	0.247		0.200	0.100	ug/L	1		6020B	Total/NA
Cobalt	20.6		0.500	0.170	ug/L	1		6020B	Total/NA
Copper	2.85	J	5.00	1.80	ug/L	1		6020B	Total/NA
Nickel	42.4		5.00	2.10	ug/L	1		6020B	Total/NA
Thallium	1.24		1.00	0.570	ug/L	1		6020B	Total/NA
Total Suspended Solids	2.88		1.88	1.39	mg/L	1		I-3765-85	Total/NA
Field Turbidity	4.68				NTU	1		Field Sampling	Total/NA

Client Sample ID: Trip Blank — Lab Sample ID: 310-291902-5

No Detections.

This Detection Summary does not include radiochemical test results.

Client: AECOM
Job ID: 310-291902-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-114B
Lab Sample ID: 310-291902-1
Date Collected: 10/02/24 09:40
Matrix: Ground Water
Date Received: 10/03/24 09:25

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			10/05/24 02:56	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			10/05/24 02:56	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			10/05/24 02:56	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			10/05/24 02:56	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			10/05/24 02:56	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			10/05/24 02:56	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			10/05/24 02:56	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			10/05/24 02:56	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			10/05/24 02:56	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			10/05/24 02:56	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			10/05/24 02:56	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			10/05/24 02:56	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			10/05/24 02:56	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			10/05/24 02:56	1
2-Hexanone	<2.00		10.0	2.00	ug/L			10/05/24 02:56	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			10/05/24 02:56	1
Acetone	<3.10		10.0	3.10	ug/L			10/05/24 02:56	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			10/05/24 02:56	1
Benzene	<0.220		0.500	0.220	ug/L			10/05/24 02:56	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			10/05/24 02:56	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			10/05/24 02:56	1
Bromoform	<0.780		5.00	0.780	ug/L			10/05/24 02:56	1
Bromomethane	<1.10		4.00	1.10	ug/L			10/05/24 02:56	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			10/05/24 02:56	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			10/05/24 02:56	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			10/05/24 02:56	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			10/05/24 02:56	1
Chloroethane	<0.790		4.00	0.790	ug/L			10/05/24 02:56	1
Chloroform	<1.30		3.00	1.30	ug/L			10/05/24 02:56	1
Chloromethane	<0.610		3.00	0.610	ug/L			10/05/24 02:56	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			10/10/24 16:54	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			10/05/24 02:56	1
Dibromomethane	<0.330		1.00	0.330	ug/L			10/05/24 02:56	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			10/05/24 02:56	1
Iodomethane	<7.00		10.0	7.00	ug/L			10/05/24 02:56	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			10/05/24 02:56	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			10/05/24 02:56	1
o-Xylene	<0.400		1.00	0.400	ug/L			10/05/24 02:56	1
Styrene	<0.370		1.00	0.370	ug/L			10/05/24 02:56	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			10/05/24 02:56	1
Toluene	<0.430		1.00	0.430	ug/L			10/05/24 02:56	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			10/05/24 02:56	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			10/05/24 02:56	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			10/05/24 02:56	1
Trichloroethene	<0.430		1.00	0.430	ug/L			10/05/24 02:56	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			10/05/24 02:56	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			10/05/24 02:56	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			10/05/24 02:56	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			10/05/24 02:56	1

Client: AECOM
Job ID: 310-291902-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-114B
Lab Sample ID: 310-291902-1
Date Collected: 10/02/24 09:40
Matrix: Ground Water
Date Received: 10/03/24 09:25

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*105*		*73 - 130*		*10/05/24 02:56*	*1*
Dibromofluoromethane (Surr)	*101*		*73 - 130*		*10/10/24 16:54*	*1*
Toluene-d8 (Surr)	*91*		*80 - 120*		*10/05/24 02:56*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*10/10/24 16:54*	*1*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*10/05/24 02:56*	*1*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*		*10/10/24 16:54*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		10/07/24 09:30	10/09/24 17:59	1
Arsenic	**0.697**	**J**	2.00	0.530	ug/L		10/07/24 09:30	10/09/24 17:59	1
Barium	**56.6**		2.00	0.660	ug/L		10/07/24 09:30	10/09/24 17:59	1
Beryllium	<0.330		1.00	0.330	ug/L		10/07/24 09:30	10/09/24 17:59	1
Cadmium	<0.100		0.200	0.100	ug/L		10/07/24 09:30	10/09/24 17:59	1
Chromium	**1.69**	**J**	5.00	1.20	ug/L		10/07/24 09:30	10/09/24 17:59	1
Cobalt	**1.92**		0.500	0.170	ug/L		10/07/24 09:30	10/09/24 17:59	1
Copper	<1.80		5.00	1.80	ug/L		10/07/24 09:30	10/09/24 17:59	1
Lead	<0.260		0.500	0.260	ug/L		10/07/24 09:30	10/09/24 17:59	1
Nickel	**14.0**		5.00	2.10	ug/L		10/07/24 09:30	10/09/24 17:59	1
Selenium	<1.40		5.00	1.40	ug/L		10/07/24 09:30	10/09/24 17:59	1
Silver	<0.500	^1+	1.00	0.500	ug/L		10/07/24 09:30	10/09/24 17:59	1
Thallium	**1.50**		1.00	0.570	ug/L		10/07/24 09:30	10/14/24 17:57	1
Vanadium	<1.10		5.00	1.10	ug/L		10/07/24 09:30	10/09/24 17:59	1
Zinc	<9.70		20.0	9.70	ug/L		10/07/24 09:30	10/09/24 17:59	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	<1.39		1.88	1.39	mg/L			10/04/24 11:09	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**1.55**				NTU			10/02/24 09:40	1

Client: AECOM
Job ID: 310-291902-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-209B
Lab Sample ID: 310-291902-2
Date Collected: 10/02/24 10:30
Matrix: Ground Water
Date Received: 10/03/24 09:25

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			10/05/24 03:18	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			10/05/24 03:18	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			10/05/24 03:18	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			10/05/24 03:18	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			10/05/24 03:18	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			10/05/24 03:18	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			10/05/24 03:18	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			10/05/24 03:18	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			10/05/24 03:18	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			10/05/24 03:18	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			10/05/24 03:18	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			10/05/24 03:18	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			10/05/24 03:18	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			10/05/24 03:18	1
2-Hexanone	<2.00		10.0	2.00	ug/L			10/05/24 03:18	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			10/05/24 03:18	1
Acetone	<3.10		10.0	3.10	ug/L			10/05/24 03:18	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			10/05/24 03:18	1
Benzene	<0.220		0.500	0.220	ug/L			10/05/24 03:18	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			10/05/24 03:18	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			10/05/24 03:18	1
Bromoform	<0.780		5.00	0.780	ug/L			10/05/24 03:18	1
Bromomethane	<1.10		4.00	1.10	ug/L			10/05/24 03:18	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			10/05/24 03:18	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			10/05/24 03:18	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			10/05/24 03:18	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			10/05/24 03:18	1
Chloroethane	<0.790		4.00	0.790	ug/L			10/05/24 03:18	1
Chloroform	<1.30		3.00	1.30	ug/L			10/05/24 03:18	1
Chloromethane	<0.610		3.00	0.610	ug/L			10/05/24 03:18	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			10/05/24 03:18	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			10/05/24 03:18	1
Dibromomethane	<0.330		1.00	0.330	ug/L			10/05/24 03:18	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			10/05/24 03:18	1
Iodomethane	<7.00		10.0	7.00	ug/L			10/05/24 03:18	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			10/05/24 03:18	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			10/05/24 03:18	1
o-Xylene	<0.400		1.00	0.400	ug/L			10/05/24 03:18	1
Styrene	<0.370		1.00	0.370	ug/L			10/05/24 03:18	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			10/05/24 03:18	1
Toluene	<0.430		1.00	0.430	ug/L			10/05/24 03:18	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			10/05/24 03:18	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			10/05/24 03:18	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			10/05/24 03:18	1
Trichloroethene	<0.430		1.00	0.430	ug/L			10/05/24 03:18	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			10/05/24 03:18	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			10/05/24 03:18	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			10/05/24 03:18	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			10/05/24 03:18	1

Client: AECOM
Job ID: 310-291902-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-209B
Lab Sample ID: 310-291902-2

Date Collected: 10/02/24 10:30
Matrix: Ground Water

Date Received: 10/03/24 09:25

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*105*		*73 - 130*		*10/05/24 03:18*	*1*
Toluene-d8 (Surr)	*92*		*80 - 120*		*10/05/24 03:18*	*1*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*10/05/24 03:18*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		10/07/24 09:30	10/09/24 18:01	1
Arsenic	<0.530		2.00	0.530	ug/L		10/07/24 09:30	10/09/24 18:01	1
Barium	**39.3**		2.00	0.660	ug/L		10/07/24 09:30	10/09/24 18:01	1
Beryllium	<0.330		1.00	0.330	ug/L		10/07/24 09:30	10/09/24 18:01	1
Cadmium	<0.100		0.200	0.100	ug/L		10/07/24 09:30	10/09/24 18:01	1
Chromium	<1.20		5.00	1.20	ug/L		10/07/24 09:30	10/09/24 18:01	1
Cobalt	<0.170		0.500	0.170	ug/L		10/07/24 09:30	10/09/24 18:01	1
Copper	**3.13**	**J**	5.00	1.80	ug/L		10/07/24 09:30	10/09/24 18:01	1
Lead	<0.260		0.500	0.260	ug/L		10/07/24 09:30	10/09/24 18:01	1
Nickel	**7.39**		5.00	2.10	ug/L		10/07/24 09:30	10/09/24 18:01	1
Selenium	<1.40		5.00	1.40	ug/L		10/07/24 09:30	10/09/24 18:01	1
Silver	<0.500	^1+	1.00	0.500	ug/L		10/07/24 09:30	10/09/24 18:01	1
Thallium	<0.570		1.00	0.570	ug/L		10/07/24 09:30	10/14/24 17:59	1
Vanadium	<1.10		5.00	1.10	ug/L		10/07/24 09:30	10/09/24 18:01	1
Zinc	<9.70		20.0	9.70	ug/L		10/07/24 09:30	10/09/24 18:01	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**1.88**		1.88	1.39	mg/L			10/04/24 11:09	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**1.24**				NTU			10/02/24 10:30	1

Client: AECOM
Job ID: 310-291902-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-209B-FD
Lab Sample ID: 310-291902-3
Date Collected: 10/02/24 10:30
Matrix: Ground Water
Date Received: 10/03/24 09:25

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			10/05/24 03:41	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			10/05/24 03:41	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			10/05/24 03:41	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			10/05/24 03:41	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			10/05/24 03:41	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			10/05/24 03:41	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			10/05/24 03:41	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			10/05/24 03:41	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			10/05/24 03:41	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			10/05/24 03:41	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			10/05/24 03:41	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			10/05/24 03:41	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			10/05/24 03:41	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			10/05/24 03:41	1
2-Hexanone	<2.00		10.0	2.00	ug/L			10/05/24 03:41	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			10/05/24 03:41	1
Acetone	<3.10		10.0	3.10	ug/L			10/05/24 03:41	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			10/05/24 03:41	1
Benzene	<0.220		0.500	0.220	ug/L			10/05/24 03:41	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			10/05/24 03:41	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			10/05/24 03:41	1
Bromoform	<0.780		5.00	0.780	ug/L			10/05/24 03:41	1
Bromomethane	<1.10		4.00	1.10	ug/L			10/05/24 03:41	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			10/05/24 03:41	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			10/05/24 03:41	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			10/05/24 03:41	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			10/05/24 03:41	1
Chloroethane	<0.790		4.00	0.790	ug/L			10/05/24 03:41	1
Chloroform	<1.30		3.00	1.30	ug/L			10/05/24 03:41	1
Chloromethane	<0.610		3.00	0.610	ug/L			10/05/24 03:41	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			10/05/24 03:41	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			10/05/24 03:41	1
Dibromomethane	<0.330		1.00	0.330	ug/L			10/05/24 03:41	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			10/05/24 03:41	1
Iodomethane	<7.00		10.0	7.00	ug/L			10/05/24 03:41	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			10/05/24 03:41	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			10/05/24 03:41	1
o-Xylene	<0.400		1.00	0.400	ug/L			10/05/24 03:41	1
Styrene	<0.370		1.00	0.370	ug/L			10/05/24 03:41	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			10/05/24 03:41	1
Toluene	<0.430		1.00	0.430	ug/L			10/05/24 03:41	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			10/05/24 03:41	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			10/05/24 03:41	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			10/05/24 03:41	1
Trichloroethene	<0.430		1.00	0.430	ug/L			10/05/24 03:41	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			10/05/24 03:41	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			10/05/24 03:41	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			10/05/24 03:41	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			10/05/24 03:41	1

Client: AECOM
Job ID: 310-291902-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-209B-FD
Lab Sample ID: 310-291902-3
Date Collected: 10/02/24 10:30
Matrix: Ground Water
Date Received: 10/03/24 09:25

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*106*		*73 - 130*		*10/05/24 03:41*	*1*
Toluene-d8 (Surr)	*92*		*80 - 120*		*10/05/24 03:41*	*1*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*10/05/24 03:41*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		10/07/24 09:30	10/09/24 18:03	1
Arsenic	<0.530		2.00	0.530	ug/L		10/07/24 09:30	10/09/24 18:03	1
Barium	**39.9**		2.00	0.660	ug/L		10/07/24 09:30	10/09/24 18:03	1
Beryllium	<0.330		1.00	0.330	ug/L		10/07/24 09:30	10/09/24 18:03	1
Cadmium	<0.100		0.200	0.100	ug/L		10/07/24 09:30	10/09/24 18:03	1
Chromium	<1.20		5.00	1.20	ug/L		10/07/24 09:30	10/09/24 18:03	1
Cobalt	<0.170		0.500	0.170	ug/L		10/07/24 09:30	10/09/24 18:03	1
Copper	**3.30**	**J**	5.00	1.80	ug/L		10/07/24 09:30	10/09/24 18:03	1
Lead	<0.260		0.500	0.260	ug/L		10/07/24 09:30	10/09/24 18:03	1
Nickel	**7.71**		5.00	2.10	ug/L		10/07/24 09:30	10/09/24 18:03	1
Selenium	<1.40		5.00	1.40	ug/L		10/07/24 09:30	10/09/24 18:03	1
Silver	<0.500	^1+	1.00	0.500	ug/L		10/07/24 09:30	10/09/24 18:03	1
Thallium	<0.570		1.00	0.570	ug/L		10/07/24 09:30	10/14/24 18:01	1
Vanadium	<1.10		5.00	1.10	ug/L		10/07/24 09:30	10/09/24 18:03	1
Zinc	<9.70		20.0	9.70	ug/L		10/07/24 09:30	10/09/24 18:03	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**2.00**		1.88	1.39	mg/L			10/04/24 11:09	1

Client: AECOM
Job ID: 310-291902-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-212B
Lab Sample ID: 310-291902-4
Date Collected: 10/02/24 13:30
Matrix: Groundwater
Date Received: 10/03/24 09:25

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			10/05/24 04:04	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			10/05/24 04:04	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			10/05/24 04:04	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			10/05/24 04:04	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			10/05/24 04:04	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			10/05/24 04:04	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			10/05/24 04:04	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			10/05/24 04:04	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			10/05/24 04:04	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			10/05/24 04:04	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			10/05/24 04:04	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			10/05/24 04:04	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			10/05/24 04:04	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			10/05/24 04:04	1
2-Hexanone	<2.00		10.0	2.00	ug/L			10/05/24 04:04	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			10/05/24 04:04	1
Acetone	<3.10		10.0	3.10	ug/L			10/05/24 04:04	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			10/05/24 04:04	1
Benzene	<0.220		0.500	0.220	ug/L			10/05/24 04:04	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			10/05/24 04:04	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			10/05/24 04:04	1
Bromoform	<0.780		5.00	0.780	ug/L			10/05/24 04:04	1
Bromomethane	<1.10		4.00	1.10	ug/L			10/05/24 04:04	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			10/05/24 04:04	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			10/05/24 04:04	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			10/05/24 04:04	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			10/05/24 04:04	1
Chloroethane	<0.790		4.00	0.790	ug/L			10/05/24 04:04	1
Chloroform	<1.30		3.00	1.30	ug/L			10/05/24 04:04	1
Chloromethane	<0.610		3.00	0.610	ug/L			10/05/24 04:04	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			10/05/24 04:04	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			10/05/24 04:04	1
Dibromomethane	<0.330		1.00	0.330	ug/L			10/05/24 04:04	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			10/05/24 04:04	1
Iodomethane	<7.00		10.0	7.00	ug/L			10/05/24 04:04	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			10/05/24 04:04	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			10/05/24 04:04	1
o-Xylene	<0.400		1.00	0.400	ug/L			10/05/24 04:04	1
Styrene	<0.370		1.00	0.370	ug/L			10/05/24 04:04	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			10/05/24 04:04	1
Toluene	<0.430		1.00	0.430	ug/L			10/05/24 04:04	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			10/05/24 04:04	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			10/05/24 04:04	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			10/05/24 04:04	1
Trichloroethene	<0.430		1.00	0.430	ug/L			10/05/24 04:04	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			10/05/24 04:04	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			10/05/24 04:04	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			10/05/24 04:04	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			10/05/24 04:04	1

Client: AECOM
Job ID: 310-291902-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-212B
Lab Sample ID: 310-291902-4

Date Collected: 10/02/24 13:30
Matrix: Groundwater
Date Received: 10/03/24 09:25

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*104*		*73 - 130*		*10/05/24 04:04*	*1*
Toluene-d8 (Surr)	*92*		*80 - 120*		*10/05/24 04:04*	*1*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*10/05/24 04:04*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		10/07/24 09:30	10/09/24 18:06	1
Arsenic	**1.12**	**J**	2.00	0.530	ug/L		10/07/24 09:30	10/09/24 18:06	1
Barium	**22.8**		2.00	0.660	ug/L		10/07/24 09:30	10/09/24 18:06	1
Beryllium	<0.330		1.00	0.330	ug/L		10/07/24 09:30	10/09/24 18:06	1
Cadmium	**0.247**		0.200	0.100	ug/L		10/07/24 09:30	10/09/24 18:06	1
Chromium	<1.20		5.00	1.20	ug/L		10/07/24 09:30	10/09/24 18:06	1
Cobalt	**20.6**		0.500	0.170	ug/L		10/07/24 09:30	10/09/24 18:06	1
Copper	**2.85**	**J**	5.00	1.80	ug/L		10/07/24 09:30	10/09/24 18:06	1
Lead	<0.260		0.500	0.260	ug/L		10/07/24 09:30	10/09/24 18:06	1
Nickel	**42.4**		5.00	2.10	ug/L		10/07/24 09:30	10/09/24 18:06	1
Selenium	<1.40		5.00	1.40	ug/L		10/07/24 09:30	10/09/24 18:06	1
Silver	<0.500	^1+	1.00	0.500	ug/L		10/07/24 09:30	10/09/24 18:06	1
Thallium	**1.24**		1.00	0.570	ug/L		10/07/24 09:30	10/14/24 18:04	1
Vanadium	<1.10		5.00	1.10	ug/L		10/07/24 09:30	10/09/24 18:06	1
Zinc	<9.70		20.0	9.70	ug/L		10/07/24 09:30	10/09/24 18:06	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**2.88**		1.88	1.39	mg/L			10/04/24 11:09	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**4.68**				NTU			10/02/24 13:30	1

Client: AECOM
Job ID: 310-291902-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Trip Blank
Lab Sample ID: 310-291902-5
Date Collected: 10/02/24 06:00
Matrix: Water
Date Received: 10/03/24 09:25

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			10/05/24 01:01	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			10/05/24 01:01	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			10/05/24 01:01	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			10/05/24 01:01	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			10/05/24 01:01	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			10/05/24 01:01	1
1,1-Dichloropropene	<0.430		1.00	0.430	ug/L			10/05/24 01:01	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			10/05/24 01:01	1
1,2,4-Trichlorobenzene	<0.750		5.00	0.750	ug/L			10/05/24 01:01	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			10/05/24 01:01	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			10/05/24 01:01	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			10/05/24 01:01	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			10/05/24 01:01	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			10/05/24 01:01	1
1,3-Dichlorobenzene	<0.300		1.00	0.300	ug/L			10/05/24 01:01	1
1,3-Dichloropropane	<0.400		1.00	0.400	ug/L			10/05/24 01:01	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			10/05/24 01:01	1
2,2-Dichloropropane	<0.690		4.00	0.690	ug/L			10/05/24 01:01	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			10/05/24 01:01	1
2-Hexanone	<2.00		10.0	2.00	ug/L			10/05/24 01:01	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			10/05/24 01:01	1
Acetone	<3.10		10.0	3.10	ug/L			10/05/24 01:01	1
Acrolein	<3.60		10.0	3.60	ug/L			10/05/24 01:01	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			10/05/24 01:01	1
Allyl chloride	<0.700		2.00	0.700	ug/L			10/05/24 01:01	1
Benzene	<0.220		0.500	0.220	ug/L			10/05/24 01:01	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			10/05/24 01:01	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			10/05/24 01:01	1
Bromoform	<0.780		5.00	0.780	ug/L			10/05/24 01:01	1
Bromomethane	<1.10		4.00	1.10	ug/L			10/05/24 01:01	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			10/05/24 01:01	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			10/05/24 01:01	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			10/05/24 01:01	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			10/05/24 01:01	1
Chloroethane	<0.790		4.00	0.790	ug/L			10/05/24 01:01	1
Chloroform	<1.30		3.00	1.30	ug/L			10/05/24 01:01	1
Chloromethane	<0.610		3.00	0.610	ug/L			10/05/24 01:01	1
Chloroprene	<0.230		1.00	0.230	ug/L			10/05/24 01:01	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			10/05/24 01:01	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			10/05/24 01:01	1
Dibromomethane	<0.330		1.00	0.330	ug/L			10/05/24 01:01	1
Dichlorodifluoromethane	<0.250		3.00	0.250	ug/L			10/05/24 01:01	1
Ethyl methacrylate	<0.680		2.00	0.680	ug/L			10/05/24 01:01	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			10/05/24 01:01	1
Iodomethane	<7.00		10.0	7.00	ug/L			10/05/24 01:01	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			10/05/24 01:01	1
Methacrylonitrile	<3.30		10.0	3.30	ug/L			10/05/24 01:01	1
Methyl methacrylate	<0.760		2.00	0.760	ug/L			10/05/24 01:01	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			10/05/24 01:01	1

Client: AECOM
Job ID: 310-291902-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Trip Blank
Lab Sample ID: 310-291902-5
Date Collected: 10/02/24 06:00
Matrix: Water
Date Received: 10/03/24 09:25

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<3.00		5.00	3.00	ug/L			10/05/24 01:01	1
o-Xylene	<0.400		1.00	0.400	ug/L			10/05/24 01:01	1
Propionitrile	<3.40		10.0	3.40	ug/L			10/05/24 01:01	1
Styrene	<0.370		1.00	0.370	ug/L			10/05/24 01:01	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			10/05/24 01:01	1
Toluene	<0.430		1.00	0.430	ug/L			10/05/24 01:01	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			10/05/24 01:01	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			10/05/24 01:01	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			10/05/24 01:01	1
Trichloroethene	<0.430		1.00	0.430	ug/L			10/05/24 01:01	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			10/05/24 01:01	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			10/05/24 01:01	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			10/05/24 01:01	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			10/05/24 01:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*105*		*73 - 130*		*10/05/24 01:01*	*1*
Toluene-d8 (Surr)	*92*		*80 - 120*		*10/05/24 01:01*	*1*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*10/05/24 01:01*	*1*

Definitions/Glossary

Client: AECOM
Job ID: 310-291902-1
Project/Site: Black Hawk County Landfill (IDNR)

Qualifiers

Metals

Qualifier	Qualifier Description
^1+	Initial Calibration Verification (ICV) is outside acceptance limits, high biased.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Surrogate Summary

Client: AECOM
Job ID: 310-291902-1
Project/Site: Black Hawk County Landfill (IDNR)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Ground Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-291902-1	OW-114B	105	91	98
310-291902-1	OW-114B	101	99	100
310-291902-1 MS	OW-114B	106	93	97
310-291902-1 MSD	OW-114B	105	93	98
310-291902-2	OW-209B	105	92	99
310-291902-3	OW-209B-FD	106	92	98

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Groundwater — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-291902-4	OW-212B	104	92	98

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-291902-5	Trip Blank	105	92	99
LCS 310-435270/6	Lab Control Sample	106	93	98
LCS 310-435270/7	Lab Control Sample	106	92	98
LCS 310-435841/6	Lab Control Sample	101	100	99
LCS 310-435841/7	Lab Control Sample	100	99	100
MB 310-435270/5	Method Blank	106	93	98
MB 310-435841/5	Method Blank	100	98	101

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 310-435270/5
Matrix: Water
Analysis Batch: 435270

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			10/04/24 23:53	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			10/04/24 23:53	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			10/04/24 23:53	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			10/04/24 23:53	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			10/04/24 23:53	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			10/04/24 23:53	1
1,1-Dichloropropene	<0.430		1.00	0.430	ug/L			10/04/24 23:53	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			10/04/24 23:53	1
1,2,4-Trichlorobenzene	<0.750		5.00	0.750	ug/L			10/04/24 23:53	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			10/04/24 23:53	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			10/04/24 23:53	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			10/04/24 23:53	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			10/04/24 23:53	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			10/04/24 23:53	1
1,3-Dichlorobenzene	<0.300		1.00	0.300	ug/L			10/04/24 23:53	1
1,3-Dichloropropane	<0.400		1.00	0.400	ug/L			10/04/24 23:53	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			10/04/24 23:53	1
2,2-Dichloropropane	<0.690		4.00	0.690	ug/L			10/04/24 23:53	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			10/04/24 23:53	1
2-Hexanone	<2.00		10.0	2.00	ug/L			10/04/24 23:53	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			10/04/24 23:53	1
Acetone	<3.10		10.0	3.10	ug/L			10/04/24 23:53	1
Acrolein	<3.60		10.0	3.60	ug/L			10/04/24 23:53	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			10/04/24 23:53	1
Allyl chloride	<0.700		2.00	0.700	ug/L			10/04/24 23:53	1
Benzene	<0.220		0.500	0.220	ug/L			10/04/24 23:53	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			10/04/24 23:53	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			10/04/24 23:53	1
Bromoform	<0.780		5.00	0.780	ug/L			10/04/24 23:53	1
Bromomethane	<1.10		4.00	1.10	ug/L			10/04/24 23:53	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			10/04/24 23:53	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			10/04/24 23:53	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			10/04/24 23:53	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			10/04/24 23:53	1
Chloroethane	<0.790		4.00	0.790	ug/L			10/04/24 23:53	1
Chloroform	<1.30		3.00	1.30	ug/L			10/04/24 23:53	1
Chloromethane	<0.610		3.00	0.610	ug/L			10/04/24 23:53	1
Chloroprene	<0.230		1.00	0.230	ug/L			10/04/24 23:53	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			10/04/24 23:53	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			10/04/24 23:53	1
Dibromomethane	<0.330		1.00	0.330	ug/L			10/04/24 23:53	1
Dichlorodifluoromethane	<0.250		3.00	0.250	ug/L			10/04/24 23:53	1
Ethyl methacrylate	<0.680		2.00	0.680	ug/L			10/04/24 23:53	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			10/04/24 23:53	1
Iodomethane	<7.00		10.0	7.00	ug/L			10/04/24 23:53	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			10/04/24 23:53	1
Methacrylonitrile	<3.30		10.0	3.30	ug/L			10/04/24 23:53	1
Methyl methacrylate	<0.760		2.00	0.760	ug/L			10/04/24 23:53	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-435270/5
Matrix: Water
Analysis Batch: 435270

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylene Chloride	<1.70		5.00	1.70	ug/L			10/04/24 23:53	1
Naphthalene	<3.00		5.00	3.00	ug/L			10/04/24 23:53	1
o-Xylene	<0.400		1.00	0.400	ug/L			10/04/24 23:53	1
Propionitrile	<3.40		10.0	3.40	ug/L			10/04/24 23:53	1
Styrene	<0.370		1.00	0.370	ug/L			10/04/24 23:53	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			10/04/24 23:53	1
Toluene	<0.430		1.00	0.430	ug/L			10/04/24 23:53	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			10/04/24 23:53	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			10/04/24 23:53	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			10/04/24 23:53	1
Trichloroethene	<0.430		1.00	0.430	ug/L			10/04/24 23:53	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			10/04/24 23:53	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			10/04/24 23:53	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			10/04/24 23:53	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			10/04/24 23:53	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*106*		*73 - 130*		*10/04/24 23:53*	*1*
Toluene-d8 (Surr)	*93*		*80 - 120*		*10/04/24 23:53*	*1*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*10/04/24 23:53*	*1*

Lab Sample ID: LCS 310-435270/6
Matrix: Water
Analysis Batch: 435270

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	20.0	20.23		ug/L		101	71 - 120
1,1,1-Trichloroethane	20.0	22.92		ug/L		115	73 - 129
1,1,2,2-Tetrachloroethane	20.0	20.33		ug/L		102	68 - 124
1,1,2-Trichloroethane	20.0	20.03		ug/L		100	73 - 123
1,1-Dichloroethane	20.0	22.63		ug/L		113	70 - 127
1,1-Dichloroethene	20.0	23.89		ug/L		119	63 - 132
1,1-Dichloropropene	20.0	23.68		ug/L		118	69 - 132
1,2,3-Trichloropropane	20.0	20.77		ug/L		104	65 - 127
1,2,4-Trichlorobenzene	20.0	19.21		ug/L		96	68 - 124
1,2-Dibromo-3-Chloropropane	20.0	19.74		ug/L		99	50 - 150
1,2-Dibromoethane (EDB)	20.0	20.10		ug/L		100	75 - 125
1,2-Dichlorobenzene	20.0	19.78		ug/L		99	74 - 120
1,2-Dichloroethane	20.0	22.19		ug/L		111	71 - 125
1,2-Dichloropropane	20.0	23.20		ug/L		116	73 - 124
1,3-Dichlorobenzene	20.0	19.60		ug/L		98	72 - 120
1,3-Dichloropropane	20.0	23.26		ug/L		116	72 - 125
1,4-Dichlorobenzene	20.0	19.65		ug/L		98	72 - 120
2,2-Dichloropropane	20.0	21.47		ug/L		107	50 - 150
2-Butanone (MEK)	40.0	47.69		ug/L		119	50 - 150
2-Hexanone	40.0	43.74		ug/L		109	60 - 140
4-Methyl-2-pentanone (MIBK)	40.0	42.95		ug/L		107	60 - 139
Acetone	40.0	46.53		ug/L		116	50 - 150

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-435270/6
Matrix: Water
Analysis Batch: 435270

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Acrolein			95.5	97.85		ug/L		102	49 - 150		
Acrylonitrile			200	223.6		ug/L		112	50 - 150		
Allyl chloride			20.0	23.34		ug/L		117	49 - 150		
Benzene			20.0	22.93		ug/L		115	72 - 124		
Bromochloromethane			20.0	22.48		ug/L		112	73 - 130		
Bromodichloromethane			20.0	21.41		ug/L		107	74 - 122		
Bromoform			20.0	19.17		ug/L		96	61 - 122		
Carbon disulfide			20.0	22.33		ug/L		112	59 - 135		
Carbon tetrachloride			20.0	23.10		ug/L		116	67 - 132		
Chlorobenzene			20.0	19.95		ug/L		100	76 - 120		
Chlorodibromomethane			20.0	19.83		ug/L		99	71 - 121		
Chloroform			20.0	22.61		ug/L		113	72 - 125		
Chloroprene			20.0	22.99		ug/L		115	69 - 133		
cis-1,2-Dichloroethene			20.0	22.81		ug/L		114	74 - 123		
cis-1,3-Dichloropropene			20.0	19.37		ug/L		97	71 - 125		
Dibromomethane			20.0	22.75		ug/L		114	74 - 125		
Ethyl methacrylate			20.0	21.39		ug/L		107	70 - 129		
Ethylbenzene			20.0	20.50		ug/L		102	74 - 122		
Iodomethane			20.0	14.34		ug/L		72	10 - 150		
Methacrylonitrile			200	228.7		ug/L		114	69 - 129		
Methyl methacrylate			40.0	47.76		ug/L		119	68 - 131		
Methylene Chloride			20.0	22.68		ug/L		113	50 - 150		
Naphthalene			20.0	19.60		ug/L		98	50 - 150		
Propionitrile			200	234.1		ug/L		117	63 - 135		
Styrene			20.0	20.78		ug/L		104	74 - 121		
Tetrachloroethene			20.0	20.55		ug/L		103	71 - 130		
Toluene			20.0	19.91		ug/L		100	74 - 123		
trans-1,2-Dichloroethene			20.0	23.19		ug/L		116	70 - 126		
trans-1,3-Dichloropropene			20.0	21.97		ug/L		110	69 - 123		
trans-1,4-Dichloro-2-butene			20.0	18.58		ug/L		93	50 - 150		
Trichloroethene			20.0	23.54		ug/L		118	72 - 126		
Vinyl acetate			40.0	43.05		ug/L		108	50 - 150		
Xylenes, Total			40.0	40.47		ug/L		101	73 - 123		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*106*		*73 - 130*
Toluene-d8 (Surr)	*93*		*80 - 120*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*

Lab Sample ID: LCS 310-435270/7
Matrix: Water
Analysis Batch: 435270

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Bromomethane			20.0	17.98		ug/L		90	23 - 150		
Chloroethane			20.0	22.57		ug/L		113	54 - 136		
Chloromethane			20.0	19.99		ug/L		100	38 - 150		
Dichlorodifluoromethane			20.0	20.82		ug/L		104	39 - 150		

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-435270/7
Matrix: Water
Analysis Batch: 435270

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Trichlorofluoromethane			20.0	22.58		ug/L		113	54 - 149		
Vinyl chloride			20.0	22.31		ug/L		112	56 - 140		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*106*		*73 - 130*
Toluene-d8 (Surr)	*92*		*80 - 120*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*

Lab Sample ID: 310-291902-1 MS
Matrix: Ground Water
Analysis Batch: 435270

Client Sample ID: OW-114B
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
1,1,1,2-Tetrachloroethane	<0.380		20.0	18.28		ug/L		91	55 - 130		
1,1,1-Trichloroethane	<0.190		20.0	20.63		ug/L		103	52 - 130		
1,1,2,2-Tetrachloroethane	<0.470		20.0	19.09		ug/L		95	54 - 130		
1,1,2-Trichloroethane	<0.450		20.0	18.53		ug/L		93	58 - 130		
1,1-Dichloroethane	<0.220		20.0	21.32		ug/L		107	49 - 130		
1,1-Dichloroethene	<0.560		20.0	21.57		ug/L		108	37 - 132		
1,1-Dichloropropene	<0.430		20.0	21.25		ug/L		106	50 - 132		
1,2,3-Trichloropropane	<0.590		20.0	19.95		ug/L		100	49 - 130		
1,2,4-Trichlorobenzene	<0.750		20.0	17.46		ug/L		87	55 - 130		
1,2-Dibromo-3-Chloropropane	<1.20		20.0	18.47		ug/L		92	38 - 150		
1,2-Dibromoethane (EDB)	<0.340		20.0	18.72		ug/L		94	60 - 130		
1,2-Dichlorobenzene	<0.370		20.0	17.99		ug/L		90	59 - 130		
1,2-Dichloroethane	<0.390		20.0	21.41		ug/L		107	51 - 130		
1,2-Dichloropropane	<0.270		20.0	22.00		ug/L		110	57 - 130		
1,3-Dichlorobenzene	<0.300		20.0	17.81		ug/L		89	57 - 130		
1,3-Dichloropropane	<0.400		20.0	22.00		ug/L		110	56 - 130		
1,4-Dichlorobenzene	<0.230		20.0	17.88		ug/L		89	57 - 130		
2,2-Dichloropropane	<0.690		20.0	17.77		ug/L		89	25 - 150		
2-Butanone (MEK)	<2.10		40.0	48.57		ug/L		121	38 - 150		
2-Hexanone	<2.00		40.0	42.31		ug/L		106	46 - 140		
4-Methyl-2-pentanone (MIBK)	<2.10		40.0	41.19		ug/L		103	47 - 139		
Acetone	<3.10		40.0	45.97		ug/L		115	31 - 150		
Acrolein	<3.60		95.5	106.1		ug/L		111	25 - 150		
Acrylonitrile	<2.20		200	218.4		ug/L		109	40 - 150		
Allyl chloride	<0.700		20.0	21.26		ug/L		106	28 - 150		
Benzene	<0.220		20.0	21.54		ug/L		108	46 - 130		
Bromochloromethane	<0.540		20.0	21.96		ug/L		110	57 - 130		
Bromodichloromethane	<0.390		20.0	20.27		ug/L		101	57 - 130		
Bromoform	<0.780		20.0	17.52		ug/L		88	44 - 130		
Carbon disulfide	<0.450		20.0	21.37		ug/L		107	38 - 135		
Carbon tetrachloride	<0.650		20.0	20.43		ug/L		102	45 - 132		
Chlorobenzene	<0.400		20.0	18.35		ug/L		92	59 - 130		
Chlorodibromomethane	<0.750		20.0	18.20		ug/L		91	54 - 130		
Chloroform	<1.30		20.0	21.16		ug/L		106	51 - 130		
Chloroprene	<0.230		20.0	21.19		ug/L		106	43 - 133		

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 310-291902-1 MS
Matrix: Ground Water
Analysis Batch: 435270

Client Sample ID: OW-114B
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
cis-1,2-Dichloroethene	0.469	J	20.0	21.73		ug/L		106	45 - 130
cis-1,3-Dichloropropene	<0.250		20.0	17.52		ug/L		88	53 - 130
Dibromomethane	<0.330		20.0	21.90		ug/L		110	59 - 130
Ethyl methacrylate	<0.680		20.0	19.89		ug/L		99	54 - 130
Ethylbenzene	<0.310		20.0	18.42		ug/L		92	45 - 130
Iodomethane	<7.00		20.0	15.47		ug/L		77	10 - 150
Methacrylonitrile	<3.30		200	222.7		ug/L		111	55 - 130
Methyl methacrylate	<0.760		40.0	44.67		ug/L		112	44 - 139
Methylene Chloride	<1.70		20.0	21.53		ug/L		108	37 - 150
Naphthalene	<3.00		20.0	18.37		ug/L		92	40 - 150
Propionitrile	<3.40		200	224.6		ug/L		112	49 - 135
Styrene	<0.370		20.0	19.13		ug/L		96	47 - 130
Tetrachloroethene	<0.480		20.0	18.11		ug/L		91	47 - 130
Toluene	<0.430		20.0	18.39		ug/L		92	51 - 130
trans-1,2-Dichloroethene	<0.270		20.0	21.82		ug/L		109	48 - 130
trans-1,3-Dichloropropene	<0.560		20.0	19.71		ug/L		99	50 - 130
trans-1,4-Dichloro-2-butene	<1.10		20.0	17.04		ug/L		85	26 - 150
Trichloroethene	<0.430		20.0	21.51		ug/L		108	51 - 130
Vinyl acetate	<2.50		40.0	38.60		ug/L		96	29 - 150
Xylenes, Total	<0.400		40.0	37.06		ug/L		93	43 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*106*		*73 - 130*
Toluene-d8 (Surr)	*93*		*80 - 120*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*

Lab Sample ID: 310-291902-1 MSD
Matrix: Ground Water
Analysis Batch: 435270

Client Sample ID: OW-114B
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	<0.380		20.0	18.23		ug/L		91	55 - 130	0	20
1,1,1-Trichloroethane	<0.190		20.0	20.39		ug/L		102	52 - 130	1	20
1,1,2,2-Tetrachloroethane	<0.470		20.0	19.16		ug/L		96	54 - 130	0	20
1,1,2-Trichloroethane	<0.450		20.0	18.57		ug/L		93	58 - 130	0	20
1,1-Dichloroethane	<0.220		20.0	21.04		ug/L		105	49 - 130	1	20
1,1-Dichloroethene	<0.560		20.0	21.26		ug/L		106	37 - 132	1	26
1,1-Dichloropropene	<0.430		20.0	20.76		ug/L		104	50 - 132	2	20
1,2,3-Trichloropropane	<0.590		20.0	19.60		ug/L		98	49 - 130	2	26
1,2,4-Trichlorobenzene	<0.750		20.0	18.81		ug/L		94	55 - 130	7	20
1,2-Dibromo-3-Chloropropane	<1.20		20.0	18.64		ug/L		93	38 - 150	1	20
1,2-Dibromoethane (EDB)	<0.340		20.0	18.53		ug/L		93	60 - 130	1	20
1,2-Dichlorobenzene	<0.370		20.0	18.42		ug/L		92	59 - 130	2	20
1,2-Dichloroethane	<0.390		20.0	21.17		ug/L		106	51 - 130	1	20
1,2-Dichloropropane	<0.270		20.0	21.62		ug/L		108	57 - 130	2	20
1,3-Dichlorobenzene	<0.300		20.0	18.09		ug/L		90	57 - 130	2	20
1,3-Dichloropropane	<0.400		20.0	21.55		ug/L		108	56 - 130	2	20
1,4-Dichlorobenzene	<0.230		20.0	18.08		ug/L		90	57 - 130	1	20

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 310-291902-1 MSD
Client Sample ID: OW-114B
Matrix: Ground Water
Prep Type: Total/NA
Analysis Batch: 435270

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,2-Dichloropropane	<0.690		20.0	17.50		ug/L		87	25 - 150	2	25
2-Butanone (MEK)	<2.10		40.0	47.84		ug/L		120	38 - 150	2	20
2-Hexanone	<2.00		40.0	41.64		ug/L		104	46 - 140	2	20
4-Methyl-2-pentanone (MIBK)	<2.10		40.0	41.23		ug/L		103	47 - 139	0	20
Acetone	<3.10		40.0	46.98		ug/L		117	31 - 150	2	29
Acrolein	<3.60		95.5	106.8		ug/L		112	25 - 150	1	31
Acrylonitrile	<2.20		200	220.3		ug/L		110	40 - 150	1	20
Allyl chloride	<0.700		20.0	21.20		ug/L		106	28 - 150	0	35
Benzene	<0.220		20.0	20.99		ug/L		105	46 - 130	3	20
Bromochloromethane	<0.540		20.0	21.27		ug/L		106	57 - 130	3	20
Bromodichloromethane	<0.390		20.0	20.14		ug/L		101	57 - 130	1	20
Bromoform	<0.780		20.0	17.50		ug/L		88	44 - 130	0	20
Carbon disulfide	<0.450		20.0	19.87		ug/L		99	38 - 135	7	30
Carbon tetrachloride	<0.650		20.0	20.02		ug/L		100	45 - 132	2	20
Chlorobenzene	<0.400		20.0	18.14		ug/L		91	59 - 130	1	20
Chlorodibromomethane	<0.750		20.0	18.17		ug/L		91	54 - 130	0	20
Chloroform	<1.30		20.0	21.02		ug/L		105	51 - 130	1	20
Chloroprene	<0.230		20.0	20.50		ug/L		103	43 - 133	3	20
cis-1,2-Dichloroethene	0.469	J	20.0	21.15		ug/L		103	45 - 130	3	20
cis-1,3-Dichloropropene	<0.250		20.0	17.46		ug/L		87	53 - 130	0	20
Dibromomethane	<0.330		20.0	21.17		ug/L		106	59 - 130	3	20
Ethyl methacrylate	<0.680		20.0	19.81		ug/L		99	54 - 130	0	20
Ethylbenzene	<0.310		20.0	18.37		ug/L		92	45 - 130	0	20
Iodomethane	<7.00		20.0	16.73		ug/L		84	10 - 150	8	35
Methacrylonitrile	<3.30		200	220.5		ug/L		110	55 - 130	1	20
Methyl methacrylate	<0.760		40.0	44.97		ug/L		112	44 - 139	1	20
Methylene Chloride	<1.70		20.0	21.43		ug/L		107	37 - 150	0	24
Naphthalene	<3.00		20.0	19.08		ug/L		95	40 - 150	4	30
Propionitrile	<3.40		200	226.7		ug/L		113	49 - 135	1	20
Styrene	<0.370		20.0	18.91		ug/L		95	47 - 130	1	20
Tetrachloroethene	<0.480		20.0	17.94		ug/L		90	47 - 130	1	20
Toluene	<0.430		20.0	18.07		ug/L		90	51 - 130	2	20
trans-1,2-Dichloroethene	<0.270		20.0	21.27		ug/L		106	48 - 130	3	22
trans-1,3-Dichloropropene	<0.560		20.0	19.75		ug/L		99	50 - 130	0	20
trans-1,4-Dichloro-2-butene	<1.10		20.0	17.31		ug/L		87	26 - 150	2	23
Trichloroethene	<0.430		20.0	21.07		ug/L		105	51 - 130	2	20
Vinyl acetate	<2.50		40.0	39.08		ug/L		98	29 - 150	1	23
Xylenes, Total	<0.400		40.0	36.68		ug/L		92	43 - 130	1	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*105*		*73 - 130*
Toluene-d8 (Surr)	*93*		*80 - 120*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-435841/5
Matrix: Water
Analysis Batch: 435841

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			10/10/24 13:52	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			10/10/24 13:52	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			10/10/24 13:52	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			10/10/24 13:52	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			10/10/24 13:52	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			10/10/24 13:52	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			10/10/24 13:52	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			10/10/24 13:52	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			10/10/24 13:52	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			10/10/24 13:52	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			10/10/24 13:52	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			10/10/24 13:52	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			10/10/24 13:52	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			10/10/24 13:52	1
2-Hexanone	<2.00		10.0	2.00	ug/L			10/10/24 13:52	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			10/10/24 13:52	1
Acetone	<3.10		10.0	3.10	ug/L			10/10/24 13:52	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			10/10/24 13:52	1
Benzene	<0.220		0.500	0.220	ug/L			10/10/24 13:52	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			10/10/24 13:52	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			10/10/24 13:52	1
Bromoform	<0.780		5.00	0.780	ug/L			10/10/24 13:52	1
Bromomethane	<1.10		4.00	1.10	ug/L			10/10/24 13:52	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			10/10/24 13:52	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			10/10/24 13:52	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			10/10/24 13:52	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			10/10/24 13:52	1
Chloroethane	<0.790		4.00	0.790	ug/L			10/10/24 13:52	1
Chloroform	<1.30		3.00	1.30	ug/L			10/10/24 13:52	1
Chloromethane	<0.610		3.00	0.610	ug/L			10/10/24 13:52	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			10/10/24 13:52	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			10/10/24 13:52	1
Dibromomethane	<0.330		1.00	0.330	ug/L			10/10/24 13:52	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			10/10/24 13:52	1
Iodomethane	<7.00		10.0	7.00	ug/L			10/10/24 13:52	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			10/10/24 13:52	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			10/10/24 13:52	1
o-Xylene	<0.400		1.00	0.400	ug/L			10/10/24 13:52	1
Styrene	<0.370		1.00	0.370	ug/L			10/10/24 13:52	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			10/10/24 13:52	1
Toluene	<0.430		1.00	0.430	ug/L			10/10/24 13:52	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			10/10/24 13:52	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			10/10/24 13:52	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			10/10/24 13:52	1
Trichloroethene	<0.430		1.00	0.430	ug/L			10/10/24 13:52	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			10/10/24 13:52	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			10/10/24 13:52	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			10/10/24 13:52	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-435841/5
Matrix: Water
Analysis Batch: 435841

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	<0.400		3.00	0.400	ug/L			10/10/24 13:52	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*100*		*73 - 130*		*10/10/24 13:52*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*10/10/24 13:52*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*10/10/24 13:52*	*1*

Lab Sample ID: LCS 310-435841/6
Matrix: Water
Analysis Batch: 435841

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	20.0	21.64		ug/L		108	71 - 120
1,1,1-Trichloroethane	20.0	21.36		ug/L		107	73 - 129
1,1,2,2-Tetrachloroethane	20.0	21.73		ug/L		109	68 - 124
1,1,2-Trichloroethane	20.0	21.87		ug/L		109	73 - 123
1,1-Dichloroethane	20.0	20.51		ug/L		103	70 - 127
1,1-Dichloroethene	20.0	20.61		ug/L		103	63 - 132
1,2,3-Trichloropropane	20.0	21.52		ug/L		108	65 - 127
1,2-Dibromo-3-Chloropropane	20.0	20.76		ug/L		104	50 - 150
1,2-Dibromoethane (EDB)	20.0	21.25		ug/L		106	75 - 125
1,2-Dichlorobenzene	20.0	21.41		ug/L		107	74 - 120
1,2-Dichloroethane	20.0	20.58		ug/L		103	71 - 125
1,2-Dichloropropane	20.0	20.66		ug/L		103	73 - 124
1,4-Dichlorobenzene	20.0	21.25		ug/L		106	72 - 120
2-Butanone (MEK)	40.0	41.95		ug/L		105	50 - 150
2-Hexanone	40.0	44.19		ug/L		110	60 - 140
4-Methyl-2-pentanone (MIBK)	40.0	43.46		ug/L		109	60 - 139
Acetone	40.0	40.85		ug/L		102	50 - 150
Acrylonitrile	200	201.9		ug/L		101	50 - 150
Benzene	20.0	20.74		ug/L		104	72 - 124
Bromochloromethane	20.0	20.66		ug/L		103	73 - 130
Bromodichloromethane	20.0	21.17		ug/L		106	74 - 122
Bromoform	20.0	21.33		ug/L		107	61 - 122
Carbon disulfide	20.0	20.04		ug/L		100	59 - 135
Carbon tetrachloride	20.0	21.32		ug/L		107	67 - 132
Chlorobenzene	20.0	21.47		ug/L		107	76 - 120
Chlorodibromomethane	20.0	21.44		ug/L		107	71 - 121
Chloroform	20.0	20.10		ug/L		100	72 - 125
cis-1,2-Dichloroethene	20.0	20.79		ug/L		104	74 - 123
cis-1,3-Dichloropropene	20.0	21.54		ug/L		108	71 - 125
Dibromomethane	20.0	20.72		ug/L		104	74 - 125
Ethylbenzene	20.0	22.07		ug/L		110	74 - 122
Iodomethane	20.0	14.61		ug/L		73	10 - 150
Methylene Chloride	20.0	19.87		ug/L		99	50 - 150
Styrene	20.0	22.41		ug/L		112	74 - 121
Tetrachloroethene	20.0	21.95		ug/L		110	71 - 130
Toluene	20.0	21.08		ug/L		105	74 - 123

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-435841/6
Matrix: Water
Analysis Batch: 435841

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
trans-1,2-Dichloroethene	20.0	20.80		ug/L		104	70 - 126
trans-1,3-Dichloropropene	20.0	21.67		ug/L		108	69 - 123
trans-1,4-Dichloro-2-butene	20.0	20.12		ug/L		101	50 - 150
Trichloroethene	20.0	21.20		ug/L		106	72 - 126
Vinyl acetate	40.0	43.17		ug/L		108	50 - 150
Xylenes, Total	40.0	43.80		ug/L		110	73 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*101*		*73 - 130*
Toluene-d8 (Surr)	*100*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*

Lab Sample ID: LCS 310-435841/7
Matrix: Water
Analysis Batch: 435841

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	16.21		ug/L		81	23 - 150
Chloroethane	20.0	19.65		ug/L		98	54 - 136
Chloromethane	20.0	20.27		ug/L		101	38 - 150
Trichlorofluoromethane	20.0	21.81		ug/L		109	54 - 149
Vinyl chloride	20.0	20.72		ug/L		104	56 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*100*		*73 - 130*
Toluene-d8 (Surr)	*99*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-435317/1-A
Matrix: Water
Analysis Batch: 435770

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 435317

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		10/07/24 09:30	10/09/24 17:02	1
Arsenic	<0.530		2.00	0.530	ug/L		10/07/24 09:30	10/09/24 17:02	1
Barium	<0.660		2.00	0.660	ug/L		10/07/24 09:30	10/09/24 17:02	1
Beryllium	<0.330		1.00	0.330	ug/L		10/07/24 09:30	10/09/24 17:02	1
Cadmium	<0.100		0.200	0.100	ug/L		10/07/24 09:30	10/09/24 17:02	1
Chromium	<1.20		5.00	1.20	ug/L		10/07/24 09:30	10/09/24 17:02	1
Cobalt	<0.170		0.500	0.170	ug/L		10/07/24 09:30	10/09/24 17:02	1
Copper	<1.80		5.00	1.80	ug/L		10/07/24 09:30	10/09/24 17:02	1
Lead	<0.260		0.500	0.260	ug/L		10/07/24 09:30	10/09/24 17:02	1
Nickel	<2.10		5.00	2.10	ug/L		10/07/24 09:30	10/09/24 17:02	1
Selenium	<1.40		5.00	1.40	ug/L		10/07/24 09:30	10/09/24 17:02	1
Silver	<0.500	^1+	1.00	0.500	ug/L		10/07/24 09:30	10/09/24 17:02	1
Vanadium	<1.10		5.00	1.10	ug/L		10/07/24 09:30	10/09/24 17:02	1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 310-435317/1-A
Matrix: Water
Analysis Batch: 435770
Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 435317

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	<9.70		20.0	9.70	ug/L		10/07/24 09:30	10/09/24 17:02	1

Lab Sample ID: MB 310-435317/1-A
Matrix: Water
Analysis Batch: 436234
Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 435317

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Thallium	<0.570		1.00	0.570	ug/L		10/07/24 09:30	10/14/24 17:27	1

Lab Sample ID: LCS 310-435317/2-A
Matrix: Water
Analysis Batch: 435770
Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 435317

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	200	237.1		ug/L		119	80 - 120
Arsenic	200	224.2		ug/L		112	80 - 120
Barium	100	109.2		ug/L		109	80 - 120
Beryllium	100	103.0		ug/L		103	80 - 120
Cadmium	100	104.7		ug/L		105	80 - 120
Chromium	100	100.8		ug/L		101	80 - 120
Cobalt	100	116.8		ug/L		117	80 - 120
Copper	200	223.3		ug/L		112	80 - 120
Lead	200	221.4		ug/L		111	80 - 120
Nickel	200	215.1		ug/L		108	80 - 120
Selenium	400	420.0		ug/L		105	80 - 120
Silver	100	117.3	^1+	ug/L		117	80 - 120
Vanadium	100	99.27		ug/L		99	80 - 120
Zinc	200	193.9		ug/L		97	80 - 120

Lab Sample ID: LCS 310-435317/2-A
Matrix: Water
Analysis Batch: 436234
Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 435317

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Thallium	100	82.12		ug/L		82	80 - 120

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: MB 310-435272/1
Matrix: Water
Analysis Batch: 435272
Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<3.70		5.00	3.70	mg/L			10/04/24 11:09	1

Client: AECOM
Job ID: 310-291902-1
Project/Site: Black Hawk County Landfill (IDNR)

Method: I-3765-85 - Residue, Non-filterable (TSS) (Continued)

Lab Sample ID: LCS 310-435272/2
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 435272

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Suspended Solids			100	97.00		mg/L		97	81 - 116		

GC/MS VOA

Analysis Batch: 435270

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-291902-1	OW-114B	Total/NA	Ground Water	8260D	
310-291902-2	OW-209B	Total/NA	Ground Water	8260D	
310-291902-3	OW-209B-FD	Total/NA	Ground Water	8260D	
310-291902-4	OW-212B	Total/NA	Groundwater	8260D	
310-291902-5	Trip Blank	Total/NA	Water	8260D	
MB 310-435270/5	Method Blank	Total/NA	Water	8260D	
LCS 310-435270/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-435270/7	Lab Control Sample	Total/NA	Water	8260D	
310-291902-1 MS	OW-114B	Total/NA	Ground Water	8260D	
310-291902-1 MSD	OW-114B	Total/NA	Ground Water	8260D	

Analysis Batch: 435841

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-291902-1	OW-114B	Total/NA	Ground Water	8260D	
MB 310-435841/5	Method Blank	Total/NA	Water	8260D	
LCS 310-435841/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-435841/7	Lab Control Sample	Total/NA	Water	8260D	

Metals

Prep Batch: 435317

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-291902-1	OW-114B	Total/NA	Ground Water	3005A	
310-291902-2	OW-209B	Total/NA	Ground Water	3005A	
310-291902-3	OW-209B-FD	Total/NA	Ground Water	3005A	
310-291902-4	OW-212B	Total/NA	Groundwater	3005A	
MB 310-435317/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-435317/2-A	Lab Control Sample	Total/NA	Water	3005A	

Analysis Batch: 435770

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-291902-1	OW-114B	Total/NA	Ground Water	6020B	435317
310-291902-2	OW-209B	Total/NA	Ground Water	6020B	435317
310-291902-3	OW-209B-FD	Total/NA	Ground Water	6020B	435317
310-291902-4	OW-212B	Total/NA	Groundwater	6020B	435317
MB 310-435317/1-A	Method Blank	Total/NA	Water	6020B	435317
LCS 310-435317/2-A	Lab Control Sample	Total/NA	Water	6020B	435317

Analysis Batch: 436234

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-291902-1	OW-114B	Total/NA	Ground Water	6020B	435317
310-291902-2	OW-209B	Total/NA	Ground Water	6020B	435317
310-291902-3	OW-209B-FD	Total/NA	Ground Water	6020B	435317
310-291902-4	OW-212B	Total/NA	Groundwater	6020B	435317
MB 310-435317/1-A	Method Blank	Total/NA	Water	6020B	435317
LCS 310-435317/2-A	Lab Control Sample	Total/NA	Water	6020B	435317

General Chemistry

Analysis Batch: 435272

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-291902-1	OW-114B	Total/NA	Ground Water	I-3765-85	

General Chemistry (Continued)

Analysis Batch: 435272 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-291902-2	OW-209B	Total/NA	Ground Water	I-3765-85	
310-291902-3	OW-209B-FD	Total/NA	Ground Water	I-3765-85	
310-291902-4	OW-212B	Total/NA	Groundwater	I-3765-85	
MB 310-435272/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-435272/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Field Service / Mobile Lab

Analysis Batch: 435786

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-291902-1	OW-114B	Total/NA	Ground Water	Field Sampling	
310-291902-2	OW-209B	Total/NA	Ground Water	Field Sampling	
310-291902-4	OW-212B	Total/NA	Groundwater	Field Sampling	

Lab Chronicle

Client: AECOM
Job ID: 310-291902-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-114B
Lab Sample ID: 310-291902-1
Date Collected: 10/02/24 09:40
Matrix: Ground Water
Date Received: 10/03/24 09:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	435270	FE5V	EET CF	10/05/24 02:56
Total/NA	Analysis	8260D		1	435841	WSE8	EET CF	10/10/24 16:54
Total/NA	Prep	3005A			435317	F5MW	EET CF	10/07/24 09:30
Total/NA	Analysis	6020B		1	435770	NFT2	EET CF	10/09/24 17:59
Total/NA	Prep	3005A			435317	F5MW	EET CF	10/07/24 09:30
Total/NA	Analysis	6020B		1	436234	NFT2	EET CF	10/14/24 17:57
Total/NA	Analysis	I-3765-85		1	435272	DGU1	EET CF	10/04/24 11:09
Total/NA	Analysis	Field Sampling		1	435786	BJ0R	EET CF	10/02/24 09:40

Client Sample ID: OW-209B
Lab Sample ID: 310-291902-2
Date Collected: 10/02/24 10:30
Matrix: Ground Water
Date Received: 10/03/24 09:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	435270	FE5V	EET CF	10/05/24 03:18
Total/NA	Prep	3005A			435317	F5MW	EET CF	10/07/24 09:30
Total/NA	Analysis	6020B		1	435770	NFT2	EET CF	10/09/24 18:01
Total/NA	Prep	3005A			435317	F5MW	EET CF	10/07/24 09:30
Total/NA	Analysis	6020B		1	436234	NFT2	EET CF	10/14/24 17:59
Total/NA	Analysis	I-3765-85		1	435272	DGU1	EET CF	10/04/24 11:09
Total/NA	Analysis	Field Sampling		1	435786	BJ0R	EET CF	10/02/24 10:30

Client Sample ID: OW-209B-FD
Lab Sample ID: 310-291902-3
Date Collected: 10/02/24 10:30
Matrix: Ground Water
Date Received: 10/03/24 09:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	435270	FE5V	EET CF	10/05/24 03:41
Total/NA	Prep	3005A			435317	F5MW	EET CF	10/07/24 09:30
Total/NA	Analysis	6020B		1	435770	NFT2	EET CF	10/09/24 18:03
Total/NA	Prep	3005A			435317	F5MW	EET CF	10/07/24 09:30
Total/NA	Analysis	6020B		1	436234	NFT2	EET CF	10/14/24 18:01
Total/NA	Analysis	I-3765-85		1	435272	DGU1	EET CF	10/04/24 11:09

Client Sample ID: OW-212B
Lab Sample ID: 310-291902-4
Date Collected: 10/02/24 13:30
Matrix: Groundwater
Date Received: 10/03/24 09:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	435270	FE5V	EET CF	10/05/24 04:04
Total/NA	Prep	3005A			435317	F5MW	EET CF	10/07/24 09:30
Total/NA	Analysis	6020B		1	435770	NFT2	EET CF	10/09/24 18:06
Total/NA	Prep	3005A			435317	F5MW	EET CF	10/07/24 09:30
Total/NA	Analysis	6020B		1	436234	NFT2	EET CF	10/14/24 18:04

Lab Chronicle

Client: AECOM
Job ID: 310-291902-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-212B
Lab Sample ID: 310-291902-4
Date Collected: 10/02/24 13:30
Matrix: Groundwater
Date Received: 10/03/24 09:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	I-3765-85		1	435272	DGU1	EET CF	10/04/24 11:09
Total/NA	Analysis	Field Sampling		1	435786	BJ0R	EET CF	10/02/24 13:30

Client Sample ID: Trip Blank
Lab Sample ID: 310-291902-5
Date Collected: 10/02/24 06:00
Matrix: Water
Date Received: 10/03/24 09:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	435270	FE5V	EET CF	10/05/24 01:01

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Accreditation/Certification Summary

Client: AECOM
Job ID: 310-291902-1
Project/Site: Black Hawk County Landfill (IDNR)

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8260D		Ground Water	m,p-Xylene
8260D		Ground Water	o-Xylene
8260D		Groundwater	m,p-Xylene
8260D		Groundwater	o-Xylene
8260D		Water	1,2,4-Trichlorobenzene
8260D		Water	Allyl chloride
8260D		Water	Ethyl methacrylate
8260D		Water	m,p-Xylene
8260D		Water	o-Xylene
Field Sampling		Ground Water	Field Turbidity
Field Sampling		Groundwater	Field Turbidity

Method Summary

Client: AECOM
Job ID: 310-291902-1
Project/Site: Black Hawk County Landfill (IDNR)

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
Field Sampling	Field Sampling	EPA	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
5030B	Purge and Trap	SW846	EET CF

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

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310-291902 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: AECOM

City/State: CITY Waterloo STATE IA Project: BHC IDNR

Receipt Information

Date/Time Received: DATE 10/3/24 TIME 0925 Received By: TO

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ Lab Field Services ☑ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler?	☐ Yes	☑ No	*If yes:* Cooler ID:
Multiple Coolers?	☐ Yes	☑ No	*If yes:* Cooler # _____ of _____
Cooler Custody Seals Present?	☐ Yes	☑ No	*If yes:* Cooler custody seals intact? ☐ Yes ☐ No
Sample Custody Seals Present?	☐ Yes	☑ No	*If yes:* Sample custody seals intact? ☐ Yes ☐ No
Trip Blank Present?	☑ Yes	☐ No	*If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☑ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: R Correction Factor (°C): 0.0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 5.6 Corrected Temp (°C): 5.6

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE: If yes, contact PM before proceeding If no, proceed with login

Additional Comments

Eurofins Cedar Falls
3019 Venture Way

Cedar Falls, IA 50613
phone 319.277.2401 fax 319.277 2425

Chain of Custody Record

eurofins Environment Testing America

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other IDNR

Eurofins Environment Testing America

Client Contact	**Project Manager: Chris Oelkers**	COC No
AECOM	Email Christopher Oelkers@aecom.com	Site Contact: / Date: 10-3-24	1 of 1 COCs
501 Sycamore Street, Suite 222	Tel/Fax:319-296-6878	Lab Contact: / Carrier:	TALS Project #
Waterloo, IA 50703	**Analysis Turnaround Time**		Sampler
(319) 232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS		**For Lab Use Only:**
(xxx) xxx-xxxx FAX	TAT if different from Below _____		Walk-in Client.
Project Name Black Hawk Co IDNR	☑ 2 weeks		Lab Sampling
Site Black Hawk County Landfill	☐ 1 week		
P O #	☐ 2 days		Job / SDG No
	☐ 1 day		

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	Appendix I, TSS	Appendix II, TSS	2,4-D	4,4'-DDD	beta-BHC	delta BHC	Endosulfan I	Endosulfan sulfate	Endrin aldehyde	Silvex	Sulfide	Sample Specific Notes
OW-101B			G	GW		N		X											
OW-105B			G	GW		N		X											
OW-113B			G	GW		N		X										X	
OW-114B	10-2-24	0940	G	GW	5	N		X											Turbidity – 1.55 NTU
OW-205B			G	GW		N		X			X			X				X	
OW-209B	10-2-24	1030	G	GW	5	N		X											Turbidity – 1.24 NTU
OW-209B-FD	10-2-24	1030	G	GW	5	N		X											
OW-212B	10-2-24	1330	G	GW	5	N		X											Turbidity – 4.68 NTU
OW-213BR			G	GW		N		X											
OW-216BR			G	GW		N		X											
OW-219B			G	GW		N		X											
Trip Blank	10-2-24	0600	G	W	2	N		X											

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No		Cooler Temp (°C) Obs'd._____ Corr'd._____		Therm ID No._____
Relinquished by: Ben Porter	Company: Aecom	Date/Time: 10-3-24	Received by:	Company:	Date/Time: 10/3/24 0925
Relinquished by:	Company:	Date/Time	Received by:	Company:	Date/Time
Relinquished by:	Company:	Date/Time	Received in Laboratory by:	Company:	Date/Time

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-291902-1

Login Number: 291902

List Source: Eurofins Cedar Falls

List Number: 1

Creator: Homolar, Dana J

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

ANALYTICAL REPORT

PREPARED FOR

Attn: Chris Oelkers
AECOM
501 Sycamore Street
Suite #222
Waterloo, Iowa 50703

Generated 10/18/2024 10:48:38 AM

JOB DESCRIPTION

Black Hawk County Landfill (IDNR)
Fall 2024

JOB NUMBER

310-292086-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

myEOL

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



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Authorized for release by
Zach Bindert, Senior Project Manager
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(319)595-2016

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Job Narrative
310-292086-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 10/4/2024 1:20 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 7.6°C.

GC/MS VOA
Method 8260D: The following sample(s) was collected in a properly preserved vial; however, the pH was outside the required criteria when verified by the laboratory. The sample was analyzed within the 7-day holding time specified for unpreserved samples: OW-220B (310-292086-7).

Method 8260D: The method requirement for no headspace was not met. The following volatile sample was analyzed with headspace in the sample container(s): Trip Blank (310-292086-8).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Herbicides
Method 8151A: Surrogate recovery for the following sample was outside upper control limits: OW-220B (310-292086-7). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed. See prep tech notes matrix is orange cloudy.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
Method 6020B: The reference method requires samples to be preserved to a pH of <2. The following sample was received with insufficient preservation at a pH of >2: OW-220B (310-292086-7). The sample(s) was preserved to the appropriate pH in the laboratory.

Method 6020B: The initial calibration verification (ICV) result for batch 310-436234 was above the upper control limit. The affected analytes are: silver. Sample results were non-detects, and have been reported as qualified data.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Field Service / Mobile Lab
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Sample Summary

Client: AECOM
Job ID: 310-292086-1
Project/Site: Black Hawk County Landfill (IDNR)

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-292086-5	OW-213BR	Water	10/04/24 09:20	10/04/24 13:20
310-292086-6	OW-219B	Water	10/04/24 10:00	10/04/24 13:20
310-292086-7	OW-220B	Water	10/04/24 13:00	10/04/24 13:20
310-292086-8	Trip Blank	Water	10/04/24 06:00	10/04/24 13:20

Detection Summary

Client: AECOM
Job ID: 310-292086-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-213BR — Lab Sample ID: 310-292086-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.404	J	0.500	0.220	ug/L	1		8260D	Total/NA
cis-1,2-Dichloroethene	0.528	J	1.00	0.210	ug/L	1		8260D	Total/NA
Barium	75.4		2.00	0.660	ug/L	1		6020B	Total/NA
Cadmium	0.405		0.200	0.100	ug/L	1		6020B	Total/NA
Chromium	2.04	J	5.00	1.20	ug/L	1		6020B	Total/NA
Cobalt	2.01		0.500	0.170	ug/L	1		6020B	Total/NA
Copper	5.64	B	5.00	1.80	ug/L	1		6020B	Total/NA
Nickel	45.2		5.00	2.10	ug/L	1		6020B	Total/NA
Thallium	1.58		1.00	0.570	ug/L	1		6020B	Total/NA
Vanadium	1.48	J	5.00	1.10	ug/L	1		6020B	Total/NA
Total Suspended Solids	2.25		1.88	1.39	mg/L	1		I-3765-85	Total/NA
Field Turbidity	8.22				NTU	1		Field Sampling	Total/NA

Client Sample ID: OW-219B — Lab Sample ID: 310-292086-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	29.0		2.00	0.660	ug/L	1		6020B	Total/NA
Cadmium	0.186	J	0.200	0.100	ug/L	1		6020B	Total/NA
Chromium	4.19	J	5.00	1.20	ug/L	1		6020B	Total/NA
Cobalt	2.37		0.500	0.170	ug/L	1		6020B	Total/NA
Copper	2.14	J B	5.00	1.80	ug/L	1		6020B	Total/NA
Nickel	12.1		5.00	2.10	ug/L	1		6020B	Total/NA
Thallium	0.793	J	1.00	0.570	ug/L	1		6020B	Total/NA
Total Suspended Solids	10.6		1.88	1.39	mg/L	1		I-3765-85	Total/NA
Field Turbidity	0.62				NTU	1		Field Sampling	Total/NA

Client Sample ID: OW-220B — Lab Sample ID: 310-292086-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	0.540	J	1.00	0.220	ug/L	1		8260D	Total/NA
1,4-Dichlorobenzene	2.35		1.00	0.230	ug/L	1		8260D	Total/NA
Acetone	7.67	J	10.0	3.10	ug/L	1		8260D	Total/NA
Benzene	2.29		0.500	0.220	ug/L	1		8260D	Total/NA
Chloroethane	1.26	J	4.00	0.790	ug/L	1		8260D	Total/NA
cis-1,2-Dichloroethene	0.407	J	1.00	0.210	ug/L	1		8260D	Total/NA
Arsenic	25.3		2.00	0.530	ug/L	1		6020B	Total/NA
Barium	1010		2.00	0.660	ug/L	1		6020B	Total/NA
Chromium	6.62		5.00	1.20	ug/L	1		6020B	Total/NA
Cobalt	15.8		0.500	0.170	ug/L	1		6020B	Total/NA
Lead	0.697		0.500	0.260	ug/L	1		6020B	Total/NA
Nickel	130		5.00	2.10	ug/L	1		6020B	Total/NA
Thallium	1.54		1.00	0.570	ug/L	1		6020B	Total/NA
Vanadium	1.92	J	5.00	1.10	ug/L	1		6020B	Total/NA
Total Suspended Solids	81.0		15.0	11.1	mg/L	1		I-3765-85	Total/NA
Field Turbidity	5.01				NTU	1		Field Sampling	Total/NA

Client Sample ID: Trip Blank — Lab Sample ID: 310-292086-8

No Detections.

This Detection Summary does not include radiochemical test results.

Client: AECOM
Job ID: 310-292086-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-213BR
Lab Sample ID: 310-292086-5
Date Collected: 10/04/24 09:20
Matrix: Water
Date Received: 10/04/24 13:20

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			10/11/24 05:24	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			10/11/24 05:24	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			10/11/24 05:24	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			10/11/24 05:24	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			10/11/24 05:24	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			10/11/24 05:24	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			10/11/24 05:24	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			10/11/24 05:24	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			10/11/24 05:24	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			10/11/24 05:24	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			10/11/24 05:24	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			10/11/24 05:24	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			10/11/24 05:24	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			10/11/24 05:24	1
2-Hexanone	<2.00		10.0	2.00	ug/L			10/11/24 05:24	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			10/11/24 05:24	1
Acetone	<3.10		10.0	3.10	ug/L			10/11/24 05:24	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			10/11/24 05:24	1
Benzene	**0.404**	**J**	0.500	0.220	ug/L			10/11/24 05:24	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			10/11/24 05:24	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			10/11/24 05:24	1
Bromoform	<0.780		5.00	0.780	ug/L			10/11/24 05:24	1
Bromomethane	<1.10		4.00	1.10	ug/L			10/11/24 05:24	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			10/11/24 05:24	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			10/11/24 05:24	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			10/11/24 05:24	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			10/11/24 05:24	1
Chloroethane	<0.790		4.00	0.790	ug/L			10/11/24 05:24	1
Chloroform	<1.30		3.00	1.30	ug/L			10/11/24 05:24	1
Chloromethane	<0.610		3.00	0.610	ug/L			10/11/24 05:24	1
cis-1,2-Dichloroethene	**0.528**	**J**	1.00	0.210	ug/L			10/11/24 05:24	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			10/11/24 05:24	1
Dibromomethane	<0.330		1.00	0.330	ug/L			10/11/24 05:24	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			10/11/24 05:24	1
Iodomethane	<7.00		10.0	7.00	ug/L			10/11/24 05:24	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			10/11/24 05:24	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			10/11/24 05:24	1
o-Xylene	<0.400		1.00	0.400	ug/L			10/11/24 05:24	1
Styrene	<0.370		1.00	0.370	ug/L			10/11/24 05:24	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			10/11/24 05:24	1
Toluene	<0.430		1.00	0.430	ug/L			10/11/24 05:24	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			10/11/24 05:24	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			10/11/24 05:24	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			10/11/24 05:24	1
Trichloroethene	<0.430		1.00	0.430	ug/L			10/11/24 05:24	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			10/11/24 05:24	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			10/11/24 05:24	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			10/11/24 05:24	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			10/11/24 05:24	1

Client: AECOM
Job ID: 310-292086-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-213BR
Lab Sample ID: 310-292086-5
Date Collected: 10/04/24 09:20
Matrix: Water
Date Received: 10/04/24 13:20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*100*		*73 - 130*		*10/11/24 05:24*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*10/11/24 05:24*	*1*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*		*10/11/24 05:24*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		10/09/24 09:30	10/11/24 19:45	1
Arsenic	<0.530		2.00	0.530	ug/L		10/09/24 09:30	10/11/24 19:45	1
Barium	**75.4**		2.00	0.660	ug/L		10/09/24 09:30	10/14/24 12:36	1
Beryllium	<0.330		1.00	0.330	ug/L		10/09/24 09:30	10/14/24 12:36	1
Cadmium	**0.405**		0.200	0.100	ug/L		10/09/24 09:30	10/11/24 19:45	1
Chromium	**2.04**	**J**	5.00	1.20	ug/L		10/09/24 09:30	10/11/24 19:45	1
Cobalt	**2.01**		0.500	0.170	ug/L		10/09/24 09:30	10/11/24 19:45	1
Copper	**5.64**	**B**	5.00	1.80	ug/L		10/09/24 09:30	10/11/24 19:45	1
Lead	<0.260		0.500	0.260	ug/L		10/09/24 09:30	10/11/24 19:45	1
Nickel	**45.2**		5.00	2.10	ug/L		10/09/24 09:30	10/11/24 19:45	1
Selenium	<1.40		5.00	1.40	ug/L		10/09/24 09:30	10/11/24 19:45	1
Silver	<0.500		1.00	0.500	ug/L		10/09/24 09:30	10/11/24 19:45	1
Thallium	**1.58**		1.00	0.570	ug/L		10/09/24 09:30	10/14/24 12:36	1
Vanadium	**1.48**	**J**	5.00	1.10	ug/L		10/09/24 09:30	10/11/24 19:45	1
Zinc	<9.70		20.0	9.70	ug/L		10/09/24 09:30	10/11/24 19:45	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**2.25**		1.88	1.39	mg/L			10/07/24 12:50	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**8.22**				NTU			10/04/24 09:20	1

Client: AECOM
Job ID: 310-292086-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-219B
Lab Sample ID: 310-292086-6
Date Collected: 10/04/24 10:00
Matrix: Water
Date Received: 10/04/24 13:20

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			10/11/24 05:47	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			10/11/24 05:47	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			10/11/24 05:47	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			10/11/24 05:47	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			10/11/24 05:47	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			10/11/24 05:47	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			10/11/24 05:47	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			10/11/24 05:47	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			10/11/24 05:47	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			10/11/24 05:47	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			10/11/24 05:47	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			10/11/24 05:47	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			10/11/24 05:47	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			10/11/24 05:47	1
2-Hexanone	<2.00		10.0	2.00	ug/L			10/11/24 05:47	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			10/11/24 05:47	1
Acetone	<3.10		10.0	3.10	ug/L			10/11/24 05:47	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			10/11/24 05:47	1
Benzene	<0.220		0.500	0.220	ug/L			10/11/24 05:47	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			10/11/24 05:47	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			10/11/24 05:47	1
Bromoform	<0.780		5.00	0.780	ug/L			10/11/24 05:47	1
Bromomethane	<1.10		4.00	1.10	ug/L			10/11/24 05:47	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			10/11/24 05:47	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			10/11/24 05:47	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			10/11/24 05:47	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			10/11/24 05:47	1
Chloroethane	<0.790		4.00	0.790	ug/L			10/11/24 05:47	1
Chloroform	<1.30		3.00	1.30	ug/L			10/11/24 05:47	1
Chloromethane	<0.610		3.00	0.610	ug/L			10/11/24 05:47	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			10/11/24 05:47	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			10/11/24 05:47	1
Dibromomethane	<0.330		1.00	0.330	ug/L			10/11/24 05:47	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			10/11/24 05:47	1
Iodomethane	<7.00		10.0	7.00	ug/L			10/11/24 05:47	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			10/11/24 05:47	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			10/11/24 05:47	1
o-Xylene	<0.400		1.00	0.400	ug/L			10/11/24 05:47	1
Styrene	<0.370		1.00	0.370	ug/L			10/11/24 05:47	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			10/11/24 05:47	1
Toluene	<0.430		1.00	0.430	ug/L			10/11/24 05:47	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			10/11/24 05:47	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			10/11/24 05:47	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			10/11/24 05:47	1
Trichloroethene	<0.430		1.00	0.430	ug/L			10/11/24 05:47	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			10/11/24 05:47	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			10/11/24 05:47	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			10/11/24 05:47	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			10/11/24 05:47	1

Client: AECOM
Project/Site: Black Hawk County Landfill (IDNR)

Job ID: 310-292086-1

Client Sample ID: OW-219B

Date Collected: 10/04/24 10:00
Date Received: 10/04/24 13:20

Lab Sample ID: 310-292086-6

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*101*		*73 - 130*		*10/11/24 05:47*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*10/11/24 05:47*	*1*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*10/11/24 05:47*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		10/09/24 09:30	10/11/24 19:55	1
Arsenic	<0.530		2.00	0.530	ug/L		10/09/24 09:30	10/11/24 19:55	1
Barium	**29.0**		2.00	0.660	ug/L		10/09/24 09:30	10/11/24 19:55	1
Beryllium	<0.330		1.00	0.330	ug/L		10/09/24 09:30	10/14/24 12:42	1
Cadmium	**0.186**	**J**	0.200	0.100	ug/L		10/09/24 09:30	10/11/24 19:55	1
Chromium	**4.19**	**J**	5.00	1.20	ug/L		10/09/24 09:30	10/11/24 19:55	1
Cobalt	**2.37**		0.500	0.170	ug/L		10/09/24 09:30	10/11/24 19:55	1
Copper	**2.14**	**J B**	5.00	1.80	ug/L		10/09/24 09:30	10/11/24 19:55	1
Lead	<0.260		0.500	0.260	ug/L		10/09/24 09:30	10/11/24 19:55	1
Nickel	**12.1**		5.00	2.10	ug/L		10/09/24 09:30	10/11/24 19:55	1
Selenium	<1.40		5.00	1.40	ug/L		10/09/24 09:30	10/11/24 19:55	1
Silver	<0.500		1.00	0.500	ug/L		10/09/24 09:30	10/11/24 19:55	1
Thallium	**0.793**	**J**	1.00	0.570	ug/L		10/09/24 09:30	10/14/24 12:42	1
Vanadium	<1.10		5.00	1.10	ug/L		10/09/24 09:30	10/11/24 19:55	1
Zinc	<9.70		20.0	9.70	ug/L		10/09/24 09:30	10/11/24 19:55	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**10.6**		1.88	1.39	mg/L			10/07/24 12:50	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**0.62**				NTU			10/04/24 10:00	1

Client: AECOM
Job ID: 310-292086-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-220B
Lab Sample ID: 310-292086-7
Date Collected: 10/04/24 13:00
Matrix: Water
Date Received: 10/04/24 13:20

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			10/11/24 06:10	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			10/11/24 06:10	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			10/11/24 06:10	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			10/11/24 06:10	1
1,1-Dichloroethane	**0.540**	**J**	1.00	0.220	ug/L			10/11/24 06:10	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			10/11/24 06:10	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			10/11/24 06:10	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			10/11/24 06:10	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			10/11/24 06:10	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			10/11/24 06:10	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			10/11/24 06:10	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			10/11/24 06:10	1
1,4-Dichlorobenzene	**2.35**		1.00	0.230	ug/L			10/11/24 06:10	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			10/11/24 06:10	1
2-Hexanone	<2.00		10.0	2.00	ug/L			10/11/24 06:10	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			10/11/24 06:10	1
Acetone	**7.67**	**J**	10.0	3.10	ug/L			10/11/24 06:10	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			10/11/24 06:10	1
Benzene	**2.29**		0.500	0.220	ug/L			10/11/24 06:10	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			10/11/24 06:10	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			10/11/24 06:10	1
Bromoform	<0.780		5.00	0.780	ug/L			10/11/24 06:10	1
Bromomethane	<1.10		4.00	1.10	ug/L			10/11/24 06:10	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			10/11/24 06:10	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			10/11/24 06:10	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			10/11/24 06:10	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			10/11/24 06:10	1
Chloroethane	**1.26**	**J**	4.00	0.790	ug/L			10/11/24 06:10	1
Chloroform	<1.30		3.00	1.30	ug/L			10/11/24 06:10	1
Chloromethane	<0.610		3.00	0.610	ug/L			10/11/24 06:10	1
cis-1,2-Dichloroethene	**0.407**	**J**	1.00	0.210	ug/L			10/11/24 06:10	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			10/11/24 06:10	1
Dibromomethane	<0.330		1.00	0.330	ug/L			10/11/24 06:10	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			10/11/24 06:10	1
Iodomethane	<7.00		10.0	7.00	ug/L			10/11/24 06:10	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			10/11/24 06:10	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			10/11/24 06:10	1
o-Xylene	<0.400		1.00	0.400	ug/L			10/11/24 06:10	1
Styrene	<0.370		1.00	0.370	ug/L			10/11/24 06:10	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			10/11/24 06:10	1
Toluene	<0.430		1.00	0.430	ug/L			10/11/24 06:10	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			10/11/24 06:10	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			10/11/24 06:10	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			10/11/24 06:10	1
Trichloroethene	<0.430		1.00	0.430	ug/L			10/11/24 06:10	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			10/11/24 06:10	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			10/11/24 06:10	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			10/11/24 06:10	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			10/11/24 06:10	1

Client: AECOM
Job ID: 310-292086-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-220B
Lab Sample ID: 310-292086-7

Date Collected: 10/04/24 13:00
Matrix: Water

Date Received: 10/04/24 13:20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*100*		*73 - 130*		*10/11/24 06:10*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*10/11/24 06:10*	*1*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*10/11/24 06:10*	*1*

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	<1.26		3.03	1.26	ug/L		10/08/24 07:36	10/09/24 08:03	5
Silvex (2,4,5-TP)	<0.111		0.252	0.111	ug/L		10/08/24 07:36	10/09/24 08:03	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*107*	*p*	*34 - 142*	*10/08/24 07:36*	*10/09/24 08:03*	*5*
DCAA	*290*	*S1+*	*34 - 142*	*10/08/24 07:36*	*10/09/24 08:03*	*5*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		10/09/24 09:30	10/11/24 19:57	1
Arsenic	**25.3**		2.00	0.530	ug/L		10/09/24 09:30	10/11/24 19:57	1
Barium	**1010**		2.00	0.660	ug/L		10/09/24 09:30	10/11/24 19:57	1
Beryllium	<0.330		1.00	0.330	ug/L		10/09/24 09:30	10/14/24 12:44	1
Cadmium	<0.100		0.200	0.100	ug/L		10/09/24 09:30	10/11/24 19:57	1
Chromium	**6.62**		5.00	1.20	ug/L		10/09/24 09:30	10/11/24 19:57	1
Cobalt	**15.8**		0.500	0.170	ug/L		10/09/24 09:30	10/11/24 19:57	1
Copper	<1.80		5.00	1.80	ug/L		10/09/24 09:30	10/11/24 19:57	1
Lead	**0.697**		0.500	0.260	ug/L		10/09/24 09:30	10/11/24 19:57	1
Nickel	**130**		5.00	2.10	ug/L		10/09/24 09:30	10/11/24 19:57	1
Selenium	<1.40		5.00	1.40	ug/L		10/09/24 09:30	10/11/24 19:57	1
Silver	<0.500		1.00	0.500	ug/L		10/09/24 09:30	10/11/24 19:57	1
Thallium	**1.54**		1.00	0.570	ug/L		10/09/24 09:30	10/14/24 12:44	1
Vanadium	**1.92**	**J**	5.00	1.10	ug/L		10/09/24 09:30	10/11/24 19:57	1
Zinc	<9.70		20.0	9.70	ug/L		10/09/24 09:30	10/11/24 19:57	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**81.0**		15.0	11.1	mg/L			10/07/24 12:50	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**5.01**				NTU			10/04/24 13:00	1

Client: AECOM
Job ID: 310-292086-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Trip Blank
Lab Sample ID: 310-292086-8
Date Collected: 10/04/24 06:00
Matrix: Water
Date Received: 10/04/24 13:20

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			10/11/24 02:45	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			10/11/24 02:45	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			10/11/24 02:45	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			10/11/24 02:45	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			10/11/24 02:45	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			10/11/24 02:45	1
1,1-Dichloropropene	<0.430		1.00	0.430	ug/L			10/11/24 02:45	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			10/11/24 02:45	1
1,2,4-Trichlorobenzene	<0.750		5.00	0.750	ug/L			10/11/24 02:45	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			10/11/24 02:45	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			10/11/24 02:45	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			10/11/24 02:45	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			10/11/24 02:45	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			10/11/24 02:45	1
1,3-Dichlorobenzene	<0.300		1.00	0.300	ug/L			10/11/24 02:45	1
1,3-Dichloropropane	<0.400		1.00	0.400	ug/L			10/11/24 02:45	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			10/11/24 02:45	1
2,2-Dichloropropane	<0.690		4.00	0.690	ug/L			10/11/24 02:45	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			10/11/24 02:45	1
2-Hexanone	<2.00		10.0	2.00	ug/L			10/11/24 02:45	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			10/11/24 02:45	1
Acetone	<3.10		10.0	3.10	ug/L			10/11/24 02:45	1
Acrolein	<3.60		10.0	3.60	ug/L			10/11/24 02:45	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			10/11/24 02:45	1
Allyl chloride	<0.700		2.00	0.700	ug/L			10/11/24 02:45	1
Benzene	<0.220		0.500	0.220	ug/L			10/11/24 02:45	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			10/11/24 02:45	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			10/11/24 02:45	1
Bromoform	<0.780		5.00	0.780	ug/L			10/11/24 02:45	1
Bromomethane	<1.10		4.00	1.10	ug/L			10/11/24 02:45	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			10/11/24 02:45	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			10/11/24 02:45	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			10/11/24 02:45	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			10/11/24 02:45	1
Chloroethane	<0.790		4.00	0.790	ug/L			10/11/24 02:45	1
Chloroform	<1.30		3.00	1.30	ug/L			10/11/24 02:45	1
Chloromethane	<0.610		3.00	0.610	ug/L			10/11/24 02:45	1
Chloroprene	<0.230		1.00	0.230	ug/L			10/11/24 02:45	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			10/11/24 02:45	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			10/11/24 02:45	1
Dibromomethane	<0.330		1.00	0.330	ug/L			10/11/24 02:45	1
Dichlorodifluoromethane	<0.250		3.00	0.250	ug/L			10/11/24 02:45	1
Ethyl methacrylate	<0.680		2.00	0.680	ug/L			10/11/24 02:45	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			10/11/24 02:45	1
Iodomethane	<7.00		10.0	7.00	ug/L			10/11/24 02:45	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			10/11/24 02:45	1
Methacrylonitrile	<3.30		10.0	3.30	ug/L			10/11/24 02:45	1
Methyl methacrylate	<0.760		2.00	0.760	ug/L			10/11/24 02:45	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			10/11/24 02:45	1

Client: AECOM
Job ID: 310-292086-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Trip Blank
Lab Sample ID: 310-292086-8
Date Collected: 10/04/24 06:00
Matrix: Water
Date Received: 10/04/24 13:20

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<3.00		5.00	3.00	ug/L			10/11/24 02:45	1
o-Xylene	<0.400		1.00	0.400	ug/L			10/11/24 02:45	1
Propionitrile	<3.40		10.0	3.40	ug/L			10/11/24 02:45	1
Styrene	<0.370		1.00	0.370	ug/L			10/11/24 02:45	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			10/11/24 02:45	1
Toluene	<0.430		1.00	0.430	ug/L			10/11/24 02:45	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			10/11/24 02:45	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			10/11/24 02:45	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			10/11/24 02:45	1
Trichloroethene	<0.430		1.00	0.430	ug/L			10/11/24 02:45	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			10/11/24 02:45	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			10/11/24 02:45	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			10/11/24 02:45	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			10/11/24 02:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*101*		*73 - 130*		*10/11/24 02:45*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*10/11/24 02:45*	*1*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*		*10/11/24 02:45*	*1*

Definitions/Glossary

Client: AECOM
Job ID: 310-292086-1
Project/Site: Black Hawk County Landfill (IDNR)

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC Semi VOA

Qualifier	Qualifier Description
p	The %RPD between the primary and confirmation column/detector is >40%. The lower value has been reported.
S1+	Surrogate recovery exceeds control limits, high biased.

Metals

Qualifier	Qualifier Description
^1+	Initial Calibration Verification (ICV) is outside acceptance limits, high biased.
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Surrogate Summary

Client: AECOM
Job ID: 310-292086-1
Project/Site: Black Hawk County Landfill (IDNR)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-292086-5	OW-213BR	100	99	100
310-292086-6	OW-219B	101	98	99
310-292086-7	OW-220B	100	99	99
310-292086-8	Trip Blank	101	99	100
LCS 310-435843/6	Lab Control Sample	101	101	99
LCS 310-435843/7	Lab Control Sample	101	99	100
MB 310-435843/5	Method Blank	101	99	101

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8151A - Herbicides (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		DCPAA1	DCPAA2
Lab Sample ID	Client Sample ID	(34-142)	(34-142)
310-292086-7	OW-220B	107 p	290 S1+
LCS 410-560532/2-A	Lab Control Sample	95	98
MB 410-560532/1-A	Method Blank	82	69

Surrogate Legend

DCPAA = DCAA

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 310-435843/5
Matrix: Water
Analysis Batch: 435843

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			10/11/24 00:51	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			10/11/24 00:51	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			10/11/24 00:51	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			10/11/24 00:51	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			10/11/24 00:51	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			10/11/24 00:51	1
1,1-Dichloropropene	<0.430		1.00	0.430	ug/L			10/11/24 00:51	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			10/11/24 00:51	1
1,2,4-Trichlorobenzene	<0.750		5.00	0.750	ug/L			10/11/24 00:51	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			10/11/24 00:51	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			10/11/24 00:51	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			10/11/24 00:51	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			10/11/24 00:51	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			10/11/24 00:51	1
1,3-Dichlorobenzene	<0.300		1.00	0.300	ug/L			10/11/24 00:51	1
1,3-Dichloropropane	<0.400		1.00	0.400	ug/L			10/11/24 00:51	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			10/11/24 00:51	1
2,2-Dichloropropane	<0.690		4.00	0.690	ug/L			10/11/24 00:51	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			10/11/24 00:51	1
2-Hexanone	<2.00		10.0	2.00	ug/L			10/11/24 00:51	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			10/11/24 00:51	1
Acetone	<3.10		10.0	3.10	ug/L			10/11/24 00:51	1
Acrolein	<3.60		10.0	3.60	ug/L			10/11/24 00:51	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			10/11/24 00:51	1
Allyl chloride	<0.700		2.00	0.700	ug/L			10/11/24 00:51	1
Benzene	<0.220		0.500	0.220	ug/L			10/11/24 00:51	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			10/11/24 00:51	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			10/11/24 00:51	1
Bromoform	<0.780		5.00	0.780	ug/L			10/11/24 00:51	1
Bromomethane	<1.10		4.00	1.10	ug/L			10/11/24 00:51	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			10/11/24 00:51	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			10/11/24 00:51	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			10/11/24 00:51	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			10/11/24 00:51	1
Chloroethane	<0.790		4.00	0.790	ug/L			10/11/24 00:51	1
Chloroform	<1.30		3.00	1.30	ug/L			10/11/24 00:51	1
Chloromethane	<0.610		3.00	0.610	ug/L			10/11/24 00:51	1
Chloroprene	<0.230		1.00	0.230	ug/L			10/11/24 00:51	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			10/11/24 00:51	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			10/11/24 00:51	1
Dibromomethane	<0.330		1.00	0.330	ug/L			10/11/24 00:51	1
Dichlorodifluoromethane	<0.250		3.00	0.250	ug/L			10/11/24 00:51	1
Ethyl methacrylate	<0.680		2.00	0.680	ug/L			10/11/24 00:51	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			10/11/24 00:51	1
Iodomethane	<7.00		10.0	7.00	ug/L			10/11/24 00:51	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			10/11/24 00:51	1
Methacrylonitrile	<3.30		10.0	3.30	ug/L			10/11/24 00:51	1
Methyl methacrylate	<0.760		2.00	0.760	ug/L			10/11/24 00:51	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-435843/5
Matrix: Water
Analysis Batch: 435843

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylene Chloride	<1.70		5.00	1.70	ug/L			10/11/24 00:51	1
Naphthalene	<3.00		5.00	3.00	ug/L			10/11/24 00:51	1
o-Xylene	<0.400		1.00	0.400	ug/L			10/11/24 00:51	1
Propionitrile	<3.40		10.0	3.40	ug/L			10/11/24 00:51	1
Styrene	<0.370		1.00	0.370	ug/L			10/11/24 00:51	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			10/11/24 00:51	1
Toluene	<0.430		1.00	0.430	ug/L			10/11/24 00:51	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			10/11/24 00:51	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			10/11/24 00:51	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			10/11/24 00:51	1
Trichloroethene	<0.430		1.00	0.430	ug/L			10/11/24 00:51	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			10/11/24 00:51	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			10/11/24 00:51	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			10/11/24 00:51	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			10/11/24 00:51	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*101*		*73 - 130*		*10/11/24 00:51*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*10/11/24 00:51*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*10/11/24 00:51*	*1*

Lab Sample ID: LCS 310-435843/6
Matrix: Water
Analysis Batch: 435843

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	20.0	22.29		ug/L		111	71 - 120
1,1,1-Trichloroethane	20.0	21.76		ug/L		109	73 - 129
1,1,2,2-Tetrachloroethane	20.0	21.96		ug/L		110	68 - 124
1,1,2-Trichloroethane	20.0	22.17		ug/L		111	73 - 123
1,1-Dichloroethane	20.0	20.96		ug/L		105	70 - 127
1,1-Dichloroethene	20.0	21.16		ug/L		106	63 - 132
1,1-Dichloropropene	20.0	21.81		ug/L		109	69 - 132
1,2,3-Trichloropropane	20.0	21.51		ug/L		108	65 - 127
1,2,4-Trichlorobenzene	20.0	22.35		ug/L		112	68 - 124
1,2-Dibromo-3-Chloropropane	20.0	20.85		ug/L		104	50 - 150
1,2-Dibromoethane (EDB)	20.0	21.86		ug/L		109	75 - 125
1,2-Dichlorobenzene	20.0	22.11		ug/L		111	74 - 120
1,2-Dichloroethane	20.0	20.79		ug/L		104	71 - 125
1,2-Dichloropropane	20.0	21.16		ug/L		106	73 - 124
1,3-Dichlorobenzene	20.0	22.15		ug/L		111	72 - 120
1,3-Dichloropropane	20.0	21.75		ug/L		109	72 - 125
1,4-Dichlorobenzene	20.0	21.75		ug/L		109	72 - 120
2,2-Dichloropropane	20.0	20.89		ug/L		104	50 - 150
2-Butanone (MEK)	40.0	41.41		ug/L		104	50 - 150
2-Hexanone	40.0	43.80		ug/L		110	60 - 140
4-Methyl-2-pentanone (MIBK)	40.0	44.59		ug/L		111	60 - 139
Acetone	40.0	40.80		ug/L		102	50 - 150

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-435843/6
Matrix: Water
Analysis Batch: 435843

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Acrolein			95.5	93.57		ug/L		98	49 - 150		
Acrylonitrile			200	205.6		ug/L		103	50 - 150		
Allyl chloride			20.0	20.83		ug/L		104	49 - 150		
Benzene			20.0	21.28		ug/L		106	72 - 124		
Bromochloromethane			20.0	21.44		ug/L		107	73 - 130		
Bromodichloromethane			20.0	21.52		ug/L		108	74 - 122		
Bromoform			20.0	21.31		ug/L		107	61 - 122		
Carbon disulfide			20.0	20.28		ug/L		101	59 - 135		
Carbon tetrachloride			20.0	21.63		ug/L		108	67 - 132		
Chlorobenzene			20.0	22.00		ug/L		110	76 - 120		
Chlorodibromomethane			20.0	21.70		ug/L		109	71 - 121		
Chloroform			20.0	20.61		ug/L		103	72 - 125		
Chloroprene			20.0	21.19		ug/L		106	69 - 133		
cis-1,2-Dichloroethene			20.0	21.01		ug/L		105	74 - 123		
cis-1,3-Dichloropropene			20.0	21.61		ug/L		108	71 - 125		
Dibromomethane			20.0	21.25		ug/L		106	74 - 125		
Ethyl methacrylate			20.0	22.16		ug/L		111	70 - 129		
Ethylbenzene			20.0	22.68		ug/L		113	74 - 122		
Iodomethane			20.0	16.58		ug/L		83	10 - 150		
Methacrylonitrile			200	212.4		ug/L		106	69 - 129		
Methyl methacrylate			40.0	44.48		ug/L		111	68 - 131		
Methylene Chloride			20.0	20.36		ug/L		102	50 - 150		
Naphthalene			20.0	22.38		ug/L		112	50 - 150		
Propionitrile			200	212.7		ug/L		106	63 - 135		
Styrene			20.0	23.08		ug/L		115	74 - 121		
Tetrachloroethene			20.0	22.27		ug/L		111	71 - 130		
Toluene			20.0	21.61		ug/L		108	74 - 123		
trans-1,2-Dichloroethene			20.0	21.08		ug/L		105	70 - 126		
trans-1,3-Dichloropropene			20.0	21.35		ug/L		107	69 - 123		
trans-1,4-Dichloro-2-butene			20.0	19.89		ug/L		99	50 - 150		
Trichloroethene			20.0	21.74		ug/L		109	72 - 126		
Vinyl acetate			40.0	41.19		ug/L		103	50 - 150		
Xylenes, Total			40.0	45.14		ug/L		113	73 - 123		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*101*		*73 - 130*
Toluene-d8 (Surr)	*101*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*

Lab Sample ID: LCS 310-435843/7
Matrix: Water
Analysis Batch: 435843

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Bromomethane			20.0	16.32		ug/L		82	23 - 150		
Chloroethane			20.0	18.50		ug/L		92	54 - 136		
Chloromethane			20.0	18.78		ug/L		94	38 - 150		
Dichlorodifluoromethane			20.0	22.03		ug/L		110	39 - 150		

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-435843/7
Matrix: Water
Analysis Batch: 435843

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Trichlorofluoromethane	20.0	20.87		ug/L		104	54 - 149
Vinyl chloride	20.0	19.80		ug/L		99	56 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*101*		*73 - 130*
Toluene-d8 (Surr)	*99*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*

Method: 8151A - Herbicides (GC)

Lab Sample ID: MB 410-560532/1-A
Matrix: Water
Analysis Batch: 560964

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 560532

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	<0.250		0.600	0.250	ug/L		10/08/24 07:36	10/09/24 05:14	1
Silvex (2,4,5-TP)	<0.0220		0.0500	0.0220	ug/L		10/08/24 07:36	10/09/24 05:14	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*82*		*34 - 142*	*10/08/24 07:36*	*10/09/24 05:14*	*1*
DCAA	*69*		*34 - 142*	*10/08/24 07:36*	*10/09/24 05:14*	*1*

Lab Sample ID: LCS 410-560532/2-A
Matrix: Water
Analysis Batch: 560964

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 560532

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,4-D	2.50	2.795		ug/L		112	53 - 159
Silvex (2,4,5-TP)	0.250	0.3191		ug/L		128	62 - 170

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCAA	*95*		*34 - 142*
DCAA	*98*		*34 - 142*

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-435581/1-A
Matrix: Water
Analysis Batch: 436085

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 435581

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		10/09/24 09:30	10/11/24 19:40	1
Arsenic	<0.530		2.00	0.530	ug/L		10/09/24 09:30	10/11/24 19:40	1
Barium	<0.660		2.00	0.660	ug/L		10/09/24 09:30	10/11/24 19:40	1
Cadmium	<0.100		0.200	0.100	ug/L		10/09/24 09:30	10/11/24 19:40	1
Chromium	<1.20		5.00	1.20	ug/L		10/09/24 09:30	10/11/24 19:40	1
Cobalt	<0.170		0.500	0.170	ug/L		10/09/24 09:30	10/11/24 19:40	1
Copper	1.931	J	5.00	1.80	ug/L		10/09/24 09:30	10/11/24 19:40	1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 310-435581/1-A
Matrix: Water
Analysis Batch: 436085

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 435581

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	<0.260		0.500	0.260	ug/L		10/09/24 09:30	10/11/24 19:40	1
Nickel	<2.10		5.00	2.10	ug/L		10/09/24 09:30	10/11/24 19:40	1
Selenium	<1.40		5.00	1.40	ug/L		10/09/24 09:30	10/11/24 19:40	1
Vanadium	<1.10		5.00	1.10	ug/L		10/09/24 09:30	10/11/24 19:40	1

Lab Sample ID: MB 310-435581/1-A
Matrix: Water
Analysis Batch: 436234

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 435581

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	<0.330		1.00	0.330	ug/L		10/09/24 09:30	10/14/24 12:31	1
Silver	<0.500	^1+	1.00	0.500	ug/L		10/09/24 09:30	10/14/24 12:31	1
Thallium	<0.570		1.00	0.570	ug/L		10/09/24 09:30	10/14/24 12:31	1
Zinc	<9.70		20.0	9.70	ug/L		10/09/24 09:30	10/14/24 12:31	1

Lab Sample ID: LCS 310-435581/2-A
Matrix: Water
Analysis Batch: 436085

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 435581

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	200	224.9		ug/L		112	80 - 120
Barium	100	109.2		ug/L		109	80 - 120
Chromium	100	120.1		ug/L		120	80 - 120
Copper	200	234.6		ug/L		117	80 - 120
Nickel	200	219.4		ug/L		110	80 - 120
Selenium	400	424.4		ug/L		106	80 - 120
Silver	100	106.0		ug/L		106	80 - 120
Vanadium	100	106.2		ug/L		106	80 - 120
Zinc	200	200.5		ug/L		100	80 - 120

Lab Sample ID: LCS 310-435581/2-A
Matrix: Water
Analysis Batch: 436234

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 435581

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	200	238.7		ug/L		119	80 - 120
Beryllium	100	108.5		ug/L		108	80 - 120
Cadmium	100	108.9		ug/L		109	80 - 120
Lead	200	226.1		ug/L		113	80 - 120
Thallium	100	84.57		ug/L		85	80 - 120

Lab Sample ID: LCS 310-435581/2-A
Matrix: Water
Analysis Batch: 436382

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 435581

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cobalt	100	112.3		ug/L		112	80 - 120

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: 310-292086-5 MS
Matrix: Water
Analysis Batch: 436085

Client Sample ID: OW-213BR
Prep Type: Total/NA
Prep Batch: 435581

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	<1.00		200	214.7		ug/L		107	75 - 125
Arsenic	<0.530		200	211.1		ug/L		106	75 - 125
Barium	67.0		100	166.9		ug/L		100	75 - 125
Cadmium	0.405		100	93.88		ug/L		93	75 - 125
Chromium	2.04	J	100	99.66		ug/L		98	75 - 125
Cobalt	2.01		100	111.8		ug/L		110	75 - 125
Copper	5.64	B	200	214.6	B	ug/L		104	75 - 125
Lead	<0.260		200	199.0		ug/L		100	75 - 125
Nickel	45.2		200	276.4		ug/L		116	75 - 125
Selenium	<1.40		400	402.5		ug/L		101	75 - 125
Silver	<0.500		100	104.6		ug/L		105	75 - 125
Vanadium	1.48	J	100	100.4		ug/L		99	75 - 125
Zinc	<9.70		200	184.1		ug/L		92	75 - 125

Lab Sample ID: 310-292086-5 MS
Matrix: Water
Analysis Batch: 436234

Client Sample ID: OW-213BR
Prep Type: Total/NA
Prep Batch: 435581

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Beryllium	<0.330		100	107.8		ug/L		108	75 - 125
Thallium	1.58		100	82.88		ug/L		81	75 - 125

Lab Sample ID: 310-292086-5 MSD
Matrix: Water
Analysis Batch: 436085

Client Sample ID: OW-213BR
Prep Type: Total/NA
Prep Batch: 435581

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Antimony	<1.00		200	221.0		ug/L		111	75 - 125	3	20
Arsenic	<0.530		200	215.6		ug/L		108	75 - 125	2	20
Barium	67.0		100	169.6		ug/L		103	75 - 125	2	20
Cadmium	0.405		100	96.23		ug/L		96	75 - 125	2	20
Chromium	2.04	J	100	102.4		ug/L		100	75 - 125	3	20
Cobalt	2.01		100	115.2		ug/L		113	75 - 125	3	20
Copper	5.64	B	200	220.8	B	ug/L		108	75 - 125	3	20
Lead	<0.260		200	205.6		ug/L		103	75 - 125	3	20
Nickel	45.2		200	254.8		ug/L		105	75 - 125	8	20
Selenium	<1.40		400	408.5		ug/L		102	75 - 125	1	20
Silver	<0.500		100	112.4		ug/L		112	75 - 125	7	20
Vanadium	1.48	J	100	103.2		ug/L		102	75 - 125	3	20
Zinc	<9.70		200	188.0		ug/L		94	75 - 125	2	20

Lab Sample ID: 310-292086-5 MSD
Matrix: Water
Analysis Batch: 436234

Client Sample ID: OW-213BR
Prep Type: Total/NA
Prep Batch: 435581

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Beryllium	<0.330		100	107.9		ug/L		108	75 - 125	0	20
Thallium	1.58		100	85.65		ug/L		84	75 - 125	3	20

Client: AECOM
Job ID: 310-292086-1
Project/Site: Black Hawk County Landfill (IDNR)

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: MB 310-435425/1
Matrix: Water
Analysis Batch: 435425

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<3.70		5.00	3.70	mg/L			10/07/24 12:50	1

Lab Sample ID: LCS 310-435425/2
Matrix: Water
Analysis Batch: 435425

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Suspended Solids			100	96.00		mg/L		96	81 - 116		

Lab Sample ID: 310-292086-7 DU
Matrix: Water
Analysis Batch: 435425

Client Sample ID: OW-220B
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Suspended Solids	81.0			84.00		mg/L				4	35

QC Association Summary

Client: AECOM
Job ID: 310-292086-1
Project/Site: Black Hawk County Landfill (IDNR)

GC/MS VOA

Analysis Batch: 435843

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292086-5	OW-213BR	Total/NA	Water	8260D	
310-292086-6	OW-219B	Total/NA	Water	8260D	
310-292086-7	OW-220B	Total/NA	Water	8260D	
310-292086-8	Trip Blank	Total/NA	Water	8260D	
MB 310-435843/5	Method Blank	Total/NA	Water	8260D	
LCS 310-435843/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-435843/7	Lab Control Sample	Total/NA	Water	8260D	

GC Semi VOA

Prep Batch: 560532

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292086-7	OW-220B	Total/NA	Water	8151A	
MB 410-560532/1-A	Method Blank	Total/NA	Water	8151A	
LCS 410-560532/2-A	Lab Control Sample	Total/NA	Water	8151A	

Analysis Batch: 560964

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292086-7	OW-220B	Total/NA	Water	8151A	560532
MB 410-560532/1-A	Method Blank	Total/NA	Water	8151A	560532
LCS 410-560532/2-A	Lab Control Sample	Total/NA	Water	8151A	560532

Metals

Prep Batch: 435581

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292086-5	OW-213BR	Total/NA	Water	3005A	
310-292086-6	OW-219B	Total/NA	Water	3005A	
310-292086-7	OW-220B	Total/NA	Water	3005A	
MB 310-435581/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-435581/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-292086-5 MS	OW-213BR	Total/NA	Water	3005A	
310-292086-5 MSD	OW-213BR	Total/NA	Water	3005A	

Analysis Batch: 436085

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292086-5	OW-213BR	Total/NA	Water	6020B	435581
310-292086-6	OW-219B	Total/NA	Water	6020B	435581
310-292086-7	OW-220B	Total/NA	Water	6020B	435581
MB 310-435581/1-A	Method Blank	Total/NA	Water	6020B	435581
LCS 310-435581/2-A	Lab Control Sample	Total/NA	Water	6020B	435581
310-292086-5 MS	OW-213BR	Total/NA	Water	6020B	435581
310-292086-5 MSD	OW-213BR	Total/NA	Water	6020B	435581

Analysis Batch: 436234

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292086-5	OW-213BR	Total/NA	Water	6020B	435581
310-292086-6	OW-219B	Total/NA	Water	6020B	435581
310-292086-7	OW-220B	Total/NA	Water	6020B	435581
MB 310-435581/1-A	Method Blank	Total/NA	Water	6020B	435581
LCS 310-435581/2-A	Lab Control Sample	Total/NA	Water	6020B	435581
310-292086-5 MS	OW-213BR	Total/NA	Water	6020B	435581

Metals (Continued)

Analysis Batch: 436234 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292086-5 MSD	OW-213BR	Total/NA	Water	6020B	435581

Analysis Batch: 436382

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 310-435581/2-A	Lab Control Sample	Total/NA	Water	6020B	435581

General Chemistry

Analysis Batch: 435425

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292086-5	OW-213BR	Total/NA	Water	I-3765-85	
310-292086-6	OW-219B	Total/NA	Water	I-3765-85	
310-292086-7	OW-220B	Total/NA	Water	I-3765-85	
MB 310-435425/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-435425/2	Lab Control Sample	Total/NA	Water	I-3765-85	
310-292086-7 DU	OW-220B	Total/NA	Water	I-3765-85	

Field Service / Mobile Lab

Analysis Batch: 435786

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292086-5	OW-213BR	Total/NA	Water	Field Sampling	
310-292086-6	OW-219B	Total/NA	Water	Field Sampling	
310-292086-7	OW-220B	Total/NA	Water	Field Sampling	

Lab Chronicle

Client: AECOM
Job ID: 310-292086-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-213BR
Lab Sample ID: 310-292086-5
Date Collected: 10/04/24 09:20
Matrix: Water
Date Received: 10/04/24 13:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	435843	WSE8	EET CF	10/11/24 05:24
Total/NA	Prep	3005A			435581	F5MW	EET CF	10/09/24 09:30
Total/NA	Analysis	6020B		1	436085	A6US	EET CF	10/11/24 19:45
Total/NA	Prep	3005A			435581	F5MW	EET CF	10/09/24 09:30
Total/NA	Analysis	6020B		1	436234	NFT2	EET CF	10/14/24 12:36
Total/NA	Analysis	I-3765-85		1	435425	DGU1	EET CF	10/07/24 12:50
Total/NA	Analysis	Field Sampling		1	435786	BJ0R	EET CF	10/04/24 09:20

Client Sample ID: OW-219B
Lab Sample ID: 310-292086-6
Date Collected: 10/04/24 10:00
Matrix: Water
Date Received: 10/04/24 13:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	435843	WSE8	EET CF	10/11/24 05:47
Total/NA	Prep	3005A			435581	F5MW	EET CF	10/09/24 09:30
Total/NA	Analysis	6020B		1	436085	A6US	EET CF	10/11/24 19:55
Total/NA	Prep	3005A			435581	F5MW	EET CF	10/09/24 09:30
Total/NA	Analysis	6020B		1	436234	NFT2	EET CF	10/14/24 12:42
Total/NA	Analysis	I-3765-85		1	435425	DGU1	EET CF	10/07/24 12:50
Total/NA	Analysis	Field Sampling		1	435786	BJ0R	EET CF	10/04/24 10:00

Client Sample ID: OW-220B
Lab Sample ID: 310-292086-7
Date Collected: 10/04/24 13:00
Matrix: Water
Date Received: 10/04/24 13:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	435843	WSE8	EET CF	10/11/24 06:10
Total/NA	Prep	8151A			560532	XU9L	ELLE	10/08/24 07:36
Total/NA	Analysis	8151A		5	560964	UAMZ	ELLE	10/09/24 08:03
Total/NA	Prep	3005A			435581	F5MW	EET CF	10/09/24 09:30
Total/NA	Analysis	6020B		1	436085	A6US	EET CF	10/11/24 19:57
Total/NA	Prep	3005A			435581	F5MW	EET CF	10/09/24 09:30
Total/NA	Analysis	6020B		1	436234	NFT2	EET CF	10/14/24 12:44
Total/NA	Analysis	I-3765-85		1	435425	DGU1	EET CF	10/07/24 12:50
Total/NA	Analysis	Field Sampling		1	435786	BJ0R	EET CF	10/04/24 13:00

Client Sample ID: Trip Blank
Lab Sample ID: 310-292086-8
Date Collected: 10/04/24 06:00
Matrix: Water
Date Received: 10/04/24 13:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	435843	WSE8	EET CF	10/11/24 02:45

Lab Chronicle

Client: AECOM
Job ID: 310-292086-1
Project/Site: Black Hawk County Landfill (IDNR)

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: AECOM
Job ID: 310-292086-1
Project/Site: Black Hawk County Landfill (IDNR)

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8260D		Water	1,2,4-Trichlorobenzene
8260D		Water	Allyl chloride
8260D		Water	Ethyl methacrylate
8260D		Water	m,p-Xylene
8260D		Water	o-Xylene
Field Sampling		Water	Field Turbidity

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Iowa	State	361	03-01-26

Method Summary

Client: AECOM
Job ID: 310-292086-1
Project/Site: Black Hawk County Landfill (IDNR)

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CF
8151A	Herbicides (GC)	SW846	ELLE
6020B	Metals (ICP/MS)	SW846	EET CF
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
Field Sampling	Field Sampling	EPA	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
5030B	Purge and Trap	SW846	EET CF
8151A	Extraction (Herbicides)	SW846	ELLE

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

eurofins | Environment Testing America

310-292086 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: AE Com

City/State: CITY Waterloo STATE PA Project:

Receipt Information

Date/Time Received: DATE 10/4/24 TIME 1320 Received By: PH

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☐ Lab Courier ☐ Lab Field Services ☑ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☑ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☐ Yes ☑ No *If yes:* Cooler # _____ of _____

Cooler Custody Seals Present? ☐ Yes ☑ No *If yes:* Cooler custody seals intact? ☐ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☑ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☑ Yes ☐ No *If yes:* Which VOA samples are in cooler? ↓

All

Temperature Record

Coolant: ☑ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: P Correction Factor (°C): 0

• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 7.6 Corrected Temp (°C): 7.6

• Sample Container Temperature

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☑ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☑ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE If yes, contact PM before proceeding If no, proceed with login

Additional Comments

Eurofins Cedar Falls
3019 Venture Way

Cedar Falls, IA 50613
phone 319 277.2401 fax 319.277.2425

Chain of Custody Record

eurofins Environment Testing America

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other IDNR

Eurofins Environment Testing America

Client Contact	Project Manager: Chris Oelkers	Site Contact:	Date: 10-4-24	COC No
AECOM	Email Christopher Oelkers@aecom.com	Lab Contact:	Carrier:	1 of 2 COCs
501 Sycamore Street, Suite 222	Tel/Fax:319-296-6878			TALS Project #
Waterloo, IA 50703	Analysis Turnaround Time			Sampler
(319) 232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(xxx) xxx-xxxx FAX	TAT if different from Below			Walk-in Client.
Project Name Black Hawk Co IDNR	☑ 2 weeks			Lab Sampling
Site Black Hawk County Landfill	☐ 1 week			Job / SDG No
P O #	☐ 2 days ☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Appendix I, TSS	Appendix II, TSS	2,4-D	4,4'-DDD	beta-BHC	delta BHC	Endosulfan I	Endosulfan sulfate	Endrin aldehyde	Silvex	Sulfide	Sample Specific Notes
OW-220B	10-4-24	1300	G	GW	7	N		X		X							X		Turbidity - 8.22 NTU
OW-221B			G	GW		N		X											
OW-222B			G	GW		N		X											
OW-223B			G	GW		N		X											
OW-223B-FD			G	GW		N		X											
OW-224B			G	GW		N			X										
OW-225B			G	GW		N			X										
OW-226B			G	GW		N			X										
OW-227B			G	GW		N			X										
MW-319B			G	GW		N		X											
MW-320B			G	GW		N		X											
Equipment Blank-1			G	GW		N		X											

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No	Cooler Temp (°C) Obs'd._____ Corr'd._____ Therm ID No._____			
Relinquished by: Ben Porter	Company: Aecom	Date/Time: 10-4-24	Received by:	Company:	Date/Time
Relinquished by:	Company:	Date/Time	Received by:	Company:	Date/Time
Relinquished by:	Company:	Date/Time	Received in Laboratory by: CGL	Company: Eurofins	Date/Time: 10.4.24 1320

Eurofins Cedar Falls
3019 Venture Way

Cedar Falls, IA 50613
phone 319 277.2401 fax 319.277.2425

Chain of Custody Record

eurofins Environment Testing America

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other IDNR

Eurofins Environment Testing America

Client Contact	Project Manager: Chris Oelkers	Site Contact:	Date: 10-4-24	COC No
AECOM	Email Christopher Oelkers@aecom com			2 of 2 COCs
501 Sycamore Street, Suite 222	Tel/Fax:319-296-6878	Lab Contact:	Carrier:	TALS Project #
Waterloo, IA 50703	Analysis Turnaround Time			Sampler
(319) 232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(xxx) xxx-xxxx FAX	TAT if different from Below ____			Walk-in Client
Project Name Black Hawk Co IDNR	☑ 2 weeks			Lab Sampling
Site Black Hawk County Landfill	☐ 1 week			
P O #	☐ 2 days			Job / SDG No
	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	Appendix I, TSS	Appendix II, TSS	2,4-D	4,4'-DDD	beta-BHC	delta BHC	Endosulfan I	Endosulfan sulfate	Endrin aldehyde	Silvex	Sulfide	Sample Specific Notes
OW-101B			G	GW		N		X											
OW-105B			G	GW		N		X											
OW-113B			G	GW		N		X										X	
OW-114B			G	GW		N		X											
OW-205B			G	GW		N		X			X			X				X	
OW-209B			G	GW		N		X											
OW-209B-FD			G	GW		N		X											
OW-212B			G	GW		N		X											
OW-213BR	10-4-24	0920	G	GW	5	N		X											Turbidity – 0.62 NTU
OW-216BR			G	GW		N		X											
OW-219B	10-4-24	1000	G	GW	5	N		X											Turbidity – 5.01 NTU
Trip Blank	10-4-24	0600	G	W	3	N		X											

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for ____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No	Cooler Temp (°C) Obs'd.____ Corr'd.____	Therm ID No.____

Relinquished by: Ben Porter	Company: Aecom	Date/Time: 10-4-24	Received by:	Company:	Date/Time
Relinquished by:	Company:	Date/Time	Received by:	Company:	Date/Time
Relinquished by:	Company:	Date/Time	Received in Laboratory by: CGL	Company: Eurofins	Date/Time: 10-4-24 1320

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone: 319-277-2401 Fax: 319-277-2425

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Bindert, Zach T	Carrier Tracking No(s):	COC No: 310-77046.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Zach.Bindert@et.eurofinsus.com	State of Origin: Iowa	Page: Page 1 of 1
Company: Eurofins Lancaster Laboratories Environm		Accreditations Required (See note): State - Iowa; State Program - Iowa		Job #: 310-292086-1
Address: 2425 New Holland Pike, ,	Due Date Requested: 10/17/2024			Preservation Codes: -
City: Lancaster	TAT Requested (days):			
State, Zip: PA, 17601				
Phone: 717-656-2300(Tel)	PO #:			
Email:	WO #:			
Project Name: Black Hawk County Landfill (IDNR)	Project #: 31017149			
Site: 310 - Black Hawk County (IDNR)	SSOW#:			Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8151A/8151A_AP 2,4-D and Silvex	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
OW-220B (310-292086-7)	10/4/24	13.00 Central	G	Water			X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing North Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing North Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing North Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing North Central, LLC.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature]	10-4-24 1630				
2						
3				Debra A. Byers	10-5-24 10:00	ELLET

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: R 3.8 C 3.8

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-292086-1

Login Number: 292086

List Source: Eurofins Cedar Falls

List Number: 1

Creator: Collins, Charlotte G

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	False	Received same day of collection; chilling process has begun.
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-292086-1

Login Number: 292086
List Number: 2
Creator: Kanagy, Nicholas

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC
List Creation: 10/05/24 03:34 PM

Question	Answer	Comment
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature acceptable,where thermal pres is required(</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV:Container Temp acceptable,where thermal pres is required (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
Sample custody seals are intact.	N/A	
VOA sample vials do not have headspace >6mm in diameter (none, if from WV)?	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Chris Oelkers
AECOM
501 Sycamore Street
Suite #222
Waterloo, Iowa 50703

Generated 10/24/2024 9:34:42 AM

JOB DESCRIPTION

Black Hawk County Landfill (IDNR)
Fall 2024

JOB NUMBER

310-292200-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



Generated
10/24/2024 9:34:42 AM

Authorized for release by
Zach Bindert, Senior Project Manager
Zach.Bindert@et.eurofinsus.com
(319)595-2016

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Job Narrative
310-292200-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 10/8/2024 9:15 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.4°C.

GC/MS VOA
Method 8260D: The following sample was collected in a properly preserved vial; however, the pH was outside the required criteria when verified by the laboratory. The sample was analyzed within the 7-day holding time specified for unpreserved samples: OW-224B (310-292200-3).

Method 8260D: The continuing calibration verification (CCV) associated with batch 310-435986 recovered above the upper control limit for Carbon disulfide(23.5%D) and 2-Chloro-1,3-butadiene (23.4%D). The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated sample is impacted: (CCV 310-435986/3).

Method 8260D: The initial calibration verification (ICV) result for batch 310-435986 was above the upper control limit. The affected analyte is: Iodomethane. Sample results were non-detects, and have been reported as qualified data.

Method 8260D: The following sample was collected in a properly preserved vial; however, the pH was outside the required criteria when verified by the laboratory. The sample was analyzed within the 7-day holding time specified for unpreserved samples: OW-224B (310-292200-3).

Method 8260D: The continuing calibration verification (CCV) associated with batch 310-436121 recovered above the upper control limit for 2-Chloro-1,3-butadiene (20.9%D). The samples associated with this CCV were non-detects for the affected analyte; therefore, the data have been reported. The associated sample is impacted: (CCV 310-436121/3).

Method 8260D: The initial calibration verification (ICV) result for batch 310-436121 was above the upper control limit. The affected analyte is: Iodomethane. Sample results were non-detects, and have been reported as qualified data.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC/MS Semi VOA
Method 8270E: Surrogate recovery for the following sample was outside control limits: OW-224B (310-292200-3). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8270E: The continuing calibration verification (CCV) associated with batch 310-436080 recovered above the upper control limit for 3,3'-Dimethylbenzidine (20.7%D) and Diallate Peak 2 (21.5%D). The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Method 8270E: The method blank for preparation batch 310-435704 and analytical batch 310-436080 contained Benzo[a]pyrene above the method detection limit. This target analyte concentration was less than the reporting limit (RL) in the method blank; therefore, re-extraction and/or re-analysis of samples was not performed.

Method 8270E: The laboratory control sample (LCS) for preparation batch 310-435704 and analytical batch 310-436080 recovered outside acceptance limits for 2,4-Dinitrophenol, 2,3,4,6-Tetrachlorophenol, 4,6-Dinitro-2-methylphenol and Pentachlorophenol. There was insufficient holding time to perform a re-extraction or re-analysis; therefore, the data have been reported.

Job ID: 310-292200-1 (Continued) Eurofins Cedar Falls

Method 8270E: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 310-435704 and analytical batch 310-436080 recovered outside control limits for multiple analytes.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Herbicides
Method 8151A: Surrogate recovery for the following sample was outside the upper control limit: OW-224B (310-292200-3). This sample did not contain any target analytes; therefore, re-extraction and/or re-analysis was not performed.

Method 8151A: The following sample was diluted due to the nature of the sample matrix: OW-224B (310-292200-3). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

PCBs
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Pesticides
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Field Service / Mobile Lab
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Sample Summary

Client: AECOM
Job ID: 310-292200-1
Project/Site: Black Hawk County Landfill (IDNR)

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-292200-1	OW-221B	Water	10/07/24 09:30	10/08/24 09:15
310-292200-2	OW-222B	Water	10/07/24 10:20	10/08/24 09:15
310-292200-3	OW-224B	Water	10/07/24 13:00	10/08/24 09:15
310-292200-4	Trip Blank	Water	10/07/24 06:00	10/08/24 09:15

Detection Summary

Client: AECOM
Job ID: 310-292200-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-221B — Lab Sample ID: 310-292200-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	4.63	J	10.0	3.10	ug/L	1		8260D	Total/NA
Benzene	0.856		0.500	0.220	ug/L	1		8260D	Total/NA
cis-1,2-Dichloroethene	1.29		1.00	0.210	ug/L	1		8260D	Total/NA
Arsenic	13.9		2.00	0.530	ug/L	1		6020B	Total/NA
Barium	575		2.00	0.660	ug/L	1		6020B	Total/NA
Cobalt	3.40		0.500	0.170	ug/L	1		6020B	Total/NA
Nickel	2.67	J	5.00	2.10	ug/L	1		6020B	Total/NA
Thallium	0.784	J	1.00	0.570	ug/L	1		6020B	Total/NA
Total Suspended Solids	71.0		15.0	11.1	mg/L	1		I-3765-85	Total/NA
Field Turbidity	11.65				NTU	1		Field Sampling	Total/NA

Client Sample ID: OW-222B — Lab Sample ID: 310-292200-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	3.73	J	10.0	3.10	ug/L	1		8260D	Total/NA
Arsenic	2.40		2.00	0.530	ug/L	1		6020B	Total/NA
Barium	154		2.00	0.660	ug/L	1		6020B	Total/NA
Chromium	2.27	J	5.00	1.20	ug/L	1		6020B	Total/NA
Cobalt	5.21		0.500	0.170	ug/L	1		6020B	Total/NA
Copper	3.72	J	5.00	1.80	ug/L	1		6020B	Total/NA
Nickel	3.66	J	5.00	2.10	ug/L	1		6020B	Total/NA
Thallium	0.981	J	1.00	0.570	ug/L	1		6020B	Total/NA
Total Suspended Solids	18.0		15.0	11.1	mg/L	1		I-3765-85	Total/NA
Field Turbidity	5.59				NTU	1		Field Sampling	Total/NA

Client Sample ID: OW-224B — Lab Sample ID: 310-292200-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dichlorobenzene	3.52		1.00	0.230	ug/L	1		8260D	Total/NA
2-Butanone (MEK)	5.07	J	10.0	2.10	ug/L	1		8260D	Total/NA
Acetone	10.5		10.0	3.10	ug/L	1		8260D	Total/NA
Benzene	4.21		0.500	0.220	ug/L	1		8260D	Total/NA
cis-1,2-Dichloroethene	0.260	J	1.00	0.210	ug/L	1		8260D	Total/NA
Thionazin	5.25	J	10.0	3.50	ug/L	1		8270E	Total/NA
Arsenic	7.70		2.00	0.530	ug/L	1		6020B	Total/NA
Barium	2570		8.00	2.64	ug/L	4		6020B	Total/NA
Cadmium	0.240		0.200	0.100	ug/L	1		6020B	Total/NA
Chromium	8.20		5.00	1.20	ug/L	1		6020B	Total/NA
Cobalt	23.0		0.500	0.170	ug/L	1		6020B	Total/NA
Copper	2.45	J	5.00	1.80	ug/L	1		6020B	Total/NA
Lead	1.74		0.500	0.260	ug/L	1		6020B	Total/NA
Nickel	116		5.00	2.10	ug/L	1		6020B	Total/NA
Thallium	1.37		1.00	0.570	ug/L	1		6020B	Total/NA
Vanadium	3.16	J	5.00	1.10	ug/L	1		6020B	Total/NA
Total Suspended Solids	25.0		15.0	11.1	mg/L	1		I-3765-85	Total/NA
Field Turbidity	22.29				NTU	1		Field Sampling	Total/NA

Client Sample ID: Trip Blank — Lab Sample ID: 310-292200-4

No Detections.

This Detection Summary does not include radiochemical test results.

Client: AECOM
Job ID: 310-292200-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-221B
Lab Sample ID: 310-292200-1
Date Collected: 10/07/24 09:30
Matrix: Water
Date Received: 10/08/24 09:15

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			10/12/24 04:02	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			10/12/24 04:02	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			10/12/24 04:02	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			10/12/24 04:02	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			10/12/24 04:02	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			10/12/24 04:02	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			10/12/24 04:02	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			10/12/24 04:02	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			10/12/24 04:02	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			10/12/24 04:02	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			10/12/24 04:02	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			10/12/24 04:02	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			10/12/24 04:02	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			10/12/24 04:02	1
2-Hexanone	<2.00		10.0	2.00	ug/L			10/12/24 04:02	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			10/12/24 04:02	1
Acetone	**4.63**	**J**	10.0	3.10	ug/L			10/12/24 04:02	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			10/12/24 04:02	1
Benzene	**0.856**		0.500	0.220	ug/L			10/12/24 04:02	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			10/12/24 04:02	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			10/12/24 04:02	1
Bromoform	<0.780		5.00	0.780	ug/L			10/12/24 04:02	1
Bromomethane	<1.10		4.00	1.10	ug/L			10/12/24 04:02	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			10/12/24 04:02	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			10/12/24 04:02	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			10/12/24 04:02	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			10/12/24 04:02	1
Chloroethane	<0.790		4.00	0.790	ug/L			10/12/24 04:02	1
Chloroform	<1.30		3.00	1.30	ug/L			10/12/24 04:02	1
Chloromethane	<0.610		3.00	0.610	ug/L			10/12/24 04:02	1
cis-1,2-Dichloroethene	**1.29**		1.00	0.210	ug/L			10/12/24 04:02	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			10/12/24 04:02	1
Dibromomethane	<0.330		1.00	0.330	ug/L			10/12/24 04:02	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			10/12/24 04:02	1
Iodomethane	<7.00		10.0	7.00	ug/L			10/12/24 04:02	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			10/12/24 04:02	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			10/12/24 04:02	1
o-Xylene	<0.400		1.00	0.400	ug/L			10/12/24 04:02	1
Styrene	<0.370		1.00	0.370	ug/L			10/12/24 04:02	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			10/12/24 04:02	1
Toluene	<0.430		1.00	0.430	ug/L			10/12/24 04:02	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			10/12/24 04:02	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			10/12/24 04:02	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			10/12/24 04:02	1
Trichloroethene	<0.430		1.00	0.430	ug/L			10/12/24 04:02	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			10/12/24 04:02	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			10/12/24 04:02	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			10/12/24 04:02	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			10/12/24 04:02	1

Client Sample ID: OW-221B
Lab Sample ID: 310-292200-1
Date Collected: 10/07/24 09:30
Matrix: Water
Date Received: 10/08/24 09:15

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*102*		*73 - 130*		*10/12/24 04:02*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*10/12/24 04:02*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*		*10/12/24 04:02*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		10/10/24 09:30	10/11/24 19:23	1
Arsenic	**13.9**		2.00	0.530	ug/L		10/10/24 09:30	10/11/24 19:23	1
Barium	**575**		2.00	0.660	ug/L		10/10/24 09:30	10/11/24 19:23	1
Beryllium	<0.330		1.00	0.330	ug/L		10/10/24 09:30	10/14/24 16:02	1
Cadmium	<0.100		0.200	0.100	ug/L		10/10/24 09:30	10/11/24 19:23	1
Chromium	<1.20		5.00	1.20	ug/L		10/10/24 09:30	10/11/24 19:23	1
Cobalt	**3.40**		0.500	0.170	ug/L		10/10/24 09:30	10/11/24 19:23	1
Copper	<1.80		5.00	1.80	ug/L		10/10/24 09:30	10/11/24 19:23	1
Lead	<0.260		0.500	0.260	ug/L		10/10/24 09:30	10/11/24 19:23	1
Nickel	**2.67**	**J**	5.00	2.10	ug/L		10/10/24 09:30	10/11/24 19:23	1
Selenium	<1.40		5.00	1.40	ug/L		10/10/24 09:30	10/11/24 19:23	1
Silver	<0.500		1.00	0.500	ug/L		10/10/24 09:30	10/11/24 19:23	1
Thallium	**0.784**	**J**	1.00	0.570	ug/L		10/10/24 09:30	10/18/24 13:45	1
Vanadium	<1.10		5.00	1.10	ug/L		10/10/24 09:30	10/11/24 19:23	1
Zinc	<9.70		20.0	9.70	ug/L		10/10/24 09:30	10/11/24 19:23	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**71.0**		15.0	11.1	mg/L			10/08/24 19:39	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**11.65**				NTU			10/07/24 09:30	1

Client: AECOM
Job ID: 310-292200-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-222B
Lab Sample ID: 310-292200-2
Date Collected: 10/07/24 10:20
Matrix: Water
Date Received: 10/08/24 09:15

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			10/12/24 04:25	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			10/12/24 04:25	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			10/12/24 04:25	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			10/12/24 04:25	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			10/12/24 04:25	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			10/12/24 04:25	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			10/12/24 04:25	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			10/12/24 04:25	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			10/12/24 04:25	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			10/12/24 04:25	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			10/12/24 04:25	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			10/12/24 04:25	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			10/12/24 04:25	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			10/12/24 04:25	1
2-Hexanone	<2.00		10.0	2.00	ug/L			10/12/24 04:25	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			10/12/24 04:25	1
Acetone	**3.73**	**J**	10.0	3.10	ug/L			10/12/24 04:25	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			10/12/24 04:25	1
Benzene	<0.220		0.500	0.220	ug/L			10/12/24 04:25	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			10/12/24 04:25	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			10/12/24 04:25	1
Bromoform	<0.780		5.00	0.780	ug/L			10/12/24 04:25	1
Bromomethane	<1.10		4.00	1.10	ug/L			10/12/24 04:25	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			10/12/24 04:25	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			10/12/24 04:25	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			10/12/24 04:25	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			10/12/24 04:25	1
Chloroethane	<0.790		4.00	0.790	ug/L			10/12/24 04:25	1
Chloroform	<1.30		3.00	1.30	ug/L			10/12/24 04:25	1
Chloromethane	<0.610		3.00	0.610	ug/L			10/12/24 04:25	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			10/12/24 04:25	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			10/12/24 04:25	1
Dibromomethane	<0.330		1.00	0.330	ug/L			10/12/24 04:25	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			10/12/24 04:25	1
Iodomethane	<7.00		10.0	7.00	ug/L			10/12/24 04:25	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			10/12/24 04:25	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			10/12/24 04:25	1
o-Xylene	<0.400		1.00	0.400	ug/L			10/12/24 04:25	1
Styrene	<0.370		1.00	0.370	ug/L			10/12/24 04:25	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			10/12/24 04:25	1
Toluene	<0.430		1.00	0.430	ug/L			10/12/24 04:25	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			10/12/24 04:25	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			10/12/24 04:25	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			10/12/24 04:25	1
Trichloroethene	<0.430		1.00	0.430	ug/L			10/12/24 04:25	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			10/12/24 04:25	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			10/12/24 04:25	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			10/12/24 04:25	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			10/12/24 04:25	1

Client: AECOM
Job ID: 310-292200-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-222B
Lab Sample ID: 310-292200-2
Date Collected: 10/07/24 10:20
Matrix: Water
Date Received: 10/08/24 09:15

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*103*		*73 - 130*		*10/12/24 04:25*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*10/12/24 04:25*	*1*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*		*10/12/24 04:25*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		10/10/24 09:30	10/11/24 19:25	1
Arsenic	**2.40**		2.00	0.530	ug/L		10/10/24 09:30	10/11/24 19:25	1
Barium	**154**		2.00	0.660	ug/L		10/10/24 09:30	10/14/24 16:06	1
Beryllium	<0.330		1.00	0.330	ug/L		10/10/24 09:30	10/14/24 16:06	1
Cadmium	<0.100		0.200	0.100	ug/L		10/10/24 09:30	10/11/24 19:25	1
Chromium	**2.27**	**J**	5.00	1.20	ug/L		10/10/24 09:30	10/11/24 19:25	1
Cobalt	**5.21**		0.500	0.170	ug/L		10/10/24 09:30	10/11/24 19:25	1
Copper	**3.72**	**J**	5.00	1.80	ug/L		10/10/24 09:30	10/11/24 19:25	1
Lead	<0.260		0.500	0.260	ug/L		10/10/24 09:30	10/11/24 19:25	1
Nickel	**3.66**	**J**	5.00	2.10	ug/L		10/10/24 09:30	10/11/24 19:25	1
Selenium	<1.40		5.00	1.40	ug/L		10/10/24 09:30	10/11/24 19:25	1
Silver	<0.500		1.00	0.500	ug/L		10/10/24 09:30	10/11/24 19:25	1
Thallium	**0.981**	**J**	1.00	0.570	ug/L		10/10/24 09:30	10/18/24 13:48	1
Vanadium	<1.10		5.00	1.10	ug/L		10/10/24 09:30	10/11/24 19:25	1
Zinc	<9.70		20.0	9.70	ug/L		10/10/24 09:30	10/11/24 19:25	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**18.0**		15.0	11.1	mg/L			10/08/24 19:39	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**5.59**				NTU			10/07/24 10:20	1

Client: AECOM
Job ID: 310-292200-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-224B
Lab Sample ID: 310-292200-3
Date Collected: 10/07/24 13:00
Matrix: Water
Date Received: 10/08/24 09:15

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			10/12/24 05:33	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			10/12/24 05:33	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			10/12/24 05:33	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			10/12/24 05:33	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			10/12/24 05:33	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			10/12/24 05:33	1
1,1-Dichloropropene	<0.430		1.00	0.430	ug/L			10/12/24 05:33	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			10/12/24 05:33	1
1,2,4-Trichlorobenzene	<0.750		5.00	0.750	ug/L			10/12/24 05:33	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			10/12/24 05:33	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			10/12/24 05:33	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			10/12/24 05:33	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			10/12/24 05:33	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			10/12/24 05:33	1
1,3-Dichlorobenzene	<0.300		1.00	0.300	ug/L			10/12/24 05:33	1
1,3-Dichloropropane	<0.400		1.00	0.400	ug/L			10/12/24 05:33	1
1,4-Dichlorobenzene	**3.52**		1.00	0.230	ug/L			10/12/24 05:33	1
2,2-Dichloropropane	<0.690		4.00	0.690	ug/L			10/12/24 05:33	1
2-Butanone (MEK)	**5.07**	**J**	10.0	2.10	ug/L			10/12/24 05:33	1
2-Hexanone	<2.00		10.0	2.00	ug/L			10/12/24 05:33	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			10/12/24 05:33	1
Acetone	**10.5**		10.0	3.10	ug/L			10/12/24 05:33	1
Acrolein	<3.60		10.0	3.60	ug/L			10/12/24 05:33	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			10/12/24 05:33	1
Allyl chloride	<0.700		2.00	0.700	ug/L			10/12/24 05:33	1
Benzene	**4.21**		0.500	0.220	ug/L			10/12/24 05:33	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			10/12/24 05:33	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			10/12/24 05:33	1
Bromoform	<0.780		5.00	0.780	ug/L			10/12/24 05:33	1
Bromomethane	<1.10		4.00	1.10	ug/L			10/12/24 05:33	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			10/12/24 05:33	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			10/12/24 05:33	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			10/12/24 05:33	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			10/12/24 05:33	1
Chloroethane	<0.790		4.00	0.790	ug/L			10/12/24 05:33	1
Chloroform	<1.30		3.00	1.30	ug/L			10/12/24 05:33	1
Chloromethane	<0.610		3.00	0.610	ug/L			10/12/24 05:33	1
Chloroprene	<0.230		1.00	0.230	ug/L			10/12/24 05:33	1
cis-1,2-Dichloroethene	**0.260**	**J**	1.00	0.210	ug/L			10/14/24 13:19	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			10/12/24 05:33	1
Dibromomethane	<0.330		1.00	0.330	ug/L			10/12/24 05:33	1
Dichlorodifluoromethane	<0.250		3.00	0.250	ug/L			10/12/24 05:33	1
Ethyl methacrylate	<0.680		2.00	0.680	ug/L			10/12/24 05:33	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			10/12/24 05:33	1
Iodomethane	<7.00		10.0	7.00	ug/L			10/12/24 05:33	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			10/12/24 05:33	1
Methacrylonitrile	<3.30		10.0	3.30	ug/L			10/12/24 05:33	1
Methyl methacrylate	<0.760		2.00	0.760	ug/L			10/12/24 05:33	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			10/12/24 05:33	1

Client Sample ID: OW-224B
Lab Sample ID: 310-292200-3
Date Collected: 10/07/24 13:00
Matrix: Water
Date Received: 10/08/24 09:15

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<3.00		5.00	3.00	ug/L			10/12/24 05:33	1
o-Xylene	<0.400		1.00	0.400	ug/L			10/12/24 05:33	1
Propionitrile	<3.40		10.0	3.40	ug/L			10/12/24 05:33	1
Styrene	<0.370		1.00	0.370	ug/L			10/12/24 05:33	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			10/12/24 05:33	1
Toluene	<0.430		1.00	0.430	ug/L			10/12/24 05:33	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			10/14/24 13:19	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			10/12/24 05:33	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			10/12/24 05:33	1
Trichloroethene	<0.430		1.00	0.430	ug/L			10/12/24 05:33	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			10/12/24 05:33	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			10/12/24 05:33	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			10/14/24 13:19	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			10/12/24 05:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*102*		*73 - 130*		*10/12/24 05:33*	*1*
Dibromofluoromethane (Surr)	*104*		*73 - 130*		*10/14/24 13:19*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*10/12/24 05:33*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*10/14/24 13:19*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*		*10/12/24 05:33*	*1*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*10/14/24 13:19*	*1*

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4,5-Tetrachlorobenzene	<0.540		10.0	0.540	ug/L		10/09/24 13:46	10/14/24 12:25	1
1,3,5-Trinitrobenzene	<2.30		10.0	2.30	ug/L		10/09/24 13:46	10/14/24 12:25	1
1,3-Dinitrobenzene	<3.20		10.0	3.20	ug/L		10/09/24 13:46	10/14/24 12:25	1
1,4-Naphthoquinone	<3.60		10.0	3.60	ug/L		10/09/24 13:46	10/14/24 12:25	1
1,4-phenylenediamine	<1.90		10.0	1.90	ug/L		10/09/24 13:46	10/14/24 12:25	1
1-Naphthylamine	<2.50		10.0	2.50	ug/L		10/09/24 13:46	10/14/24 12:25	1
2,3,4,6-Tetrachlorophenol	<5.30	*1 *-	10.0	5.30	ug/L		10/09/24 13:46	10/14/24 12:25	1
2,4,5-Trichlorophenol	<5.30	*1	10.0	5.30	ug/L		10/09/24 13:46	10/14/24 12:25	1
2,4,6-Trichlorophenol	<5.00	*1	10.0	5.00	ug/L		10/09/24 13:46	10/14/24 12:25	1
2,4-Dichlorophenol	<0.850		10.0	0.850	ug/L		10/09/24 13:46	10/14/24 12:25	1
2,4-Dimethylphenol	<0.580		10.0	0.580	ug/L		10/09/24 13:46	10/14/24 12:25	1
2,4-Dinitrophenol	<13.0	*1 *-	20.0	13.0	ug/L		10/09/24 13:46	10/14/24 12:25	1
2,4-Dinitrotoluene	<6.40		10.0	6.40	ug/L		10/09/24 13:46	10/14/24 12:25	1
2,6-Dichlorophenol	<0.690	*1	10.0	0.690	ug/L		10/09/24 13:46	10/14/24 12:25	1
2,6-Dinitrotoluene	<0.520		10.0	0.520	ug/L		10/09/24 13:46	10/14/24 12:25	1
2-Acetylaminofluorene	<2.70		10.0	2.70	ug/L		10/09/24 13:46	10/14/24 12:25	1
2-Chloronaphthalene	<0.640		10.0	0.640	ug/L		10/09/24 13:46	10/14/24 12:25	1
2-Chlorophenol	<0.540		10.0	0.540	ug/L		10/09/24 13:46	10/14/24 12:25	1
2-Methylnaphthalene	<0.590		10.0	0.590	ug/L		10/09/24 13:46	10/14/24 12:25	1
2-Methylphenol	<0.650		10.0	0.650	ug/L		10/09/24 13:46	10/14/24 12:25	1
2-Naphthylamine	<2.10		10.0	2.10	ug/L		10/09/24 13:46	10/14/24 12:25	1
2-Nitroaniline	<5.90		10.0	5.90	ug/L		10/09/24 13:46	10/14/24 12:25	1
2-Nitrophenol	<6.80		10.0	6.80	ug/L		10/09/24 13:46	10/14/24 12:25	1
3,3'-Dichlorobenzidine	<1.40		10.0	1.40	ug/L		10/09/24 13:46	10/14/24 12:25	1
3,3'-Dimethylbenzidine	<1.50		10.0	1.50	ug/L		10/09/24 13:46	10/14/24 12:25	1

Client: AECOM
Job ID: 310-292200-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-224B
Lab Sample ID: 310-292200-3
Date Collected: 10/07/24 13:00
Matrix: Water
Date Received: 10/08/24 09:15

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
3-Methylcholanthrene	<0.320		10.0	0.320	ug/L		10/09/24 13:46	10/14/24 12:25	1
3-Nitroaniline	<2.70		10.0	2.70	ug/L		10/09/24 13:46	10/14/24 12:25	1
4,6-Dinitro-2-methylphenol	<6.90	*1 *-	10.0	6.90	ug/L		10/09/24 13:46	10/14/24 12:25	1
4-Aminobiphenyl	<2.20		10.0	2.20	ug/L		10/09/24 13:46	10/14/24 12:25	1
4-Bromophenyl phenyl ether	<0.700		10.0	0.700	ug/L		10/09/24 13:46	10/14/24 12:25	1
4-Chloro-3-methylphenol	<0.840		10.0	0.840	ug/L		10/09/24 13:46	10/14/24 12:25	1
4-Chloroaniline	<0.620		10.0	0.620	ug/L		10/09/24 13:46	10/14/24 12:25	1
4-Chlorophenyl phenyl ether	<0.690		10.0	0.690	ug/L		10/09/24 13:46	10/14/24 12:25	1
Methylphenol, 3 & 4	<0.700		10.0	0.700	ug/L		10/09/24 13:46	10/14/24 12:25	1
4-Nitroaniline	<1.30		10.0	1.30	ug/L		10/09/24 13:46	10/14/24 12:25	1
4-Nitrophenol	<7.60	*1	10.0	7.60	ug/L		10/09/24 13:46	10/14/24 12:25	1
5-Nitro-o-toluidine	<2.80		10.0	2.80	ug/L		10/09/24 13:46	10/14/24 12:25	1
7,12-Dimethylbenz(a)anthracene	<1.90		10.0	1.90	ug/L		10/09/24 13:46	10/14/24 12:25	1
Acenaphthene	<0.640		10.0	0.640	ug/L		10/09/24 13:46	10/14/24 12:25	1
Acenaphthylene	<0.720		10.0	0.720	ug/L		10/09/24 13:46	10/14/24 12:25	1
Acetophenone	<0.690		10.0	0.690	ug/L		10/09/24 13:46	10/14/24 12:25	1
Anthracene	<0.870		10.0	0.870	ug/L		10/09/24 13:46	10/14/24 12:25	1
Benzo[a]anthracene	<0.850		10.0	0.850	ug/L		10/09/24 13:46	10/14/24 12:25	1
Benzo[a]pyrene	<8.10		10.0	8.10	ug/L		10/09/24 13:46	10/14/24 12:25	1
Benzo[b]fluoranthene	<4.90		10.0	4.90	ug/L		10/09/24 13:46	10/14/24 12:25	1
Benzo[g,h,i]perylene	<6.30		10.0	6.30	ug/L		10/09/24 13:46	10/14/24 12:25	1
Benzo[k]fluoranthene	<2.20		10.0	2.20	ug/L		10/09/24 13:46	10/14/24 12:25	1
Benzyl alcohol	<1.30		10.0	1.30	ug/L		10/09/24 13:46	10/14/24 12:25	1
Bis(2-chloroethoxy)methane	<0.760		10.0	0.760	ug/L		10/09/24 13:46	10/14/24 12:25	1
Bis(2-chloroethyl)ether	<0.820		10.0	0.820	ug/L		10/09/24 13:46	10/14/24 12:25	1
bis (2-chloroisopropyl) ether	<0.540		10.0	0.540	ug/L		10/09/24 13:46	10/14/24 12:25	1
Bis(2-ethylhexyl) phthalate	<5.50		10.0	5.50	ug/L		10/09/24 13:46	10/14/24 12:25	1
Butyl benzyl phthalate	<5.40		10.0	5.40	ug/L		10/09/24 13:46	10/14/24 12:25	1
Chlorobenzilate	<3.60		10.0	3.60	ug/L		10/09/24 13:46	10/14/24 12:25	1
Chrysene	<0.870		10.0	0.870	ug/L		10/09/24 13:46	10/14/24 12:25	1
Diallate	<4.00		10.0	4.00	ug/L		10/09/24 13:46	10/14/24 12:25	1
Dibenzo(a,h)anthracene	<3.90		10.0	3.90	ug/L		10/09/24 13:46	10/14/24 12:25	1
Dibenzofuran	<0.740		10.0	0.740	ug/L		10/09/24 13:46	10/14/24 12:25	1
Diethyl phthalate	<1.70		10.0	1.70	ug/L		10/09/24 13:46	10/14/24 12:25	1
Dimethoate	<3.60		10.0	3.60	ug/L		10/09/24 13:46	10/14/24 12:25	1
Dimethyl phthalate	<1.00		10.0	1.00	ug/L		10/09/24 13:46	10/14/24 12:25	1
Di-n-butyl phthalate	<5.60		10.0	5.60	ug/L		10/09/24 13:46	10/14/24 12:25	1
Di-n-octyl phthalate	<7.00		20.0	7.00	ug/L		10/09/24 13:46	10/14/24 12:25	1
Dinoseb	<2.40		10.0	2.40	ug/L		10/09/24 13:46	10/14/24 12:25	1
Diphenylamine	<6.00		10.0	6.00	ug/L		10/09/24 13:46	10/14/24 12:25	1
Disulfoton	<2.40		10.0	2.40	ug/L		10/09/24 13:46	10/14/24 12:25	1
Ethyl methanesulfonate	<3.60		10.0	3.60	ug/L		10/09/24 13:46	10/14/24 12:25	1
Ethyl Parathion	<2.20		10.0	2.20	ug/L		10/09/24 13:46	10/14/24 12:25	1
Famphur	<3.80		10.0	3.80	ug/L		10/09/24 13:46	10/14/24 12:25	1
Fluoranthene	<1.70		10.0	1.70	ug/L		10/09/24 13:46	10/14/24 12:25	1
Fluorene	<0.790		10.0	0.790	ug/L		10/09/24 13:46	10/14/24 12:25	1
Hexachlorobenzene	<0.700		10.0	0.700	ug/L		10/09/24 13:46	10/14/24 12:25	1
Hexachlorobutadiene	<0.860		10.0	0.860	ug/L		10/09/24 13:46	10/14/24 12:25	1
Hexachlorocyclopentadiene	<5.10		10.0	5.10	ug/L		10/09/24 13:46	10/14/24 12:25	1

Client Sample ID: OW-224B
Lab Sample ID: 310-292200-3
Date Collected: 10/07/24 13:00
Matrix: Water
Date Received: 10/08/24 09:15

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexachloroethane	<0.970		10.0	0.970	ug/L		10/09/24 13:46	10/14/24 12:25	1
Hexachloropropene	<2.60		10.0	2.60	ug/L		10/09/24 13:46	10/14/24 12:25	1
Indeno[1,2,3-cd]pyrene	<4.20		10.0	4.20	ug/L		10/09/24 13:46	10/14/24 12:25	1
Isodrin	<4.70		10.0	4.70	ug/L		10/09/24 13:46	10/14/24 12:25	1
Isophorone	<0.930		10.0	0.930	ug/L		10/09/24 13:46	10/14/24 12:25	1
Isosafrole	<2.30		10.0	2.30	ug/L		10/09/24 13:46	10/14/24 12:25	1
Kepone	<1.00		10.0	1.00	ug/L		10/09/24 13:46	10/14/24 12:25	1
Methapyrilene	<0.760		10.0	0.760	ug/L		10/09/24 13:46	10/14/24 12:25	1
Methyl methanesulfonate	<3.30		10.0	3.30	ug/L		10/09/24 13:46	10/14/24 12:25	1
Methyl parathion	<2.30		10.0	2.30	ug/L		10/09/24 13:46	10/14/24 12:25	1
Nitrobenzene	<0.800		10.0	0.800	ug/L		10/09/24 13:46	10/14/24 12:25	1
N-Nitrosodiethylamine	<3.40		10.0	3.40	ug/L		10/09/24 13:46	10/14/24 12:25	1
N-Nitrosodimethylamine	<0.720		10.0	0.720	ug/L		10/09/24 13:46	10/14/24 12:25	1
N-Nitrosodi-n-butylamine	<3.90		10.0	3.90	ug/L		10/09/24 13:46	10/14/24 12:25	1
N-Nitrosodi-n-propylamine	<0.920		10.0	0.920	ug/L		10/09/24 13:46	10/14/24 12:25	1
N-Nitrosodiphenylamine	<0.750		10.0	0.750	ug/L		10/09/24 13:46	10/14/24 12:25	1
N-Nitrosomethylethylamine	<4.90		10.0	4.90	ug/L		10/09/24 13:46	10/14/24 12:25	1
N-Nitrosopiperidine	<2.70		10.0	2.70	ug/L		10/09/24 13:46	10/14/24 12:25	1
N-Nitrosopyrrolidine	<3.60		10.0	3.60	ug/L		10/09/24 13:46	10/14/24 12:25	1
o,o',o''-Triethylphosphorothioate	<3.20		10.0	3.20	ug/L		10/09/24 13:46	10/14/24 12:25	1
o-Toluidine	<2.90		10.0	2.90	ug/L		10/09/24 13:46	10/14/24 12:25	1
p-Dimethylamino azobenzene	<2.20		10.0	2.20	ug/L		10/09/24 13:46	10/14/24 12:25	1
Pentachlorobenzene	<2.80		10.0	2.80	ug/L		10/09/24 13:46	10/14/24 12:25	1
Pentachloronitrobenzene	<5.80		10.0	5.80	ug/L		10/09/24 13:46	10/14/24 12:25	1
Pentachlorophenol	<9.60	*1 *-	10.0	9.60	ug/L		10/09/24 13:46	10/14/24 12:25	1
Phenacetin	<1.90		10.0	1.90	ug/L		10/09/24 13:46	10/14/24 12:25	1
Phenanthrene	<0.790		10.0	0.790	ug/L		10/09/24 13:46	10/14/24 12:25	1
Phenol	<1.10		10.0	1.10	ug/L		10/09/24 13:46	10/14/24 12:25	1
Phorate	<3.20		10.0	3.20	ug/L		10/09/24 13:46	10/14/24 12:25	1
Pronamide	<2.70		10.0	2.70	ug/L		10/09/24 13:46	10/14/24 12:25	1
Pyrene	<0.790		10.0	0.790	ug/L		10/09/24 13:46	10/14/24 12:25	1
Safrole	<2.80		10.0	2.80	ug/L		10/09/24 13:46	10/14/24 12:25	1
Thionazin	**5.25**	**J**	10.0	3.50	ug/L		10/09/24 13:46	10/14/24 12:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorophenol (Surr)	*30*		*25 - 110*	*10/09/24 13:46*	*10/14/24 12:25*	*1*
Phenol-d5 (Surr)	*25*		*21 - 110*	*10/09/24 13:46*	*10/14/24 12:25*	*1*
Nitrobenzene-d5 (Surr)	*40*	*S1-*	*45 - 129*	*10/09/24 13:46*	*10/14/24 12:25*	*1*
2-Fluorobiphenyl (Surr)	*42*		*39 - 118*	*10/09/24 13:46*	*10/14/24 12:25*	*1*
2,4,6-Tribromophenol (Surr)	*47*		*27 - 136*	*10/09/24 13:46*	*10/14/24 12:25*	*1*
Terphenyl-d14 (Surr)	*41*		*12 - 144*	*10/09/24 13:46*	*10/14/24 12:25*	*1*

Method: SW846 8015C - Nonhalogenated Organic using GC/FID (Direct Aqueous Injection)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetonitrile	<2600		10000	2600	ug/L			10/14/24 09:34	1
Isobutanol	<2400		10000	2400	ug/L			10/14/24 09:34	1

Method: SW846 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	<0.0238		0.0954	0.0238	ug/L		10/14/24 09:17	10/15/24 15:36	1

Client Sample ID: OW-224B
Lab Sample ID: 310-292200-3
Date Collected: 10/07/24 13:00
Matrix: Water
Date Received: 10/08/24 09:15

Method: SW846 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDE	<0.0286		0.0954	0.0286	ug/L		10/14/24 09:17	10/15/24 15:36	1
4,4'-DDT	<0.0191		0.0954	0.0191	ug/L		10/14/24 09:17	10/15/24 15:36	1
Aldrin	<0.0210		0.0954	0.0210	ug/L		10/14/24 09:17	10/15/24 15:36	1
alpha-BHC	<0.00954		0.0954	0.00954	ug/L		10/14/24 09:17	10/15/24 15:36	1
beta-BHC	<0.0401		0.0954	0.0401	ug/L		10/14/24 09:17	10/15/24 15:36	1
Chlordane (technical)	<0.372		1.91	0.372	ug/L		10/14/24 09:17	10/15/24 15:36	1
delta-BHC	<0.0305		0.0954	0.0305	ug/L		10/14/24 09:17	10/15/24 15:36	1
Dieldrin	<0.0200		0.0954	0.0200	ug/L		10/14/24 09:17	10/15/24 15:36	1
Endosulfan I	<0.0267		0.0954	0.0267	ug/L		10/14/24 09:17	10/15/24 15:36	1
Endosulfan II	<0.0248		0.0954	0.0248	ug/L		10/14/24 09:17	10/15/24 15:36	1
Endosulfan sulfate	<0.0172		0.0954	0.0172	ug/L		10/14/24 09:17	10/15/24 15:36	1
Endrin	<0.0267		0.0954	0.0267	ug/L		10/14/24 09:17	10/15/24 15:36	1
Endrin aldehyde	<0.0257		0.0954	0.0257	ug/L		10/14/24 09:17	10/15/24 15:36	1
gamma-BHC (Lindane)	<0.00954		0.0954	0.00954	ug/L		10/14/24 09:17	10/15/24 15:36	1
Heptachlor	<0.0219		0.0954	0.0219	ug/L		10/14/24 09:17	10/15/24 15:36	1
Heptachlor epoxide	<0.0305		0.0954	0.0305	ug/L		10/14/24 09:17	10/15/24 15:36	1
Methoxychlor	<0.0305		0.0954	0.0305	ug/L		10/14/24 09:17	10/15/24 15:36	1
Toxaphene	<0.954		1.91	0.954	ug/L		10/14/24 09:17	10/15/24 15:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*98*		*10 - 136*	*10/14/24 09:17*	*10/15/24 15:36*	*1*
Tetrachloro-m-xylene (Surr)	*75*		*10 - 130*	*10/14/24 09:17*	*10/15/24 15:36*	*1*

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.782		1.91	0.782	ug/L		10/14/24 09:17	10/15/24 15:36	1
PCB-1221	<0.782		1.91	0.782	ug/L		10/14/24 09:17	10/15/24 15:36	1
PCB-1232	<0.782		1.91	0.782	ug/L		10/14/24 09:17	10/15/24 15:36	1
PCB-1242	<0.782		1.91	0.782	ug/L		10/14/24 09:17	10/15/24 15:36	1
PCB-1248	<0.658		1.91	0.658	ug/L		10/14/24 09:17	10/15/24 15:36	1
PCB-1254	<0.658		1.91	0.658	ug/L		10/14/24 09:17	10/15/24 15:36	1
PCB-1260	<0.658		1.91	0.658	ug/L		10/14/24 09:17	10/15/24 15:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*98*		*10 - 136*	*10/14/24 09:17*	*10/15/24 15:36*	*1*
Tetrachloro-m-xylene (Surr)	*75*		*10 - 130*	*10/14/24 09:17*	*10/15/24 15:36*	*1*

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	<1.43		3.42	1.43	ug/L		10/10/24 19:38	10/11/24 14:58	5
Silvex (2,4,5-TP)	<0.126		0.285	0.126	ug/L		10/10/24 19:38	10/11/24 14:58	5
2,4,5-T	<0.371		0.856	0.371	ug/L		10/10/24 19:38	10/11/24 14:58	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*105*	*p*	*34 - 142*	*10/10/24 19:38*	*10/11/24 14:58*	*5*
DCAA	*175*	*S1+*	*34 - 142*	*10/10/24 19:38*	*10/11/24 14:58*	*5*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		10/10/24 09:30	10/11/24 19:36	1
Arsenic	**7.70**		2.00	0.530	ug/L		10/10/24 09:30	10/11/24 19:36	1

Client: AECOM
Job ID: 310-292200-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-224B
Lab Sample ID: 310-292200-3
Date Collected: 10/07/24 13:00
Matrix: Water
Date Received: 10/08/24 09:15

Method: SW846 6020B - Metals (ICP/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	**2570**		8.00	2.64	ug/L		10/10/24 09:30	10/14/24 16:25	4
Beryllium	<0.330		1.00	0.330	ug/L		10/10/24 09:30	10/17/24 13:43	1
Cadmium	**0.240**		0.200	0.100	ug/L		10/10/24 09:30	10/11/24 19:36	1
Chromium	**8.20**		5.00	1.20	ug/L		10/10/24 09:30	10/11/24 19:36	1
Cobalt	**23.0**		0.500	0.170	ug/L		10/10/24 09:30	10/11/24 19:36	1
Copper	**2.45**	**J**	5.00	1.80	ug/L		10/10/24 09:30	10/11/24 19:36	1
Lead	**1.74**		0.500	0.260	ug/L		10/10/24 09:30	10/11/24 19:36	1
Nickel	**116**		5.00	2.10	ug/L		10/10/24 09:30	10/11/24 19:36	1
Selenium	<1.40		5.00	1.40	ug/L		10/10/24 09:30	10/11/24 19:36	1
Silver	<0.500		1.00	0.500	ug/L		10/10/24 09:30	10/11/24 19:36	1
Thallium	**1.37**		1.00	0.570	ug/L		10/10/24 09:30	10/18/24 13:50	1
Vanadium	**3.16**	**J**	5.00	1.10	ug/L		10/10/24 09:30	10/11/24 19:36	1
Zinc	<9.70		20.0	9.70	ug/L		10/10/24 09:30	10/11/24 19:36	1
Tin	<2.30		5.00	2.30	ug/L		10/10/24 09:30	10/11/24 19:36	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.110		0.200	0.110	ug/L		10/15/24 15:55	10/16/24 10:28	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total (SW846 9012B)	<3.50		10.0	3.50	ug/L		10/10/24 10:18	10/10/24 17:44	1
Sulfide (SW846 9034)	<1.41		3.00	1.41	mg/L		10/10/24 12:42	10/10/24 15:58	1
Total Suspended Solids (USGS I-3765-85)	**25.0**		15.0	11.1	mg/L			10/08/24 19:39	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**22.29**				NTU			10/07/24 13:00	1

Client: AECOM
Job ID: 310-292200-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Trip Blank
Lab Sample ID: 310-292200-4
Date Collected: 10/07/24 06:00
Matrix: Water
Date Received: 10/08/24 09:15

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			10/12/24 01:02	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			10/12/24 01:02	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			10/12/24 01:02	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			10/12/24 01:02	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			10/12/24 01:02	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			10/12/24 01:02	1
1,1-Dichloropropene	<0.430		1.00	0.430	ug/L			10/12/24 01:02	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			10/12/24 01:02	1
1,2,4-Trichlorobenzene	<0.750		5.00	0.750	ug/L			10/12/24 01:02	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			10/12/24 01:02	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			10/12/24 01:02	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			10/12/24 01:02	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			10/12/24 01:02	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			10/12/24 01:02	1
1,3-Dichlorobenzene	<0.300		1.00	0.300	ug/L			10/12/24 01:02	1
1,3-Dichloropropane	<0.400		1.00	0.400	ug/L			10/12/24 01:02	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			10/12/24 01:02	1
2,2-Dichloropropane	<0.690		4.00	0.690	ug/L			10/12/24 01:02	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			10/12/24 01:02	1
2-Hexanone	<2.00		10.0	2.00	ug/L			10/12/24 01:02	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			10/12/24 01:02	1
Acetone	<3.10		10.0	3.10	ug/L			10/12/24 01:02	1
Acrolein	<3.60		10.0	3.60	ug/L			10/12/24 01:02	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			10/12/24 01:02	1
Allyl chloride	<0.700		2.00	0.700	ug/L			10/12/24 01:02	1
Benzene	<0.220		0.500	0.220	ug/L			10/12/24 01:02	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			10/12/24 01:02	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			10/12/24 01:02	1
Bromoform	<0.780		5.00	0.780	ug/L			10/12/24 01:02	1
Bromomethane	<1.10		4.00	1.10	ug/L			10/12/24 01:02	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			10/12/24 01:02	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			10/12/24 01:02	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			10/12/24 01:02	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			10/12/24 01:02	1
Chloroethane	<0.790		4.00	0.790	ug/L			10/12/24 01:02	1
Chloroform	<1.30		3.00	1.30	ug/L			10/12/24 01:02	1
Chloromethane	<0.610		3.00	0.610	ug/L			10/12/24 01:02	1
Chloroprene	<0.230		1.00	0.230	ug/L			10/12/24 01:02	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			10/12/24 01:02	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			10/12/24 01:02	1
Dibromomethane	<0.330		1.00	0.330	ug/L			10/12/24 01:02	1
Dichlorodifluoromethane	<0.250		3.00	0.250	ug/L			10/12/24 01:02	1
Ethyl methacrylate	<0.680		2.00	0.680	ug/L			10/12/24 01:02	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			10/12/24 01:02	1
Iodomethane	<7.00		10.0	7.00	ug/L			10/12/24 01:02	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			10/12/24 01:02	1
Methacrylonitrile	<3.30		10.0	3.30	ug/L			10/12/24 01:02	1
Methyl methacrylate	<0.760		2.00	0.760	ug/L			10/12/24 01:02	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			10/12/24 01:02	1

Client: AECOM
Job ID: 310-292200-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Trip Blank
Lab Sample ID: 310-292200-4
Date Collected: 10/07/24 06:00
Matrix: Water
Date Received: 10/08/24 09:15

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<3.00		5.00	3.00	ug/L			10/12/24 01:02	1
o-Xylene	<0.400		1.00	0.400	ug/L			10/12/24 01:02	1
Propionitrile	<3.40		10.0	3.40	ug/L			10/12/24 01:02	1
Styrene	<0.370		1.00	0.370	ug/L			10/12/24 01:02	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			10/12/24 01:02	1
Toluene	<0.430		1.00	0.430	ug/L			10/12/24 01:02	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			10/12/24 01:02	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			10/12/24 01:02	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			10/12/24 01:02	1
Trichloroethene	<0.430		1.00	0.430	ug/L			10/12/24 01:02	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			10/12/24 01:02	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			10/12/24 01:02	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			10/12/24 01:02	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			10/12/24 01:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*100*		*73 - 130*		*10/12/24 01:02*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*10/12/24 01:02*	*1*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*		*10/12/24 01:02*	*1*

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
*-	LCS and/or LCSD is outside acceptance limits, low biased.
*1	LCS/LCSD RPD exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1-	Surrogate recovery exceeds control limits, low biased.

GC Semi VOA

Qualifier	Qualifier Description
p	The %RPD between the primary and confirmation column/detector is >40%. The lower value has been reported.
S1+	Surrogate recovery exceeds control limits, high biased.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Surrogate Summary

Client: AECOM
Job ID: 310-292200-1
Project/Site: Black Hawk County Landfill (IDNR)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-292200-1	OW-221B	102	98	102
310-292200-1 MS	OW-221B	95	100	100
310-292200-1 MSD	OW-221B	96	100	98
310-292200-2	OW-222B	103	98	103
310-292200-3	OW-224B	102	98	102
310-292200-3	OW-224B	104	99	99
310-292200-4	Trip Blank	100	98	103
LCS 310-435986/6	Lab Control Sample	95	101	100
LCS 310-435986/7	Lab Control Sample	103	98	101
LCS 310-436121/6	Lab Control Sample	97	100	100
LCS 310-436121/7	Lab Control Sample	101	97	102
MB 310-435986/5	Method Blank	102	98	104
MB 310-436121/5	Method Blank	100	98	102

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		2FP	PHL	NBZ	FBP	TBP	TPHL
Lab Sample ID	Client Sample ID	(25-110)	(21-110)	(45-129)	(39-118)	(27-136)	(12-144)
310-292200-3	OW-224B	30	25	40 S1-	42	47	41
LCS 310-435704/2-A	Lab Control Sample	50	48	73	77	65	91
LCSD 310-435704/3-A	Lab Control Sample Dup	57	45	73	74	93	95
MB 310-435704/1-A	Method Blank	66	55	85	84	98	108

Surrogate Legend

2FP = 2-Fluorophenol (Surr)
PHL = Phenol-d5 (Surr)
NBZ = Nitrobenzene-d5 (Surr)
FBP = 2-Fluorobiphenyl (Surr)
TBP = 2,4,6-Tribromophenol (Surr)
TPHL = Terphenyl-d14 (Surr)

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		DCB1	TCX1
Lab Sample ID	Client Sample ID	(10-136)	(10-130)
310-292200-3	OW-224B	98	75
LB 310-435869/1-D	Method Blank	98	75
LCS 310-436103/21-A	Lab Control Sample	105	71
MB 310-436103/1-A	Method Blank	122	79

Surrogate Legend

DCB = DCB Decachlorobiphenyl (Surr)
TCX = Tetrachloro-m-xylene (Surr)

Surrogate Summary

Client: AECOM
Job ID: 310-292200-1
Project/Site: Black Hawk County Landfill (IDNR)

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)									
		DCB1	TCX1								
Lab Sample ID	Client Sample ID	(10-136)	(10-130)								
310-292200-3	OW-224B	98	75								
LCS 310-436103/22-A	Lab Control Sample	96	50								
MB 310-436103/1-A	Method Blank	122	79								

Surrogate Legend

DCB = DCB Decachlorobiphenyl (Surr)

TCX = Tetrachloro-m-xylene (Surr)

Method: 8151A - Herbicides (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)									
		DCPAA1	DCPAA2								
Lab Sample ID	Client Sample ID	(34-142)	(34-142)								
310-292200-3	OW-224B	105 p	175 S1+								
LCS 410-561937/2-A	Lab Control Sample	85	84								
LCSD 410-561937/3-A	Lab Control Sample Dup	82	87								
MB 410-561937/1-A	Method Blank	67	58								

Surrogate Legend

DCPAA = DCAA

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 310-435986/5
Matrix: Water
Analysis Batch: 435986

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			10/11/24 22:46	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			10/11/24 22:46	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			10/11/24 22:46	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			10/11/24 22:46	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			10/11/24 22:46	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			10/11/24 22:46	1
1,1-Dichloropropene	<0.430		1.00	0.430	ug/L			10/11/24 22:46	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			10/11/24 22:46	1
1,2,4-Trichlorobenzene	<0.750		5.00	0.750	ug/L			10/11/24 22:46	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			10/11/24 22:46	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			10/11/24 22:46	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			10/11/24 22:46	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			10/11/24 22:46	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			10/11/24 22:46	1
1,3-Dichlorobenzene	<0.300		1.00	0.300	ug/L			10/11/24 22:46	1
1,3-Dichloropropane	<0.400		1.00	0.400	ug/L			10/11/24 22:46	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			10/11/24 22:46	1
2,2-Dichloropropane	<0.690		4.00	0.690	ug/L			10/11/24 22:46	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			10/11/24 22:46	1
2-Hexanone	<2.00		10.0	2.00	ug/L			10/11/24 22:46	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			10/11/24 22:46	1
Acetone	<3.10		10.0	3.10	ug/L			10/11/24 22:46	1
Acrolein	<3.60		10.0	3.60	ug/L			10/11/24 22:46	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			10/11/24 22:46	1
Allyl chloride	<0.700		2.00	0.700	ug/L			10/11/24 22:46	1
Benzene	<0.220		0.500	0.220	ug/L			10/11/24 22:46	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			10/11/24 22:46	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			10/11/24 22:46	1
Bromoform	<0.780		5.00	0.780	ug/L			10/11/24 22:46	1
Bromomethane	<1.10		4.00	1.10	ug/L			10/11/24 22:46	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			10/11/24 22:46	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			10/11/24 22:46	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			10/11/24 22:46	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			10/11/24 22:46	1
Chloroethane	<0.790		4.00	0.790	ug/L			10/11/24 22:46	1
Chloroform	<1.30		3.00	1.30	ug/L			10/11/24 22:46	1
Chloromethane	<0.610		3.00	0.610	ug/L			10/11/24 22:46	1
Chloroprene	<0.230		1.00	0.230	ug/L			10/11/24 22:46	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			10/11/24 22:46	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			10/11/24 22:46	1
Dibromomethane	<0.330		1.00	0.330	ug/L			10/11/24 22:46	1
Dichlorodifluoromethane	<0.250		3.00	0.250	ug/L			10/11/24 22:46	1
Ethyl methacrylate	<0.680		2.00	0.680	ug/L			10/11/24 22:46	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			10/11/24 22:46	1
Iodomethane	<7.00		10.0	7.00	ug/L			10/11/24 22:46	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			10/11/24 22:46	1
Methacrylonitrile	<3.30		10.0	3.30	ug/L			10/11/24 22:46	1
Methyl methacrylate	<0.760		2.00	0.760	ug/L			10/11/24 22:46	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-435986/5
Matrix: Water
Analysis Batch: 435986

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylene Chloride	<1.70		5.00	1.70	ug/L			10/11/24 22:46	1
Naphthalene	<3.00		5.00	3.00	ug/L			10/11/24 22:46	1
o-Xylene	<0.400		1.00	0.400	ug/L			10/11/24 22:46	1
Propionitrile	<3.40		10.0	3.40	ug/L			10/11/24 22:46	1
Styrene	<0.370		1.00	0.370	ug/L			10/11/24 22:46	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			10/11/24 22:46	1
Toluene	<0.430		1.00	0.430	ug/L			10/11/24 22:46	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			10/11/24 22:46	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			10/11/24 22:46	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			10/11/24 22:46	1
Trichloroethene	<0.430		1.00	0.430	ug/L			10/11/24 22:46	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			10/11/24 22:46	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			10/11/24 22:46	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			10/11/24 22:46	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			10/11/24 22:46	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*102*		*73 - 130*		*10/11/24 22:46*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*10/11/24 22:46*	*1*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*		*10/11/24 22:46*	*1*

Lab Sample ID: LCS 310-435986/6
Matrix: Water
Analysis Batch: 435986

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	20.0	20.08		ug/L		100	71 - 120
1,1,1-Trichloroethane	20.0	23.34		ug/L		117	73 - 129
1,1,2,2-Tetrachloroethane	20.0	20.64		ug/L		103	68 - 124
1,1,2-Trichloroethane	20.0	21.28		ug/L		106	73 - 123
1,1-Dichloroethane	20.0	24.26		ug/L		121	70 - 127
1,1-Dichloroethene	20.0	25.88		ug/L		129	63 - 132
1,1-Dichloropropene	20.0	24.53		ug/L		123	69 - 132
1,2,3-Trichloropropane	20.0	20.06		ug/L		100	65 - 127
1,2,4-Trichlorobenzene	20.0	21.38		ug/L		107	68 - 124
1,2-Dibromo-3-Chloropropane	20.0	21.75		ug/L		109	50 - 150
1,2-Dibromoethane (EDB)	20.0	19.61		ug/L		98	75 - 125
1,2-Dichlorobenzene	20.0	21.07		ug/L		105	74 - 120
1,2-Dichloroethane	20.0	20.88		ug/L		104	71 - 125
1,2-Dichloropropane	20.0	23.28		ug/L		116	73 - 124
1,3-Dichlorobenzene	20.0	19.97		ug/L		100	72 - 120
1,3-Dichloropropane	20.0	21.42		ug/L		107	72 - 125
1,4-Dichlorobenzene	20.0	20.36		ug/L		102	72 - 120
2,2-Dichloropropane	20.0	22.88		ug/L		114	50 - 150
2-Butanone (MEK)	40.0	38.75		ug/L		97	50 - 150
2-Hexanone	40.0	40.00		ug/L		100	60 - 140
4-Methyl-2-pentanone (MIBK)	40.0	38.72		ug/L		97	60 - 139
Acetone	40.0	42.76		ug/L		107	50 - 150

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-435986/6
Matrix: Water
Analysis Batch: 435986

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Acrolein			95.5	99.54		ug/L		104	49 - 150		
Acrylonitrile			200	224.2		ug/L		112	50 - 150		
Allyl chloride			20.0	22.33		ug/L		112	49 - 150		
Benzene			20.0	23.26		ug/L		116	72 - 124		
Bromochloromethane			20.0	21.57		ug/L		108	73 - 130		
Bromodichloromethane			20.0	20.05		ug/L		100	74 - 122		
Bromoform			20.0	18.86		ug/L		94	61 - 122		
Carbon disulfide			20.0	25.99		ug/L		130	59 - 135		
Carbon tetrachloride			20.0	23.31		ug/L		117	67 - 132		
Chlorobenzene			20.0	20.98		ug/L		105	76 - 120		
Chlorodibromomethane			20.0	19.83		ug/L		99	71 - 121		
Chloroform			20.0	21.41		ug/L		107	72 - 125		
Chloroprene			20.0	25.01		ug/L		125	69 - 133		
cis-1,2-Dichloroethene			20.0	21.65		ug/L		108	74 - 123		
cis-1,3-Dichloropropene			20.0	21.71		ug/L		109	71 - 125		
Dibromomethane			20.0	20.85		ug/L		104	74 - 125		
Ethyl methacrylate			20.0	20.56		ug/L		103	70 - 129		
Ethylbenzene			20.0	21.95		ug/L		110	74 - 122		
Iodomethane			20.0	23.88		ug/L		119	10 - 150		
Methacrylonitrile			200	209.3		ug/L		105	69 - 129		
Methyl methacrylate			40.0	41.58		ug/L		104	68 - 131		
Methylene Chloride			20.0	24.66		ug/L		123	50 - 150		
Naphthalene			20.0	22.11		ug/L		111	50 - 150		
Propionitrile			200	209.9		ug/L		105	63 - 135		
Styrene			20.0	21.25		ug/L		106	74 - 121		
Tetrachloroethene			20.0	21.18		ug/L		106	71 - 130		
Toluene			20.0	21.16		ug/L		106	74 - 123		
trans-1,2-Dichloroethene			20.0	22.44		ug/L		112	70 - 126		
trans-1,3-Dichloropropene			20.0	19.94		ug/L		100	69 - 123		
trans-1,4-Dichloro-2-butene			20.0	19.34		ug/L		97	50 - 150		
Trichloroethene			20.0	22.19		ug/L		111	72 - 126		
Vinyl acetate			40.0	43.81		ug/L		110	50 - 150		
Xylenes, Total			40.0	42.18		ug/L		105	73 - 123		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*95*		*73 - 130*
Toluene-d8 (Surr)	*101*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*

Lab Sample ID: LCS 310-435986/7
Matrix: Water
Analysis Batch: 435986

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Bromomethane			20.0	20.37		ug/L		102	23 - 150		
Chloroethane			20.0	20.04		ug/L		100	54 - 136		
Chloromethane			20.0	19.99		ug/L		100	38 - 150		
Dichlorodifluoromethane			20.0	18.31		ug/L		92	39 - 150		

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-435986/7
Matrix: Water
Analysis Batch: 435986

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Trichlorofluoromethane			20.0	18.98		ug/L		95	54 - 149		
Vinyl chloride			20.0	19.78		ug/L		99	56 - 140		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*103*		*73 - 130*
Toluene-d8 (Surr)	*98*		*80 - 120*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*

Lab Sample ID: 310-292200-1 MS
Matrix: Water
Analysis Batch: 435986

Client Sample ID: OW-221B
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
1,1,1,2-Tetrachloroethane	<0.380		25.0	22.21		ug/L		89	55 - 130		
1,1,1-Trichloroethane	<0.190		25.0	24.58		ug/L		98	52 - 130		
1,1,2,2-Tetrachloroethane	<0.470		25.0	23.46		ug/L		94	54 - 130		
1,1,2-Trichloroethane	<0.450		25.0	23.74		ug/L		95	58 - 130		
1,1-Dichloroethane	<0.220		25.0	26.10		ug/L		104	49 - 130		
1,1-Dichloroethene	<0.560		25.0	29.25		ug/L		117	37 - 132		
1,1-Dichloropropene	<0.430		25.0	26.82		ug/L		107	50 - 132		
1,2,3-Trichloropropane	<0.590		25.0	23.60		ug/L		94	49 - 130		
1,2,4-Trichlorobenzene	<0.750		25.0	24.12		ug/L		96	55 - 130		
1,2-Dibromo-3-Chloropropane	<1.20		25.0	24.67		ug/L		99	38 - 150		
1,2-Dibromoethane (EDB)	<0.340		25.0	23.05		ug/L		92	60 - 130		
1,2-Dichlorobenzene	<0.370		25.0	22.85		ug/L		91	59 - 130		
1,2-Dichloroethane	<0.390		25.0	23.75		ug/L		95	51 - 130		
1,2-Dichloropropane	<0.270		25.0	25.73		ug/L		103	57 - 130		
1,3-Dichlorobenzene	<0.300		25.0	21.84		ug/L		87	57 - 130		
1,3-Dichloropropane	<0.400		25.0	24.02		ug/L		96	56 - 130		
1,4-Dichlorobenzene	<0.230		25.0	22.85		ug/L		91	57 - 130		
2,2-Dichloropropane	<0.690		25.0	22.28		ug/L		89	25 - 150		
2-Butanone (MEK)	<2.10		50.0	47.32		ug/L		95	38 - 150		
2-Hexanone	<2.00		50.0	48.18		ug/L		96	46 - 140		
4-Methyl-2-pentanone (MIBK)	<2.10		50.0	45.98		ug/L		92	47 - 139		
Acetone	4.63	J	50.0	49.09		ug/L		89	31 - 150		
Acrolein	<3.60		119	119.7		ug/L		100	25 - 150		
Acrylonitrile	<2.20		250	257.7		ug/L		103	40 - 150		
Allyl chloride	<0.700		25.0	27.03		ug/L		108	28 - 150		
Benzene	0.856		25.0	26.30		ug/L		102	46 - 130		
Bromochloromethane	<0.540		25.0	23.80		ug/L		95	57 - 130		
Bromodichloromethane	<0.390		25.0	23.00		ug/L		92	57 - 130		
Bromoform	<0.780		25.0	20.79		ug/L		83	44 - 130		
Carbon disulfide	<0.450		25.0	31.71		ug/L		127	38 - 135		
Carbon tetrachloride	<0.650		25.0	24.74		ug/L		99	45 - 132		
Chlorobenzene	<0.400		25.0	22.63		ug/L		91	59 - 130		
Chlorodibromomethane	<0.750		25.0	22.45		ug/L		90	54 - 130		
Chloroform	<1.30		25.0	22.91		ug/L		92	51 - 130		
Chloroprene	<0.230		25.0	27.92		ug/L		112	43 - 133		

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 310-292200-1 MS
Matrix: Water
Analysis Batch: 435986

Client Sample ID: OW-221B
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
cis-1,2-Dichloroethene	1.29		25.0	25.43		ug/L		97	45 - 130
cis-1,3-Dichloropropene	<0.250		25.0	23.51		ug/L		94	53 - 130
Dibromomethane	<0.330		25.0	24.05		ug/L		96	59 - 130
Ethyl methacrylate	<0.680		25.0	23.10		ug/L		92	54 - 130
Ethylbenzene	<0.310		25.0	22.92		ug/L		92	45 - 130
Iodomethane	<7.00		25.0	26.19		ug/L		105	10 - 150
Methacrylonitrile	<3.30		250	250.7		ug/L		100	55 - 130
Methyl methacrylate	<0.760		50.0	48.31		ug/L		97	44 - 139
Methylene Chloride	<1.70		25.0	26.44		ug/L		106	37 - 150
Naphthalene	<3.00		25.0	27.37		ug/L		109	40 - 150
Propionitrile	<3.40		250	250.3		ug/L		100	49 - 135
Styrene	<0.370		25.0	23.34		ug/L		93	47 - 130
Tetrachloroethene	<0.480		25.0	22.70		ug/L		91	47 - 130
Toluene	<0.430		25.0	22.60		ug/L		90	51 - 130
trans-1,2-Dichloroethene	<0.270		25.0	25.52		ug/L		102	48 - 130
trans-1,3-Dichloropropene	<0.560		25.0	21.94		ug/L		88	50 - 130
trans-1,4-Dichloro-2-butene	<1.10		25.0	22.32		ug/L		89	26 - 150
Trichloroethene	<0.430		25.0	23.77		ug/L		95	51 - 130
Vinyl acetate	<2.50		50.0	44.41		ug/L		89	29 - 150
Xylenes, Total	<0.400		50.0	44.47		ug/L		89	43 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*95*		*73 - 130*
Toluene-d8 (Surr)	*100*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*

Lab Sample ID: 310-292200-1 MSD
Matrix: Water
Analysis Batch: 435986

Client Sample ID: OW-221B
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	<0.380		25.0	21.83		ug/L		87	55 - 130	2	20
1,1,1-Trichloroethane	<0.190		25.0	23.88		ug/L		96	52 - 130	3	20
1,1,2,2-Tetrachloroethane	<0.470		25.0	23.30		ug/L		93	54 - 130	1	20
1,1,2-Trichloroethane	<0.450		25.0	23.51		ug/L		94	58 - 130	1	20
1,1-Dichloroethane	<0.220		25.0	25.95		ug/L		104	49 - 130	1	20
1,1-Dichloroethene	<0.560		25.0	27.39		ug/L		110	37 - 132	7	26
1,1-Dichloropropene	<0.430		25.0	26.03		ug/L		104	50 - 132	3	20
1,2,3-Trichloropropane	<0.590		25.0	23.17		ug/L		93	49 - 130	2	26
1,2,4-Trichlorobenzene	<0.750		25.0	24.21		ug/L		97	55 - 130	0	20
1,2-Dibromo-3-Chloropropane	<1.20		25.0	24.76		ug/L		99	38 - 150	0	20
1,2-Dibromoethane (EDB)	<0.340		25.0	22.29		ug/L		89	60 - 130	3	20
1,2-Dichlorobenzene	<0.370		25.0	22.23		ug/L		89	59 - 130	3	20
1,2-Dichloroethane	<0.390		25.0	23.27		ug/L		93	51 - 130	2	20
1,2-Dichloropropane	<0.270		25.0	25.60		ug/L		102	57 - 130	1	20
1,3-Dichlorobenzene	<0.300		25.0	21.65		ug/L		87	57 - 130	1	20
1,3-Dichloropropane	<0.400		25.0	23.41		ug/L		94	56 - 130	3	20
1,4-Dichlorobenzene	<0.230		25.0	21.75		ug/L		87	57 - 130	5	20

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 310-292200-1 MSD
Client Sample ID: OW-221B
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 435986

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,2-Dichloropropane	<0.690		25.0	21.62		ug/L		86	25 - 150	3	25
2-Butanone (MEK)	<2.10		50.0	49.79		ug/L		100	38 - 150	5	20
2-Hexanone	<2.00		50.0	48.30		ug/L		97	46 - 140	0	20
4-Methyl-2-pentanone (MIBK)	<2.10		50.0	47.09		ug/L		94	47 - 139	2	20
Acetone	4.63	J	50.0	47.63		ug/L		86	31 - 150	3	29
Acrolein	<3.60		119	120.3		ug/L		101	25 - 150	1	31
Acrylonitrile	<2.20		250	263.0		ug/L		105	40 - 150	2	20
Allyl chloride	<0.700		25.0	26.37		ug/L		105	28 - 150	2	35
Benzene	0.856		25.0	25.58		ug/L		99	46 - 130	3	20
Bromochloromethane	<0.540		25.0	23.00		ug/L		92	57 - 130	3	20
Bromodichloromethane	<0.390		25.0	22.29		ug/L		89	57 - 130	3	20
Bromoform	<0.780		25.0	20.70		ug/L		83	44 - 130	0	20
Carbon disulfide	<0.450		25.0	27.30		ug/L		109	38 - 135	15	30
Carbon tetrachloride	<0.650		25.0	24.12		ug/L		96	45 - 132	3	20
Chlorobenzene	<0.400		25.0	21.59		ug/L		86	59 - 130	5	20
Chlorodibromomethane	<0.750		25.0	21.66		ug/L		87	54 - 130	4	20
Chloroform	<1.30		25.0	22.40		ug/L		90	51 - 130	2	20
Chloroprene	<0.230		25.0	26.85		ug/L		107	43 - 133	4	20
cis-1,2-Dichloroethene	1.29		25.0	24.48		ug/L		93	45 - 130	4	20
cis-1,3-Dichloropropene	<0.250		25.0	22.83		ug/L		91	53 - 130	3	20
Dibromomethane	<0.330		25.0	23.44		ug/L		94	59 - 130	3	20
Ethyl methacrylate	<0.680		25.0	23.14		ug/L		93	54 - 130	0	20
Ethylbenzene	<0.310		25.0	22.45		ug/L		90	45 - 130	2	20
Iodomethane	<7.00		25.0	26.86		ug/L		107	10 - 150	3	35
Methacrylonitrile	<3.30		250	248.8		ug/L		100	55 - 130	1	20
Methyl methacrylate	<0.760		50.0	48.05		ug/L		96	44 - 139	1	20
Methylene Chloride	<1.70		25.0	26.01		ug/L		104	37 - 150	2	24
Naphthalene	<3.00		25.0	27.57		ug/L		110	40 - 150	1	30
Propionitrile	<3.40		250	247.8		ug/L		99	49 - 135	1	20
Styrene	<0.370		25.0	22.35		ug/L		89	47 - 130	4	20
Tetrachloroethene	<0.480		25.0	21.40		ug/L		86	47 - 130	6	20
Toluene	<0.430		25.0	22.15		ug/L		89	51 - 130	2	20
trans-1,2-Dichloroethene	<0.270		25.0	24.39		ug/L		98	48 - 130	5	22
trans-1,3-Dichloropropene	<0.560		25.0	21.40		ug/L		86	50 - 130	2	20
trans-1,4-Dichloro-2-butene	<1.10		25.0	22.20		ug/L		89	26 - 150	1	23
Trichloroethene	<0.430		25.0	22.91		ug/L		92	51 - 130	4	20
Vinyl acetate	<2.50		50.0	45.85		ug/L		92	29 - 150	3	23
Xylenes, Total	<0.400		50.0	43.89		ug/L		88	43 - 130	1	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*96*		*73 - 130*
Toluene-d8 (Surr)	*100*		*80 - 120*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-436121/5
Matrix: Water
Analysis Batch: 436121

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			10/14/24 09:47	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			10/14/24 09:47	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			10/14/24 09:47	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			10/14/24 09:47	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			10/14/24 09:47	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			10/14/24 09:47	1
1,1-Dichloropropene	<0.430		1.00	0.430	ug/L			10/14/24 09:47	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			10/14/24 09:47	1
1,2,4-Trichlorobenzene	<0.750		5.00	0.750	ug/L			10/14/24 09:47	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			10/14/24 09:47	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			10/14/24 09:47	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			10/14/24 09:47	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			10/14/24 09:47	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			10/14/24 09:47	1
1,3-Dichlorobenzene	<0.300		1.00	0.300	ug/L			10/14/24 09:47	1
1,3-Dichloropropane	<0.400		1.00	0.400	ug/L			10/14/24 09:47	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			10/14/24 09:47	1
2,2-Dichloropropane	<0.690		4.00	0.690	ug/L			10/14/24 09:47	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			10/14/24 09:47	1
2-Hexanone	<2.00		10.0	2.00	ug/L			10/14/24 09:47	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			10/14/24 09:47	1
Acetone	<3.10		10.0	3.10	ug/L			10/14/24 09:47	1
Acrolein	<3.60		10.0	3.60	ug/L			10/14/24 09:47	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			10/14/24 09:47	1
Allyl chloride	<0.700		2.00	0.700	ug/L			10/14/24 09:47	1
Benzene	<0.220		0.500	0.220	ug/L			10/14/24 09:47	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			10/14/24 09:47	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			10/14/24 09:47	1
Bromoform	<0.780		5.00	0.780	ug/L			10/14/24 09:47	1
Bromomethane	<1.10		4.00	1.10	ug/L			10/14/24 09:47	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			10/14/24 09:47	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			10/14/24 09:47	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			10/14/24 09:47	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			10/14/24 09:47	1
Chloroethane	<0.790		4.00	0.790	ug/L			10/14/24 09:47	1
Chloroform	<1.30		3.00	1.30	ug/L			10/14/24 09:47	1
Chloromethane	<0.610		3.00	0.610	ug/L			10/14/24 09:47	1
Chloroprene	<0.230		1.00	0.230	ug/L			10/14/24 09:47	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			10/14/24 09:47	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			10/14/24 09:47	1
Dibromomethane	<0.330		1.00	0.330	ug/L			10/14/24 09:47	1
Dichlorodifluoromethane	<0.250		3.00	0.250	ug/L			10/14/24 09:47	1
Ethyl methacrylate	<0.680		2.00	0.680	ug/L			10/14/24 09:47	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			10/14/24 09:47	1
Iodomethane	<7.00		10.0	7.00	ug/L			10/14/24 09:47	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			10/14/24 09:47	1
Methacrylonitrile	<3.30		10.0	3.30	ug/L			10/14/24 09:47	1
Methyl methacrylate	<0.760		2.00	0.760	ug/L			10/14/24 09:47	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-436121/5
Matrix: Water
Analysis Batch: 436121

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylene Chloride	<1.70		5.00	1.70	ug/L			10/14/24 09:47	1
Naphthalene	<3.00		5.00	3.00	ug/L			10/14/24 09:47	1
o-Xylene	<0.400		1.00	0.400	ug/L			10/14/24 09:47	1
Propionitrile	<3.40		10.0	3.40	ug/L			10/14/24 09:47	1
Styrene	<0.370		1.00	0.370	ug/L			10/14/24 09:47	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			10/14/24 09:47	1
Toluene	<0.430		1.00	0.430	ug/L			10/14/24 09:47	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			10/14/24 09:47	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			10/14/24 09:47	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			10/14/24 09:47	1
Trichloroethene	<0.430		1.00	0.430	ug/L			10/14/24 09:47	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			10/14/24 09:47	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			10/14/24 09:47	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			10/14/24 09:47	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			10/14/24 09:47	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*100*		*73 - 130*		*10/14/24 09:47*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*10/14/24 09:47*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*		*10/14/24 09:47*	*1*

Lab Sample ID: LCS 310-436121/6
Matrix: Water
Analysis Batch: 436121

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	20.0	19.90		ug/L		99	71 - 120
1,1,1-Trichloroethane	20.0	22.48		ug/L		112	73 - 129
1,1,2,2-Tetrachloroethane	20.0	20.54		ug/L		103	68 - 124
1,1,2-Trichloroethane	20.0	20.67		ug/L		103	73 - 123
1,1-Dichloroethane	20.0	23.26		ug/L		116	70 - 127
1,1-Dichloroethene	20.0	25.09		ug/L		125	63 - 132
1,1-Dichloropropene	20.0	23.43		ug/L		117	69 - 132
1,2,3-Trichloropropane	20.0	20.34		ug/L		102	65 - 127
1,2,4-Trichlorobenzene	20.0	20.56		ug/L		103	68 - 124
1,2-Dibromo-3-Chloropropane	20.0	21.41		ug/L		107	50 - 150
1,2-Dibromoethane (EDB)	20.0	19.60		ug/L		98	75 - 125
1,2-Dichlorobenzene	20.0	20.19		ug/L		101	74 - 120
1,2-Dichloroethane	20.0	20.36		ug/L		102	71 - 125
1,2-Dichloropropane	20.0	23.49		ug/L		117	73 - 124
1,3-Dichlorobenzene	20.0	19.08		ug/L		95	72 - 120
1,3-Dichloropropane	20.0	20.81		ug/L		104	72 - 125
1,4-Dichlorobenzene	20.0	20.07		ug/L		100	72 - 120
2,2-Dichloropropane	20.0	25.05		ug/L		125	50 - 150
2-Butanone (MEK)	40.0	40.47		ug/L		101	50 - 150
2-Hexanone	40.0	42.22		ug/L		106	60 - 140
4-Methyl-2-pentanone (MIBK)	40.0	39.89		ug/L		100	60 - 139
Acetone	40.0	38.70		ug/L		97	50 - 150

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-436121/6
Matrix: Water
Analysis Batch: 436121

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Acrolein			95.5	114.0		ug/L		119	49 - 150		
Acrylonitrile			200	224.3		ug/L		112	50 - 150		
Allyl chloride			20.0	22.19		ug/L		111	49 - 150		
Benzene			20.0	22.47		ug/L		112	72 - 124		
Bromochloromethane			20.0	20.23		ug/L		101	73 - 130		
Bromodichloromethane			20.0	20.09		ug/L		100	74 - 122		
Bromoform			20.0	18.31		ug/L		92	61 - 122		
Carbon disulfide			20.0	25.34		ug/L		127	59 - 135		
Carbon tetrachloride			20.0	22.53		ug/L		113	67 - 132		
Chlorobenzene			20.0	19.70		ug/L		98	76 - 120		
Chlorodibromomethane			20.0	19.55		ug/L		98	71 - 121		
Chloroform			20.0	20.20		ug/L		101	72 - 125		
Chloroprene			20.0	24.23		ug/L		121	69 - 133		
cis-1,2-Dichloroethene			20.0	20.63		ug/L		103	74 - 123		
cis-1,3-Dichloropropene			20.0	21.84		ug/L		109	71 - 125		
Dibromomethane			20.0	20.19		ug/L		101	74 - 125		
Ethyl methacrylate			20.0	20.42		ug/L		102	70 - 129		
Ethylbenzene			20.0	20.69		ug/L		103	74 - 122		
Iodomethane			20.0	23.95		ug/L		120	10 - 150		
Methacrylonitrile			200	217.8		ug/L		109	69 - 129		
Methyl methacrylate			40.0	42.14		ug/L		105	68 - 131		
Methylene Chloride			20.0	23.62		ug/L		118	50 - 150		
Naphthalene			20.0	21.74		ug/L		109	50 - 150		
Propionitrile			200	221.0		ug/L		110	63 - 135		
Styrene			20.0	20.18		ug/L		101	74 - 121		
Tetrachloroethene			20.0	20.33		ug/L		102	71 - 130		
Toluene			20.0	20.29		ug/L		101	74 - 123		
trans-1,2-Dichloroethene			20.0	22.00		ug/L		110	70 - 126		
trans-1,3-Dichloropropene			20.0	19.97		ug/L		100	69 - 123		
trans-1,4-Dichloro-2-butene			20.0	17.78		ug/L		89	50 - 150		
Trichloroethene			20.0	21.12		ug/L		106	72 - 126		
Vinyl acetate			40.0	46.69		ug/L		117	50 - 150		
Xylenes, Total			40.0	39.70		ug/L		99	73 - 123		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*97*		*73 - 130*
Toluene-d8 (Surr)	*100*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*

Lab Sample ID: LCS 310-436121/7
Matrix: Water
Analysis Batch: 436121

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Bromomethane			20.0	19.81		ug/L		99	23 - 150		
Chloroethane			20.0	19.26		ug/L		96	54 - 136		
Chloromethane			20.0	20.44		ug/L		102	38 - 150		
Dichlorodifluoromethane			20.0	17.83		ug/L		89	39 - 150		

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-436121/7
Matrix: Water
Analysis Batch: 436121

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Trichlorofluoromethane			20.0	18.65		ug/L		93	54 - 149		
Vinyl chloride			20.0	18.91		ug/L		95	56 - 140		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*101*		*73 - 130*
Toluene-d8 (Surr)	*97*		*80 - 120*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 310-435704/1-A
Matrix: Water
Analysis Batch: 436080

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 435704

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4,5-Tetrachlorobenzene	<0.540		10.0	0.540	ug/L		10/09/24 13:46	10/14/24 09:49	1
1,3,5-Trinitrobenzene	<2.30		10.0	2.30	ug/L		10/09/24 13:46	10/14/24 09:49	1
1,3-Dinitrobenzene	<3.20		10.0	3.20	ug/L		10/09/24 13:46	10/14/24 09:49	1
1,4-Naphthoquinone	<3.60		10.0	3.60	ug/L		10/09/24 13:46	10/14/24 09:49	1
1,4-phenylenediamine	<1.90		10.0	1.90	ug/L		10/09/24 13:46	10/14/24 09:49	1
1-Naphthylamine	<2.50		10.0	2.50	ug/L		10/09/24 13:46	10/14/24 09:49	1
2,3,4,6-Tetrachlorophenol	<5.30		10.0	5.30	ug/L		10/09/24 13:46	10/14/24 09:49	1
2,4,5-Trichlorophenol	<5.30		10.0	5.30	ug/L		10/09/24 13:46	10/14/24 09:49	1
2,4,6-Trichlorophenol	<5.00		10.0	5.00	ug/L		10/09/24 13:46	10/14/24 09:49	1
2,4-Dichlorophenol	<0.850		10.0	0.850	ug/L		10/09/24 13:46	10/14/24 09:49	1
2,4-Dimethylphenol	<0.580		10.0	0.580	ug/L		10/09/24 13:46	10/14/24 09:49	1
2,4-Dinitrophenol	<13.0		20.0	13.0	ug/L		10/09/24 13:46	10/14/24 09:49	1
2,4-Dinitrotoluene	<6.40		10.0	6.40	ug/L		10/09/24 13:46	10/14/24 09:49	1
2,6-Dichlorophenol	<0.690		10.0	0.690	ug/L		10/09/24 13:46	10/14/24 09:49	1
2,6-Dinitrotoluene	<0.520		10.0	0.520	ug/L		10/09/24 13:46	10/14/24 09:49	1
2-Acetylaminofluorene	<2.70		10.0	2.70	ug/L		10/09/24 13:46	10/14/24 09:49	1
2-Chloronaphthalene	<0.640		10.0	0.640	ug/L		10/09/24 13:46	10/14/24 09:49	1
2-Chlorophenol	<0.540		10.0	0.540	ug/L		10/09/24 13:46	10/14/24 09:49	1
2-Methylnaphthalene	<0.590		10.0	0.590	ug/L		10/09/24 13:46	10/14/24 09:49	1
2-Methylphenol	<0.650		10.0	0.650	ug/L		10/09/24 13:46	10/14/24 09:49	1
2-Naphthylamine	<2.10		10.0	2.10	ug/L		10/09/24 13:46	10/14/24 09:49	1
2-Nitroaniline	<5.90		10.0	5.90	ug/L		10/09/24 13:46	10/14/24 09:49	1
2-Nitrophenol	<6.80		10.0	6.80	ug/L		10/09/24 13:46	10/14/24 09:49	1
3,3'-Dichlorobenzidine	<1.40		10.0	1.40	ug/L		10/09/24 13:46	10/14/24 09:49	1
3,3'-Dimethylbenzidine	<1.50		10.0	1.50	ug/L		10/09/24 13:46	10/14/24 09:49	1
3-Methylcholanthrene	<0.320		10.0	0.320	ug/L		10/09/24 13:46	10/14/24 09:49	1
3-Nitroaniline	<2.70		10.0	2.70	ug/L		10/09/24 13:46	10/14/24 09:49	1
4,6-Dinitro-2-methylphenol	<6.90		10.0	6.90	ug/L		10/09/24 13:46	10/14/24 09:49	1
4-Aminobiphenyl	<2.20		10.0	2.20	ug/L		10/09/24 13:46	10/14/24 09:49	1
4-Bromophenyl phenyl ether	<0.700		10.0	0.700	ug/L		10/09/24 13:46	10/14/24 09:49	1
4-Chloro-3-methylphenol	<0.840		10.0	0.840	ug/L		10/09/24 13:46	10/14/24 09:49	1
4-Chloroaniline	<0.620		10.0	0.620	ug/L		10/09/24 13:46	10/14/24 09:49	1
4-Chlorophenyl phenyl ether	<0.690		10.0	0.690	ug/L		10/09/24 13:46	10/14/24 09:49	1
Methylphenol, 3 & 4	<0.700		10.0	0.700	ug/L		10/09/24 13:46	10/14/24 09:49	1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 310-435704/1-A
Matrix: Water
Analysis Batch: 436080

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 435704

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Nitroaniline	<1.30		10.0	1.30	ug/L		10/09/24 13:46	10/14/24 09:49	1
4-Nitrophenol	<7.60		10.0	7.60	ug/L		10/09/24 13:46	10/14/24 09:49	1
5-Nitro-o-toluidine	<2.80		10.0	2.80	ug/L		10/09/24 13:46	10/14/24 09:49	1
7,12-Dimethylbenz(a)anthracene	<1.90		10.0	1.90	ug/L		10/09/24 13:46	10/14/24 09:49	1
Acenaphthene	<0.640		10.0	0.640	ug/L		10/09/24 13:46	10/14/24 09:49	1
Acenaphthylene	<0.720		10.0	0.720	ug/L		10/09/24 13:46	10/14/24 09:49	1
Acetophenone	<0.690		10.0	0.690	ug/L		10/09/24 13:46	10/14/24 09:49	1
Anthracene	<0.870		10.0	0.870	ug/L		10/09/24 13:46	10/14/24 09:49	1
Benzo[a]anthracene	0.9717	J	10.0	0.850	ug/L		10/09/24 13:46	10/14/24 09:49	1
Benzo[a]pyrene	<8.10		10.0	8.10	ug/L		10/09/24 13:46	10/14/24 09:49	1
Benzo[b]fluoranthene	<4.90		10.0	4.90	ug/L		10/09/24 13:46	10/14/24 09:49	1
Benzo[g,h,i]perylene	<6.30		10.0	6.30	ug/L		10/09/24 13:46	10/14/24 09:49	1
Benzo[k]fluoranthene	<2.20		10.0	2.20	ug/L		10/09/24 13:46	10/14/24 09:49	1
Benzyl alcohol	<1.30		10.0	1.30	ug/L		10/09/24 13:46	10/14/24 09:49	1
Bis(2-chloroethoxy)methane	<0.760		10.0	0.760	ug/L		10/09/24 13:46	10/14/24 09:49	1
Bis(2-chloroethyl)ether	<0.820		10.0	0.820	ug/L		10/09/24 13:46	10/14/24 09:49	1
bis (2-chloroisopropyl) ether	<0.540		10.0	0.540	ug/L		10/09/24 13:46	10/14/24 09:49	1
Bis(2-ethylhexyl) phthalate	<5.50		10.0	5.50	ug/L		10/09/24 13:46	10/14/24 09:49	1
Butyl benzyl phthalate	<5.40		10.0	5.40	ug/L		10/09/24 13:46	10/14/24 09:49	1
Chlorobenzilate	<3.60		10.0	3.60	ug/L		10/09/24 13:46	10/14/24 09:49	1
Chrysene	<0.870		10.0	0.870	ug/L		10/09/24 13:46	10/14/24 09:49	1
Diallate	<4.00		10.0	4.00	ug/L		10/09/24 13:46	10/14/24 09:49	1
Dibenzo(a,h)anthracene	<3.90		10.0	3.90	ug/L		10/09/24 13:46	10/14/24 09:49	1
Dibenzofuran	<0.740		10.0	0.740	ug/L		10/09/24 13:46	10/14/24 09:49	1
Diethyl phthalate	<1.70		10.0	1.70	ug/L		10/09/24 13:46	10/14/24 09:49	1
Dimethoate	<3.60		10.0	3.60	ug/L		10/09/24 13:46	10/14/24 09:49	1
Dimethyl phthalate	<1.00		10.0	1.00	ug/L		10/09/24 13:46	10/14/24 09:49	1
Di-n-butyl phthalate	<5.60		10.0	5.60	ug/L		10/09/24 13:46	10/14/24 09:49	1
Di-n-octyl phthalate	<7.00		20.0	7.00	ug/L		10/09/24 13:46	10/14/24 09:49	1
Dinoseb	<2.40		10.0	2.40	ug/L		10/09/24 13:46	10/14/24 09:49	1
Diphenylamine	<6.00		10.0	6.00	ug/L		10/09/24 13:46	10/14/24 09:49	1
Disulfoton	<2.40		10.0	2.40	ug/L		10/09/24 13:46	10/14/24 09:49	1
Ethyl methanesulfonate	<3.60		10.0	3.60	ug/L		10/09/24 13:46	10/14/24 09:49	1
Ethyl Parathion	<2.20		10.0	2.20	ug/L		10/09/24 13:46	10/14/24 09:49	1
Famphur	<3.80		10.0	3.80	ug/L		10/09/24 13:46	10/14/24 09:49	1
Fluoranthene	<1.70		10.0	1.70	ug/L		10/09/24 13:46	10/14/24 09:49	1
Fluorene	<0.790		10.0	0.790	ug/L		10/09/24 13:46	10/14/24 09:49	1
Hexachlorobenzene	<0.700		10.0	0.700	ug/L		10/09/24 13:46	10/14/24 09:49	1
Hexachlorobutadiene	<0.860		10.0	0.860	ug/L		10/09/24 13:46	10/14/24 09:49	1
Hexachlorocyclopentadiene	<5.10		10.0	5.10	ug/L		10/09/24 13:46	10/14/24 09:49	1
Hexachloroethane	<0.970		10.0	0.970	ug/L		10/09/24 13:46	10/14/24 09:49	1
Hexachloropropene	<2.60		10.0	2.60	ug/L		10/09/24 13:46	10/14/24 09:49	1
Indeno[1,2,3-cd]pyrene	<4.20		10.0	4.20	ug/L		10/09/24 13:46	10/14/24 09:49	1
Isodrin	<4.70		10.0	4.70	ug/L		10/09/24 13:46	10/14/24 09:49	1
Isophorone	<0.930		10.0	0.930	ug/L		10/09/24 13:46	10/14/24 09:49	1
Isosafrole	<2.30		10.0	2.30	ug/L		10/09/24 13:46	10/14/24 09:49	1
Kepone	<1.00		10.0	1.00	ug/L		10/09/24 13:46	10/14/24 09:49	1
Methapyrilene	<0.760		10.0	0.760	ug/L		10/09/24 13:46	10/14/24 09:49	1
Methyl methanesulfonate	<3.30		10.0	3.30	ug/L		10/09/24 13:46	10/14/24 09:49	1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 310-435704/1-A
Matrix: Water
Analysis Batch: 436080

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 435704

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl parathion	<2.30		10.0	2.30	ug/L		10/09/24 13:46	10/14/24 09:49	1
Nitrobenzene	<0.800		10.0	0.800	ug/L		10/09/24 13:46	10/14/24 09:49	1
N-Nitrosodiethylamine	<3.40		10.0	3.40	ug/L		10/09/24 13:46	10/14/24 09:49	1
N-Nitrosodimethylamine	<0.720		10.0	0.720	ug/L		10/09/24 13:46	10/14/24 09:49	1
N-Nitrosodi-n-butylamine	<3.90		10.0	3.90	ug/L		10/09/24 13:46	10/14/24 09:49	1
N-Nitrosodi-n-propylamine	<0.920		10.0	0.920	ug/L		10/09/24 13:46	10/14/24 09:49	1
N-Nitrosodiphenylamine	<0.750		10.0	0.750	ug/L		10/09/24 13:46	10/14/24 09:49	1
N-Nitrosomethylethylamine	<4.90		10.0	4.90	ug/L		10/09/24 13:46	10/14/24 09:49	1
N-Nitrosopiperidine	<2.70		10.0	2.70	ug/L		10/09/24 13:46	10/14/24 09:49	1
N-Nitrosopyrrolidine	<3.60		10.0	3.60	ug/L		10/09/24 13:46	10/14/24 09:49	1
o,o',o''-Triethylphosphorothioate	<3.20		10.0	3.20	ug/L		10/09/24 13:46	10/14/24 09:49	1
o-Toluidine	<2.90		10.0	2.90	ug/L		10/09/24 13:46	10/14/24 09:49	1
p-Dimethylamino azobenzene	<2.20		10.0	2.20	ug/L		10/09/24 13:46	10/14/24 09:49	1
Pentachlorobenzene	<2.80		10.0	2.80	ug/L		10/09/24 13:46	10/14/24 09:49	1
Pentachloronitrobenzene	<5.80		10.0	5.80	ug/L		10/09/24 13:46	10/14/24 09:49	1
Pentachlorophenol	<9.60		10.0	9.60	ug/L		10/09/24 13:46	10/14/24 09:49	1
Phenacetin	<1.90		10.0	1.90	ug/L		10/09/24 13:46	10/14/24 09:49	1
Phenanthrene	<0.790		10.0	0.790	ug/L		10/09/24 13:46	10/14/24 09:49	1
Phenol	<1.10		10.0	1.10	ug/L		10/09/24 13:46	10/14/24 09:49	1
Phorate	<3.20		10.0	3.20	ug/L		10/09/24 13:46	10/14/24 09:49	1
Pronamide	<2.70		10.0	2.70	ug/L		10/09/24 13:46	10/14/24 09:49	1
Pyrene	<0.790		10.0	0.790	ug/L		10/09/24 13:46	10/14/24 09:49	1
Safrole	<2.80		10.0	2.80	ug/L		10/09/24 13:46	10/14/24 09:49	1
Thionazin	<3.50		10.0	3.50	ug/L		10/09/24 13:46	10/14/24 09:49	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorophenol (Surr)	*66*		*25 - 110*	*10/09/24 13:46*	*10/14/24 09:49*	*1*
Phenol-d5 (Surr)	*55*		*21 - 110*	*10/09/24 13:46*	*10/14/24 09:49*	*1*
Nitrobenzene-d5 (Surr)	*85*		*45 - 129*	*10/09/24 13:46*	*10/14/24 09:49*	*1*
2-Fluorobiphenyl (Surr)	*84*		*39 - 118*	*10/09/24 13:46*	*10/14/24 09:49*	*1*
2,4,6-Tribromophenol (Surr)	*98*		*27 - 136*	*10/09/24 13:46*	*10/14/24 09:49*	*1*
Terphenyl-d14 (Surr)	*108*		*12 - 144*	*10/09/24 13:46*	*10/14/24 09:49*	*1*

Lab Sample ID: LCS 310-435704/2-A
Matrix: Water
Analysis Batch: 436080

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 435704

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2,4,5-Tetrachlorobenzene	100	60.60		ug/L		61	36 - 110
1,3-Dinitrobenzene	100	63.41		ug/L		63	45 - 138
2,3,4,6-Tetrachlorophenol	100	21.64	*-	ug/L		22	33 - 134
2,4,5-Trichlorophenol	100	53.98		ug/L		54	35 - 133
2,4,6-Trichlorophenol	100	40.49		ug/L		40	28 - 139
2,4-Dichlorophenol	100	70.74		ug/L		71	41 - 124
2,4-Dimethylphenol	100	58.90		ug/L		59	31 - 142
2,4-Dinitrophenol	200	<13.0	*-	ug/L		4	10 - 138
2,4-Dinitrotoluene	100	68.63		ug/L		69	47 - 137
2,6-Dichlorophenol	100	52.04		ug/L		52	30 - 130

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 310-435704/2-A
Matrix: Water
Analysis Batch: 436080

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 435704

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,6-Dinitrotoluene	100	66.71		ug/L		67	51 - 130
2-Chloronaphthalene	100	49.15		ug/L		49	37 - 110
2-Chlorophenol	100	61.93		ug/L		62	44 - 117
2-Methylnaphthalene	100	52.28		ug/L		52	33 - 110
2-Methylphenol	100	62.74		ug/L		63	47 - 118
2-Nitroaniline	100	56.66		ug/L		57	50 - 135
2-Nitrophenol	100	71.54		ug/L		72	41 - 129
3-Nitroaniline	100	70.32		ug/L		70	42 - 139
4,6-Dinitro-2-methylphenol	200	22.42	*-	ug/L		11	22 - 143
4-Bromophenyl phenyl ether	100	72.40		ug/L		72	45 - 119
4-Chloro-3-methylphenol	100	72.93		ug/L		73	49 - 130
4-Chloroaniline	100	61.66		ug/L		62	21 - 139
4-Chlorophenyl phenyl ether	100	63.48		ug/L		63	44 - 116
Methylphenol, 3 & 4	100	60.88		ug/L		61	46 - 117
4-Nitroaniline	100	52.83		ug/L		53	31 - 145
4-Nitrophenol	200	41.49		ug/L		21	18 - 110
Acenaphthene	100	63.02		ug/L		63	43 - 110
Acenaphthylene	100	59.14		ug/L		59	40 - 110
Acetophenone	100	60.76		ug/L		61	48 - 119
Anthracene	100	73.48		ug/L		73	51 - 120
Benzo[a]anthracene	100	68.07		ug/L		68	51 - 123
Benzo[a]pyrene	100	67.40		ug/L		67	48 - 125
Benzo[b]fluoranthene	100	66.12		ug/L		66	49 - 129
Benzo[g,h,i]perylene	100	60.84		ug/L		61	43 - 139
Benzo[k]fluoranthene	100	72.04		ug/L		72	47 - 130
Benzyl alcohol	100	57.04		ug/L		57	39 - 128
Bis(2-chloroethoxy)methane	100	54.35		ug/L		54	48 - 121
Bis(2-chloroethyl)ether	100	49.89		ug/L		50	43 - 123
bis (2-chloroisopropyl) ether	100	56.56		ug/L		57	34 - 123
Bis(2-ethylhexyl) phthalate	100	68.60		ug/L		69	43 - 143
Butyl benzyl phthalate	100	61.92		ug/L		62	46 - 135
Chrysene	100	70.52		ug/L		71	51 - 125
Dibenzo(a,h)anthracene	100	61.94		ug/L		62	38 - 149
Dibenzofuran	100	63.22		ug/L		63	45 - 112
Diethyl phthalate	100	62.42		ug/L		62	43 - 135
Dimethyl phthalate	100	62.66		ug/L		63	43 - 129
Di-n-butyl phthalate	100	68.27		ug/L		68	50 - 133
Di-n-octyl phthalate	100	58.16		ug/L		58	34 - 150
Diphenylamine	85.0	52.74		ug/L		62	48 - 122
Fluoranthene	100	72.60		ug/L		73	47 - 128
Fluorene	100	67.98		ug/L		68	45 - 119
Hexachlorobenzene	100	72.95		ug/L		73	48 - 119
Hexachlorobutadiene	100	56.90		ug/L		57	32 - 110
Hexachlorocyclopentadiene	100	38.22		ug/L		38	10 - 110
Hexachloroethane	100	40.26		ug/L		40	31 - 110
Indeno[1,2,3-cd]pyrene	100	60.34		ug/L		60	37 - 150
Isophorone	100	61.97		ug/L		62	50 - 125
Nitrobenzene	100	49.75		ug/L		50	47 - 116
N-Nitrosodimethylamine	100	49.15		ug/L		49	37 - 110

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 310-435704/2-A
Matrix: Water
Analysis Batch: 436080

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 435704

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
N-Nitrosodi-n-propylamine			100	57.65		ug/L		58	45 - 130		
N-Nitrosodiphenylamine			100	60.01		ug/L		60	49 - 121		
Pentachlorophenol			200	13.75	*-	ug/L		7	26 - 133		
Phenanthrene			100	73.56		ug/L		74	51 - 117		
Phenol			100	38.08		ug/L		38	29 - 110		
Pyrene			100	70.05		ug/L		70	48 - 127		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorophenol (Surr)	*50*		*25 - 110*
Phenol-d5 (Surr)	*48*		*21 - 110*
Nitrobenzene-d5 (Surr)	*73*		*45 - 129*
2-Fluorobiphenyl (Surr)	*77*		*39 - 118*
2,4,6-Tribromophenol (Surr)	*65*		*27 - 136*
Terphenyl-d14 (Surr)	*91*		*12 - 144*

Lab Sample ID: LCSD 310-435704/3-A
Matrix: Water
Analysis Batch: 436080

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 435704

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2,4,5-Tetrachlorobenzene			100	76.19		ug/L		76	36 - 110	23	35
1,3-Dinitrobenzene			100	79.66		ug/L		80	45 - 138	23	35
2,3,4,6-Tetrachlorophenol			100	85.67	*1	ug/L		86	33 - 134	119	35
2,4,5-Trichlorophenol			100	93.35	*1	ug/L		93	35 - 133	53	35
2,4,6-Trichlorophenol			100	87.90	*1	ug/L		88	28 - 139	74	35
2,4-Dichlorophenol			100	98.71		ug/L		99	41 - 124	33	35
2,4-Dimethylphenol			100	78.13		ug/L		78	31 - 142	28	35
2,4-Dinitrophenol			200	153.7	*1	ug/L		77	10 - 138	181	35
2,4-Dinitrotoluene			100	89.42		ug/L		89	47 - 137	26	35
2,6-Dichlorophenol			100	85.99	*1	ug/L		86	30 - 130	49	35
2,6-Dinitrotoluene			100	91.59		ug/L		92	51 - 130	31	35
2-Chloronaphthalene			100	60.53		ug/L		61	37 - 110	21	35
2-Chlorophenol			100	81.55		ug/L		82	44 - 117	27	35
2-Methylnaphthalene			100	63.48		ug/L		63	33 - 110	19	35
2-Methylphenol			100	76.54		ug/L		77	47 - 118	20	35
2-Nitroaniline			100	76.78		ug/L		77	50 - 135	30	35
2-Nitrophenol			100	89.17		ug/L		89	41 - 129	22	35
3-Nitroaniline			100	88.68		ug/L		89	42 - 139	23	35
4,6-Dinitro-2-methylphenol			200	173.9	*1	ug/L		87	22 - 143	154	35
4-Bromophenyl phenyl ether			100	89.01		ug/L		89	45 - 119	21	35
4-Chloro-3-methylphenol			100	90.24		ug/L		90	49 - 130	21	35
4-Chloroaniline			100	81.93		ug/L		82	21 - 139	28	35
4-Chlorophenyl phenyl ether			100	77.42		ug/L		77	44 - 116	20	35
Methylphenol, 3 & 4			100	77.43		ug/L		77	46 - 117	24	35
4-Nitroaniline			100	66.33		ug/L		66	31 - 145	23	35
4-Nitrophenol			200	100.2	*1	ug/L		50	18 - 110	83	35
Acenaphthene			100	77.14		ug/L		77	43 - 110	20	35
Acenaphthylene			100	73.87		ug/L		74	40 - 110	22	35

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 310-435704/3-A
Matrix: Water
Analysis Batch: 436080

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 435704

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Acetophenone			100	77.13		ug/L		77	48 - 119	24	35
Anthracene			100	93.12		ug/L		93	51 - 120	24	35
Benzo[a]anthracene			100	85.26		ug/L		85	51 - 123	22	35
Benzo[a]pyrene			100	85.47		ug/L		85	48 - 125	24	35
Benzo[b]fluoranthene			100	85.56		ug/L		86	49 - 129	26	35
Benzo[g,h,i]perylene			100	73.63		ug/L		74	43 - 139	19	35
Benzo[k]fluoranthene			100	90.22		ug/L		90	47 - 130	22	35
Benzyl alcohol			100	70.79		ug/L		71	39 - 128	22	35
Bis(2-chloroethoxy)methane			100	71.20		ug/L		71	48 - 121	27	35
Bis(2-chloroethyl)ether			100	63.12		ug/L		63	43 - 123	23	35
bis (2-chloroisopropyl) ether			100	70.24		ug/L		70	34 - 123	22	35
Bis(2-ethylhexyl) phthalate			100	84.72		ug/L		85	43 - 143	21	35
Butyl benzyl phthalate			100	78.91		ug/L		79	46 - 135	24	35
Chrysene			100	87.77		ug/L		88	51 - 125	22	35
Dibenzo(a,h)anthracene			100	76.19		ug/L		76	38 - 149	21	35
Dibenzofuran			100	76.95		ug/L		77	45 - 112	20	35
Diethyl phthalate			100	78.28		ug/L		78	43 - 135	23	35
Dimethyl phthalate			100	81.71		ug/L		82	43 - 129	26	35
Di-n-butyl phthalate			100	83.79		ug/L		84	50 - 133	20	35
Di-n-octyl phthalate			100	72.85		ug/L		73	34 - 150	22	35
Diphenylamine			85.0	66.44		ug/L		78	48 - 122	23	35
Fluoranthene			100	87.12		ug/L		87	47 - 128	18	35
Fluorene			100	81.36		ug/L		81	45 - 119	18	35
Hexachlorobenzene			100	89.08		ug/L		89	48 - 119	20	35
Hexachlorobutadiene			100	72.77		ug/L		73	32 - 110	24	35
Hexachlorocyclopentadiene			100	50.41		ug/L		50	10 - 110	28	35
Hexachloroethane			100	49.66		ug/L		50	31 - 110	21	35
Indeno[1,2,3-cd]pyrene			100	74.34		ug/L		74	37 - 150	21	35
Isophorone			100	79.31		ug/L		79	50 - 125	25	35
Nitrobenzene			100	62.42		ug/L		62	47 - 116	23	35
N-Nitrosodimethylamine			100	62.84		ug/L		63	37 - 110	24	35
N-Nitrosodi-n-propylamine			100	73.35		ug/L		73	45 - 130	24	35
N-Nitrosodiphenylamine			100	77.90		ug/L		78	49 - 121	26	35
Pentachlorophenol			200	178.0	*1	ug/L		89	26 - 133	171	35
Phenanthrene			100	92.50		ug/L		92	51 - 117	23	35
Phenol			100	44.36		ug/L		44	29 - 110	15	35
Pyrene			100	90.33		ug/L		90	48 - 127	25	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorophenol (Surr)	*57*		*25 - 110*
Phenol-d5 (Surr)	*45*		*21 - 110*
Nitrobenzene-d5 (Surr)	*73*		*45 - 129*
2-Fluorobiphenyl (Surr)	*74*		*39 - 118*
2,4,6-Tribromophenol (Surr)	*93*		*27 - 136*
Terphenyl-d14 (Surr)	*95*		*12 - 144*

Method: 8015C - Nonhalogenated Organic using GC/FID (Direct Aqueous Injection)

Lab Sample ID: MB 310-436077/4
Matrix: Water
Analysis Batch: 436077

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetonitrile	<2600		10000	2600	ug/L			10/14/24 08:18	1
Isobutanol	<2400		10000	2400	ug/L			10/14/24 08:18	1

Lab Sample ID: LCS 310-436077/5
Matrix: Water
Analysis Batch: 436077

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Acetonitrile	113000	133000		ug/L		117	67 - 132
Isobutanol	104000	112500		ug/L		108	80 - 121

Lab Sample ID: 310-292200-3 MS
Matrix: Water
Analysis Batch: 436077

Client Sample ID: OW-224B
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Acetonitrile	<2600		113000	115200		ug/L		102	60 - 138
Isobutanol	<2400		104000	104500		ug/L		100	72 - 131

Lab Sample ID: 310-292200-3 MSD
Matrix: Water
Analysis Batch: 436077

Client Sample ID: OW-224B
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Acetonitrile	<2600		113000	133200		ug/L		118	60 - 138	14	30
Isobutanol	<2400		104000	111400		ug/L		107	72 - 131	6	30

Method: 8081B - Organochlorine Pesticides (GC)

Lab Sample ID: LB 310-435869/1-D
Matrix: Water
Analysis Batch: 436243

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 436103

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	<0.0240		0.0962	0.0240	ug/L		10/14/24 09:17	10/15/24 15:59	1
4,4'-DDE	<0.0288		0.0962	0.0288	ug/L		10/14/24 09:17	10/15/24 15:59	1
4,4'-DDT	<0.0192		0.0962	0.0192	ug/L		10/14/24 09:17	10/15/24 15:59	1
Aldrin	<0.0212		0.0962	0.0212	ug/L		10/14/24 09:17	10/15/24 15:59	1
alpha-BHC	<0.00962		0.0962	0.00962	ug/L		10/14/24 09:17	10/15/24 15:59	1
beta-BHC	<0.0404		0.0962	0.0404	ug/L		10/14/24 09:17	10/15/24 15:59	1
Chlordane (technical)	<0.375		1.92	0.375	ug/L		10/14/24 09:17	10/15/24 15:59	1
delta-BHC	<0.0308		0.0962	0.0308	ug/L		10/14/24 09:17	10/15/24 15:59	1
Dieldrin	<0.0202		0.0962	0.0202	ug/L		10/14/24 09:17	10/15/24 15:59	1
Endosulfan I	<0.0269		0.0962	0.0269	ug/L		10/14/24 09:17	10/15/24 15:59	1
Endosulfan II	<0.0250		0.0962	0.0250	ug/L		10/14/24 09:17	10/15/24 15:59	1
Endosulfan sulfate	<0.0173		0.0962	0.0173	ug/L		10/14/24 09:17	10/15/24 15:59	1
Endrin	<0.0269		0.0962	0.0269	ug/L		10/14/24 09:17	10/15/24 15:59	1
Endrin aldehyde	<0.0260		0.0962	0.0260	ug/L		10/14/24 09:17	10/15/24 15:59	1
gamma-BHC (Lindane)	<0.00962		0.0962	0.00962	ug/L		10/14/24 09:17	10/15/24 15:59	1
Heptachlor	<0.0221		0.0962	0.0221	ug/L		10/14/24 09:17	10/15/24 15:59	1

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: LB 310-435869/1-D
Matrix: Water
Analysis Batch: 436243

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 436103

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor epoxide	<0.0308		0.0962	0.0308	ug/L		10/14/24 09:17	10/15/24 15:59	1
Methoxychlor	<0.0308		0.0962	0.0308	ug/L		10/14/24 09:17	10/15/24 15:59	1
Toxaphene	<0.962		1.92	0.962	ug/L		10/14/24 09:17	10/15/24 15:59	1

Surrogate	*LB %Recovery*	*LB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*98*		*10 - 136*	*10/14/24 09:17*	*10/15/24 15:59*	*1*
Tetrachloro-m-xylene (Surr)	*75*		*10 - 130*	*10/14/24 09:17*	*10/15/24 15:59*	*1*

Lab Sample ID: MB 310-436103/1-A
Matrix: Water
Analysis Batch: 436114

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 436103

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	<0.0244		0.0978	0.0244	ug/L		10/14/24 09:17	10/14/24 20:49	1
4,4'-DDE	<0.0293		0.0978	0.0293	ug/L		10/14/24 09:17	10/14/24 20:49	1
4,4'-DDT	<0.0196		0.0978	0.0196	ug/L		10/14/24 09:17	10/14/24 20:49	1
Aldrin	<0.0215		0.0978	0.0215	ug/L		10/14/24 09:17	10/14/24 20:49	1
alpha-BHC	<0.00978		0.0978	0.00978	ug/L		10/14/24 09:17	10/14/24 20:49	1
beta-BHC	<0.0411		0.0978	0.0411	ug/L		10/14/24 09:17	10/14/24 20:49	1
Chlordane (technical)	<0.381		1.96	0.381	ug/L		10/14/24 09:17	10/14/24 20:49	1
delta-BHC	<0.0313		0.0978	0.0313	ug/L		10/14/24 09:17	10/14/24 20:49	1
Dieldrin	<0.0205		0.0978	0.0205	ug/L		10/14/24 09:17	10/14/24 20:49	1
Endosulfan I	<0.0274		0.0978	0.0274	ug/L		10/14/24 09:17	10/14/24 20:49	1
Endosulfan II	<0.0254		0.0978	0.0254	ug/L		10/14/24 09:17	10/14/24 20:49	1
Endosulfan sulfate	<0.0176		0.0978	0.0176	ug/L		10/14/24 09:17	10/14/24 20:49	1
Endrin	<0.0274		0.0978	0.0274	ug/L		10/14/24 09:17	10/14/24 20:49	1
Endrin aldehyde	<0.0264		0.0978	0.0264	ug/L		10/14/24 09:17	10/14/24 20:49	1
gamma-BHC (Lindane)	<0.00978		0.0978	0.00978	ug/L		10/14/24 09:17	10/14/24 20:49	1
Heptachlor	<0.0225		0.0978	0.0225	ug/L		10/14/24 09:17	10/14/24 20:49	1
Heptachlor epoxide	<0.0313		0.0978	0.0313	ug/L		10/14/24 09:17	10/14/24 20:49	1
Methoxychlor	<0.0313		0.0978	0.0313	ug/L		10/14/24 09:17	10/14/24 20:49	1
Toxaphene	<0.978		1.96	0.978	ug/L		10/14/24 09:17	10/14/24 20:49	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*122*		*10 - 136*	*10/14/24 09:17*	*10/14/24 20:49*	*1*
Tetrachloro-m-xylene (Surr)	*79*		*10 - 130*	*10/14/24 09:17*	*10/14/24 20:49*	*1*

Lab Sample ID: LCS 310-436103/21-A
Matrix: Water
Analysis Batch: 436114

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 436103

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
4,4'-DDD	2.79	2.946		ug/L		105	36 - 149
4,4'-DDE	2.79	2.726		ug/L		98	34 - 130
4,4'-DDT	2.79	2.608		ug/L		93	23 - 150
Aldrin	2.79	1.874		ug/L		67	13 - 120
alpha-BHC	2.79	2.807		ug/L		101	36 - 127
beta-BHC	2.79	2.663		ug/L		95	37 - 136

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: LCS 310-436103/21-A
Matrix: Water
Analysis Batch: 436114

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 436103

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
delta-BHC			2.79	2.604		ug/L		93	33 - 134		
Dieldrin			2.79	2.951		ug/L		106	39 - 130		
Endosulfan I			2.79	1.578		ug/L		56	10 - 120		
Endosulfan II			2.79	1.843		ug/L		66	14 - 120		
Endosulfan sulfate			2.79	3.428		ug/L		123	36 - 147		
Endrin			2.79	2.852		ug/L		102	39 - 140		
Endrin aldehyde			2.79	2.859		ug/L		102	32 - 137		
gamma-BHC (Lindane)			2.79	2.757		ug/L		99	36 - 132		
Heptachlor			2.79	2.058		ug/L		74	27 - 120		
Heptachlor epoxide			2.79	2.969		ug/L		106	38 - 133		
Methoxychlor			2.79	3.002		ug/L		107	10 - 150		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl (Surr)	*105*		*10 - 136*
Tetrachloro-m-xylene (Surr)	*71*		*10 - 130*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 310-436103/1-A
Matrix: Water
Analysis Batch: 436116

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 436103

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.802		1.96	0.802	ug/L		10/14/24 09:17	10/14/24 20:49	1
PCB-1221	<0.802		1.96	0.802	ug/L		10/14/24 09:17	10/14/24 20:49	1
PCB-1232	<0.802		1.96	0.802	ug/L		10/14/24 09:17	10/14/24 20:49	1
PCB-1242	<0.802		1.96	0.802	ug/L		10/14/24 09:17	10/14/24 20:49	1
PCB-1248	<0.675		1.96	0.675	ug/L		10/14/24 09:17	10/14/24 20:49	1
PCB-1254	<0.675		1.96	0.675	ug/L		10/14/24 09:17	10/14/24 20:49	1
PCB-1260	<0.675		1.96	0.675	ug/L		10/14/24 09:17	10/14/24 20:49	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*122*		*10 - 136*	*10/14/24 09:17*	*10/14/24 20:49*	*1*
Tetrachloro-m-xylene (Surr)	*79*		*10 - 130*	*10/14/24 09:17*	*10/14/24 20:49*	*1*

Lab Sample ID: LCS 310-436103/22-A
Matrix: Water
Analysis Batch: 436111

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 436103

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
PCB-1016			28.0	22.95		ug/L		82	30 - 133		
PCB-1260			28.0	27.15		ug/L		97	31 - 133		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl (Surr)	*96*		*10 - 136*
Tetrachloro-m-xylene (Surr)	*50*		*10 - 130*

Method: 8151A - Herbicides (GC)

Lab Sample ID: MB 410-561937/1-A
Matrix: Water
Analysis Batch: 561966

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 561937

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	<0.250		0.600	0.250	ug/L		10/10/24 19:38	10/11/24 12:08	1
Silvex (2,4,5-TP)	<0.0220		0.0500	0.0220	ug/L		10/10/24 19:38	10/11/24 12:08	1
2,4,5-T	<0.0650		0.150	0.0650	ug/L		10/10/24 19:38	10/11/24 12:08	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*67*		*34 - 142*	*10/10/24 19:38*	*10/11/24 12:08*	*1*
DCAA	*58*		*34 - 142*	*10/10/24 19:38*	*10/11/24 12:08*	*1*

Lab Sample ID: LCS 410-561937/2-A
Matrix: Water
Analysis Batch: 561966

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 561937

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
2,4-D			2.50	2.727		ug/L		109	53 - 159		
Silvex (2,4,5-TP)			0.250	0.3139		ug/L		126	62 - 170		
2,4,5-T			0.250	0.3023		ug/L		121	57 - 171		

Surrogate			*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCAA			*85*		*34 - 142*
DCAA			*84*		*34 - 142*

Lab Sample ID: LCSD 410-561937/3-A
Matrix: Water
Analysis Batch: 561966

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 561937

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,4-D			2.50	2.658		ug/L		106	53 - 159	3	30
Silvex (2,4,5-TP)			0.250	0.3031		ug/L		121	62 - 170	3	30
2,4,5-T			0.250	0.2945		ug/L		118	57 - 171	3	30

Surrogate			*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
DCAA			*82*		*34 - 142*
DCAA			*87*		*34 - 142*

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-435735/1-A
Matrix: Water
Analysis Batch: 436085

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 435735

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		10/10/24 09:30	10/11/24 18:16	1
Arsenic	<0.530		2.00	0.530	ug/L		10/10/24 09:30	10/11/24 18:16	1
Barium	<0.660		2.00	0.660	ug/L		10/10/24 09:30	10/11/24 18:16	1
Cadmium	<0.100		0.200	0.100	ug/L		10/10/24 09:30	10/11/24 18:16	1
Chromium	<1.20		5.00	1.20	ug/L		10/10/24 09:30	10/11/24 18:16	1
Cobalt	<0.170		0.500	0.170	ug/L		10/10/24 09:30	10/11/24 18:16	1
Copper	<1.80		5.00	1.80	ug/L		10/10/24 09:30	10/11/24 18:16	1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 310-435735/1-A
Matrix: Water
Analysis Batch: 436085

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 435735

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	<0.260		0.500	0.260	ug/L		10/10/24 09:30	10/11/24 18:16	1
Nickel	<2.10		5.00	2.10	ug/L		10/10/24 09:30	10/11/24 18:16	1
Selenium	<1.40		5.00	1.40	ug/L		10/10/24 09:30	10/11/24 18:16	1
Silver	<0.500		1.00	0.500	ug/L		10/10/24 09:30	10/11/24 18:16	1
Vanadium	<1.10		5.00	1.10	ug/L		10/10/24 09:30	10/11/24 18:16	1
Zinc	<9.70		20.0	9.70	ug/L		10/10/24 09:30	10/11/24 18:16	1
Tin	<2.30		5.00	2.30	ug/L		10/10/24 09:30	10/11/24 18:16	1

Lab Sample ID: MB 310-435735/1-A
Matrix: Water
Analysis Batch: 436228

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 435735

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	<0.330		1.00	0.330	ug/L		10/10/24 09:30	10/14/24 14:39	1

Lab Sample ID: MB 310-435735/1-A
Matrix: Water
Analysis Batch: 436697

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 435735

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Thallium	<0.570		1.00	0.570	ug/L		10/10/24 09:30	10/17/24 12:41	1

Lab Sample ID: LCS 310-435735/2-A
Matrix: Water
Analysis Batch: 436085

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 435735

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	200	223.4		ug/L		112	80 - 120
Arsenic	200	212.6		ug/L		106	80 - 120
Barium	100	101.8		ug/L		102	80 - 120
Cadmium	100	101.0		ug/L		101	80 - 120
Chromium	100	104.9		ug/L		105	80 - 120
Cobalt	100	113.2		ug/L		113	80 - 120
Copper	200	221.7		ug/L		111	80 - 120
Lead	200	211.9		ug/L		106	80 - 120
Nickel	200	206.0		ug/L		103	80 - 120
Selenium	400	402.0		ug/L		101	80 - 120
Silver	100	105.6		ug/L		106	80 - 120
Vanadium	100	100.5		ug/L		100	80 - 120
Zinc	200	187.6		ug/L		94	80 - 120
Tin	200	217.9		ug/L		109	80 - 120

Lab Sample ID: LCS 310-435735/2-A
Matrix: Water
Analysis Batch: 436228

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 435735

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Beryllium	100	91.66		ug/L		92	80 - 120

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 310-435735/2-A
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 436697
Prep Batch: 435735

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Thallium	100	81.93		ug/L		82	80 - 120

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 310-436302/1-A
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 436469
Prep Batch: 436302

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.110		0.200	0.110	ug/L		10/15/24 15:55	10/16/24 09:32	1

Lab Sample ID: LCS 310-436302/2-A
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 436469
Prep Batch: 436302

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	1.67	1.767		ug/L		106	80 - 120

Method: 9012B - Cyanide, Total andor Amenable

Lab Sample ID: MB 310-435806/1-A
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 435882
Prep Batch: 435806

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	<3.50		10.0	3.50	ug/L		10/10/24 10:18	10/10/24 17:31	1

Lab Sample ID: LCS 310-435806/2-A
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 435882
Prep Batch: 435806

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	200	193.3		ug/L		97	90 - 110

Method: 9034 - Sulfide, Acid soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 240-630273/1-A
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 630341
Prep Batch: 630273

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.41		3.00	1.41	mg/L		10/10/24 12:42	10/10/24 15:58	1

Lab Sample ID: LCS 240-630273/2-A
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 630341
Prep Batch: 630273

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfide	8.00	8.000		mg/L		100	70 - 120

Client: AECOM
Job ID: 310-292200-1
Project/Site: Black Hawk County Landfill (IDNR)

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: MB 310-435596/1
Matrix: Water
Analysis Batch: 435596

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<3.70		5.00	3.70	mg/L			10/08/24 19:39	1

Lab Sample ID: LCS 310-435596/2
Matrix: Water
Analysis Batch: 435596

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	90.00		mg/L		90	81 - 116

QC Association Summary

Client: AECOM
Job ID: 310-292200-1
Project/Site: Black Hawk County Landfill (IDNR)

GC/MS VOA

Analysis Batch: 435986

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292200-1	OW-221B	Total/NA	Water	8260D	
310-292200-2	OW-222B	Total/NA	Water	8260D	
310-292200-3	OW-224B	Total/NA	Water	8260D	
310-292200-4	Trip Blank	Total/NA	Water	8260D	
MB 310-435986/5	Method Blank	Total/NA	Water	8260D	
LCS 310-435986/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-435986/7	Lab Control Sample	Total/NA	Water	8260D	
310-292200-1 MS	OW-221B	Total/NA	Water	8260D	
310-292200-1 MSD	OW-221B	Total/NA	Water	8260D	

Analysis Batch: 436121

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292200-3	OW-224B	Total/NA	Water	8260D	
MB 310-436121/5	Method Blank	Total/NA	Water	8260D	
LCS 310-436121/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-436121/7	Lab Control Sample	Total/NA	Water	8260D	

GC/MS Semi VOA

Prep Batch: 435704

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292200-3	OW-224B	Total/NA	Water	3510C	
MB 310-435704/1-A	Method Blank	Total/NA	Water	3510C	
LCS 310-435704/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 310-435704/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 436080

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292200-3	OW-224B	Total/NA	Water	8270E	435704
MB 310-435704/1-A	Method Blank	Total/NA	Water	8270E	435704
LCS 310-435704/2-A	Lab Control Sample	Total/NA	Water	8270E	435704
LCSD 310-435704/3-A	Lab Control Sample Dup	Total/NA	Water	8270E	435704

GC Semi VOA

Leach Batch: 435869

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LB 310-435869/1-D	Method Blank	Total/NA	Water	1311	

Analysis Batch: 436077

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292200-3	OW-224B	Total/NA	Water	8015C	
MB 310-436077/4	Method Blank	Total/NA	Water	8015C	
LCS 310-436077/5	Lab Control Sample	Total/NA	Water	8015C	
310-292200-3 MS	OW-224B	Total/NA	Water	8015C	
310-292200-3 MSD	OW-224B	Total/NA	Water	8015C	

Prep Batch: 436103

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292200-3	OW-224B	Total/NA	Water	3511	
LB 310-435869/1-D	Method Blank	Total/NA	Water	3511	435869
MB 310-436103/1-A	Method Blank	Total/NA	Water	3511	

GC Semi VOA (Continued)

Prep Batch: 436103 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 310-436103/21-A	Lab Control Sample	Total/NA	Water	3511	
LCS 310-436103/22-A	Lab Control Sample	Total/NA	Water	3511	

Analysis Batch: 436111

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 310-436103/22-A	Lab Control Sample	Total/NA	Water	8082A	436103

Analysis Batch: 436114

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 310-436103/1-A	Method Blank	Total/NA	Water	8081B	436103
LCS 310-436103/21-A	Lab Control Sample	Total/NA	Water	8081B	436103

Analysis Batch: 436116

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 310-436103/1-A	Method Blank	Total/NA	Water	8082A	436103

Analysis Batch: 436243

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292200-3	OW-224B	Total/NA	Water	8081B	436103
LB 310-435869/1-D	Method Blank	Total/NA	Water	8081B	436103

Analysis Batch: 436245

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292200-3	OW-224B	Total/NA	Water	8082A	436103

Prep Batch: 561937

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292200-3	OW-224B	Total/NA	Water	8151A	
MB 410-561937/1-A	Method Blank	Total/NA	Water	8151A	
LCS 410-561937/2-A	Lab Control Sample	Total/NA	Water	8151A	
LCSD 410-561937/3-A	Lab Control Sample Dup	Total/NA	Water	8151A	

Analysis Batch: 561966

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292200-3	OW-224B	Total/NA	Water	8151A	561937
MB 410-561937/1-A	Method Blank	Total/NA	Water	8151A	561937
LCS 410-561937/2-A	Lab Control Sample	Total/NA	Water	8151A	561937
LCSD 410-561937/3-A	Lab Control Sample Dup	Total/NA	Water	8151A	561937

Metals

Prep Batch: 435735

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292200-1	OW-221B	Total/NA	Water	3005A	
310-292200-2	OW-222B	Total/NA	Water	3005A	
310-292200-3	OW-224B	Total/NA	Water	3005A	
MB 310-435735/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-435735/2-A	Lab Control Sample	Total/NA	Water	3005A	

Metals

Analysis Batch: 436085

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292200-1	OW-221B	Total/NA	Water	6020B	435735
310-292200-2	OW-222B	Total/NA	Water	6020B	435735
310-292200-3	OW-224B	Total/NA	Water	6020B	435735
MB 310-435735/1-A	Method Blank	Total/NA	Water	6020B	435735
LCS 310-435735/2-A	Lab Control Sample	Total/NA	Water	6020B	435735

Analysis Batch: 436228

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292200-1	OW-221B	Total/NA	Water	6020B	435735
310-292200-2	OW-222B	Total/NA	Water	6020B	435735
310-292200-3	OW-224B	Total/NA	Water	6020B	435735
MB 310-435735/1-A	Method Blank	Total/NA	Water	6020B	435735
LCS 310-435735/2-A	Lab Control Sample	Total/NA	Water	6020B	435735

Prep Batch: 436302

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292200-3	OW-224B	Total/NA	Water	7470A	
MB 310-436302/1-A	Method Blank	Total/NA	Water	7470A	
LCS 310-436302/2-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 436469

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292200-3	OW-224B	Total/NA	Water	7470A	436302
MB 310-436302/1-A	Method Blank	Total/NA	Water	7470A	436302
LCS 310-436302/2-A	Lab Control Sample	Total/NA	Water	7470A	436302

Analysis Batch: 436697

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292200-3	OW-224B	Total/NA	Water	6020B	435735
MB 310-435735/1-A	Method Blank	Total/NA	Water	6020B	435735
LCS 310-435735/2-A	Lab Control Sample	Total/NA	Water	6020B	435735

Analysis Batch: 436888

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292200-1	OW-221B	Total/NA	Water	6020B	435735
310-292200-2	OW-222B	Total/NA	Water	6020B	435735
310-292200-3	OW-224B	Total/NA	Water	6020B	435735

General Chemistry

Analysis Batch: 435596

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292200-1	OW-221B	Total/NA	Water	I-3765-85	
310-292200-2	OW-222B	Total/NA	Water	I-3765-85	
310-292200-3	OW-224B	Total/NA	Water	I-3765-85	
MB 310-435596/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-435596/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Prep Batch: 435806

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292200-3	OW-224B	Total/NA	Water	9012B	

General Chemistry (Continued)

Prep Batch: 435806 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 310-435806/1-A	Method Blank	Total/NA	Water	9012B	
LCS 310-435806/2-A	Lab Control Sample	Total/NA	Water	9012B	

Analysis Batch: 435882

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292200-3	OW-224B	Total/NA	Water	9012B	435806
MB 310-435806/1-A	Method Blank	Total/NA	Water	9012B	435806
LCS 310-435806/2-A	Lab Control Sample	Total/NA	Water	9012B	435806

Prep Batch: 630273

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292200-3	OW-224B	Total/NA	Water	9030B	
MB 240-630273/1-A	Method Blank	Total/NA	Water	9030B	
LCS 240-630273/2-A	Lab Control Sample	Total/NA	Water	9030B	

Analysis Batch: 630341

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292200-3	OW-224B	Total/NA	Water	9034	630273
MB 240-630273/1-A	Method Blank	Total/NA	Water	9034	630273
LCS 240-630273/2-A	Lab Control Sample	Total/NA	Water	9034	630273

Field Service / Mobile Lab

Analysis Batch: 435786

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292200-1	OW-221B	Total/NA	Water	Field Sampling	
310-292200-2	OW-222B	Total/NA	Water	Field Sampling	
310-292200-3	OW-224B	Total/NA	Water	Field Sampling	

Lab Chronicle

Client: AECOM
Job ID: 310-292200-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-221B
Lab Sample ID: 310-292200-1
Date Collected: 10/07/24 09:30
Matrix: Water
Date Received: 10/08/24 09:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	435986	WSE8	EET CF	10/12/24 04:02
Total/NA	Prep	3005A			435735	F5MW	EET CF	10/10/24 09:30
Total/NA	Analysis	6020B		1	436228	A6US	EET CF	10/14/24 16:02
Total/NA	Prep	3005A			435735	F5MW	EET CF	10/10/24 09:30
Total/NA	Analysis	6020B		1	436085	A6US	EET CF	10/11/24 19:23
Total/NA	Prep	3005A			435735	F5MW	EET CF	10/10/24 09:30
Total/NA	Analysis	6020B		1	436888	NFT2	EET CF	10/18/24 13:45
Total/NA	Analysis	I-3765-85		1	435596	MDU9	EET CF	10/08/24 19:39
Total/NA	Analysis	Field Sampling		1	435786	BJ0R	EET CF	10/07/24 09:30

Client Sample ID: OW-222B
Lab Sample ID: 310-292200-2
Date Collected: 10/07/24 10:20
Matrix: Water
Date Received: 10/08/24 09:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	435986	WSE8	EET CF	10/12/24 04:25
Total/NA	Prep	3005A			435735	F5MW	EET CF	10/10/24 09:30
Total/NA	Analysis	6020B		1	436228	A6US	EET CF	10/14/24 16:06
Total/NA	Prep	3005A			435735	F5MW	EET CF	10/10/24 09:30
Total/NA	Analysis	6020B		1	436085	A6US	EET CF	10/11/24 19:25
Total/NA	Prep	3005A			435735	F5MW	EET CF	10/10/24 09:30
Total/NA	Analysis	6020B		1	436888	NFT2	EET CF	10/18/24 13:48
Total/NA	Analysis	I-3765-85		1	435596	MDU9	EET CF	10/08/24 19:39
Total/NA	Analysis	Field Sampling		1	435786	BJ0R	EET CF	10/07/24 10:20

Client Sample ID: OW-224B
Lab Sample ID: 310-292200-3
Date Collected: 10/07/24 13:00
Matrix: Water
Date Received: 10/08/24 09:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	435986	WSE8	EET CF	10/12/24 05:33
Total/NA	Analysis	8260D		1	436121	WSE8	EET CF	10/14/24 13:19
Total/NA	Prep	3510C			435704	AYK7	EET CF	10/09/24 13:46
Total/NA	Analysis	8270E		1	436080	L0FS	EET CF	10/14/24 12:25
Total/NA	Analysis	8015C		1	436077	V7YZ	EET CF	10/14/24 09:34
Total/NA	Prep	3511			436103	D2YP	EET CF	10/14/24 09:17
Total/NA	Analysis	8081B		1	436243	BW2O	EET CF	10/15/24 15:36
Total/NA	Prep	3511			436103	D2YP	EET CF	10/14/24 09:17
Total/NA	Analysis	8082A		1	436245	BW2O	EET CF	10/15/24 15:36
Total/NA	Prep	8151A			561937	UKL2	ELLE	10/10/24 19:38
Total/NA	Analysis	8151A		5	561966	UAMZ	ELLE	10/11/24 14:58
Total/NA	Prep	3005A			435735	F5MW	EET CF	10/10/24 09:30
Total/NA	Analysis	6020B		4	436228	A6US	EET CF	10/14/24 16:25

Lab Chronicle

Client: AECOM
Job ID: 310-292200-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-224B
Lab Sample ID: 310-292200-3
Date Collected: 10/07/24 13:00
Matrix: Water
Date Received: 10/08/24 09:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			435735	F5MW	EET CF	10/10/24 09:30
Total/NA	Analysis	6020B		1	436085	A6US	EET CF	10/11/24 19:36
Total/NA	Prep	3005A			435735	F5MW	EET CF	10/10/24 09:30
Total/NA	Analysis	6020B		1	436697	NFT2	EET CF	10/17/24 13:43
Total/NA	Prep	3005A			435735	F5MW	EET CF	10/10/24 09:30
Total/NA	Analysis	6020B		1	436888	NFT2	EET CF	10/18/24 13:50
Total/NA	Prep	7470A			436302	QTZ5	EET CF	10/15/24 15:55
Total/NA	Analysis	7470A		1	436469	QTZ5	EET CF	10/16/24 10:28
Total/NA	Prep	9012B			435806	ENB7	EET CF	10/10/24 10:18
Total/NA	Analysis	9012B		1	435882	ZJX4	EET CF	10/10/24 17:44
Total/NA	Prep	9030B			630273	PQD2	EET CLE	10/10/24 12:42
Total/NA	Analysis	9034		1	630341	PQD2	EET CLE	10/10/24 15:58
Total/NA	Analysis	I-3765-85		1	435596	MDU9	EET CF	10/08/24 19:39
Total/NA	Analysis	Field Sampling		1	435786	BJ0R	EET CF	10/07/24 13:00

Client Sample ID: Trip Blank
Lab Sample ID: 310-292200-4
Date Collected: 10/07/24 06:00
Matrix: Water
Date Received: 10/08/24 09:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	435986	WSE8	EET CF	10/12/24 01:02

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: AECOM
Job ID: 310-292200-1
Project/Site: Black Hawk County Landfill (IDNR)

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8260D		Water	1,2,4-Trichlorobenzene
8260D		Water	Allyl chloride
8260D		Water	Ethyl methacrylate
8260D		Water	m,p-Xylene
8260D		Water	o-Xylene
Field Sampling		Water	Field Turbidity

Laboratory: Eurofins Cleveland

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-28-25
Connecticut	State	PH-0806	12-31-26
Georgia	State	4062	02-27-25
Illinois	NELAP	200004	08-31-25
Iowa	State	421	06-01-25
Kentucky (UST)	State	112225	02-27-25
Kentucky (WW)	State	KY98016	12-30-24
Minnesota	NELAP	039-999-348	12-31-24
New Hampshire	NELAP	225024	09-30-25
New Jersey	NELAP	OH001	07-03-25
New York	NELAP	10975	04-02-25
Ohio VAP	State	ORELAP 4062	02-27-25
Oregon	NELAP	4062	02-27-25
Pennsylvania	NELAP	68-00340	08-31-25
Texas	NELAP	T104704517-22-19	08-31-25
USDA	US Federal Programs	P330-18-00281	01-05-27
Virginia	NELAP	460175	09-14-25
West Virginia DEP	State	210	12-31-24

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Iowa	State	361	03-01-26

Method Summary

Client: AECOM
Job ID: 310-292200-1
Project/Site: Black Hawk County Landfill (IDNR)

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CF
8270E	Semivolatile Organic Compounds (GC/MS)	SW846	EET CF
8015C	Nonhalogenated Organic using GC/FID (Direct Aqueous Injection)	SW846	EET CF
8081B	Organochlorine Pesticides (GC)	SW846	EET CF
8082A	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	EET CF
8151A	Herbicides (GC)	SW846	ELLE
6020B	Metals (ICP/MS)	SW846	EET CF
7470A	Mercury (CVAA)	SW846	EET CF
9012B	Cyanide, Total andor Amenable	SW846	EET CF
9034	Sulfide, Acid soluble and Insoluble (Titrimetric)	SW846	EET CLE
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
Field Sampling	Field Sampling	EPA	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET CF
3511	Microextraction of Organic Compounds	SW846	EET CF
5030B	Purge and Trap	SW846	EET CF
7470A	Preparation, Mercury	SW846	EET CF
8151A	Extraction (Herbicides)	SW846	ELLE
9012B	Cyanide, Total and/or Amenable, Distillation	SW846	EET CF
9030B	Sulfide, Distillation (Acid Soluble and Insoluble)	SW846	EET CLE

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

eurofins | Environment Testing America

310-292200 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client. AECOM			
City/State: CITY Waterloo	STATE IA	Project: BHC IDNR	
Receipt Information			
Date/Time Received: DATE 10/24	TIME 0915	Received By: TD	

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ Lab Field Services ☑ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers			
Sample(s) received in Cooler?	☑ Yes	☐ No	*If yes:* Cooler ID:
Multiple Coolers?	☐ Yes	☑ No	*If yes:* Cooler # _____ of _____
Cooler Custody Seals Present?	☐ Yes	☑ No	*If yes:* Cooler custody seals intact? ☐ Yes ☐ No
Sample Custody Seals Present?	☐ Yes	☑ No	*If yes:* Sample custody seals intact? ☐ Yes ☐ No
Trip Blank Present?	☑ Yes	☐ No	*If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☑ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: R | Correction Factor (°C): 0.3

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 2.4 | Corrected Temp (°C): 2.4

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

Eurofins Cedar Falls
3019 Venture Way

Cedar Falls, IA 50613
phone 319 277.2401 fax 319.277.2425

Chain of Custody Record

eurofins Environment Testing America

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other IDNR

Eurofins Environment Testing America

Client Contact	**Project Manager: Chris Oelkers**	COC No
AECOM	Email Christopher Oelkers@aecom com	**Site Contact:** / **Date:** 10-8-24 / 1 of 1 COCs
501 Sycamore Street, Suite 222	**Tel/Fax:319-296-6878**	**Lab Contact:** / **Carrier:** / TALS Project #
Waterloo, IA 50703	**Analysis Turnaround Time** ☑ CALENDAR DAYS ☐ WORKING DAYS	Sampler
(319) 232-6531 Phone	TAT if different from Below ☑ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day	**For Lab Use Only:** Walk-in Client: / Lab Sampling
(xxx) xxx-xxxx FAX		
Project Name Black Hawk Co IDNR		Job / SDG No
Site Black Hawk County Landfill		
P O #		

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y / N)	Appendix I, TSS	Appendix II, TSS	2,4-D	4,4'-DDD	beta-BHC	delta BHC	Endosulfan I	Endosulfan sulfate	Endrin aldehyde	Silvex	Sulfide	Sample Specific Notes
OW-220B			G	GW		N		X		X							X		
OW-221B	10-7-24	0930	G	GW	5	N		X											Turbidity - 11.65 NTU
OW-222B	10-7-24	1020	G	GW	5	N		X											Turbidity - 5.59 NTU
OW-223B			G	GW		N		X											
OW-223B-FD			G	GW		N		X											
OW-224B	10-7-24	1300	G	GW	18	N			X										Turbidity - 22.29 NTU
OW-225B			G	GW		N			X										
OW-226B			G	GW		N			X										
OW-227B			G	GW		N			X										
MW-319B			G	GW		N		X											
MW-320B			G	GW		N		X											
Equipment Blank-1			G	GW		N		X											
Trip Blank	10-7-24	0600	G	W	3	N		X											

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No | Cooler Temp (°C) Obs'd _____ Corr'd _____ | Therm ID No. _____

Relinquished by: Ben Porter	Company: Aecom	Date/Time: 10-8-24	Received by:	Company:	Date/Time: 10-8-24 0915
Relinquished by:	Company:	Date/Time	Received by:	Company:	Date/Time
Relinquished by:	Company:	Date/Time	Received in Laboratory by:	Company:	Date/Time

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone: 319-277-2401 Fax: 319-277-2425

Chain of Custody Record

2.1.2.2

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Bindert, Zach T	Carrier Tracking No(s):	COC No: 310-77131.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Zach.Bindert@et.eurofinsus.com	State of Origin: Iowa	Page: Page 1 of 1
Company: Eurofins Environment Testing North Centr		Accreditations Required (See note): State - Iowa; State Program - Iowa		Job #: 310-292200-1
Address: 180 S. Van Buren Avenue, ,	Due Date Requested: 10/21/2024	Analysis Requested		Preservation Codes:
City: Barberton	TAT Requested (days):			
State, Zip: OH, 44203				
Phone: 330-497-9396(Tel) 330-497-0772(Fax)	PO #:			
Email:	WO #:			
Project Name: Black Hawk County Landfill (IDNR)	Project #: 31017149			
Site: 310 - Black Hawk County (IDNR)	SSOW#:			Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9034_Calc/9030B Sulfide	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
OW-224B (310-292200-3)	10/7/24	13:00 Central	G	Water			X	1	

G89

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing North Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing North Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing North Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing North Central, LLC.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	10/8/24 1450		MELISSA LOAR	10-9-24 9:03	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Eurofins – Cleveland Sample Receipt Form/Narrative **Login # :** _____
Barberton Facility

Client Eur Cedar Falls Site Name _____ Cooler unpacked by: MALISSA LOAR

Cooler Received on 10-9-24 Opened on 10-9-24

FedEx. 1st Grd Exp UPS FAS Waypoint Client Drop Off Eurofins Courier Other _____

Receipt After-hours. Drop-off Date/Time _____ Storage Location _____

Eurofins Cooler # 2 Foam Box Client Cooler Box Other _____

Packing material used. Bubble Wrap Foam Plastic Bag None Other _____

COOLANT: Wet Ice Blue Ice Dry Ice Water None

1 Cooler temperature upon receipt ☐ See Multiple Cooler Form

IR GUN # ~~R33~~ 17 (CF 0.1 °C) Observed Cooler Temp. 2.1 °C Corrected Cooler Temp. 2.2 °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity _____	Yes	No
-Were the seals on the outside of the cooler(s) signed & dated?	Yes	No NA
-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)?	Yes	No
-Were tamper/custody seals intact and uncompromised?	Yes	No NA
3 Shippers' packing slip attached to the cooler(s)?	Yes	No
4. Did custody papers accompany the sample(s)?	Yes	No
5 Were the custody papers relinquished & signed in the appropriate place?	Yes	No
6. Was/were the person(s) who collected the samples clearly identified on the COC?	Yes	No
7 Did all bottles arrive in good condition (Unbroken)?	Yes	No
8 Could all bottle labels (ID/Date/Time) be reconciled with the COC?	Yes	No
9 For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp(Y/N)?		
10 Were correct bottle(s) used for the test(s) indicated?	Yes	No
11 Sufficient quantity received to perform indicated analyses?	Yes	No
12. Are these work share samples and all listed on the COC?	Yes	No
If yes, Questions 13-17 have been checked at the originating laboratory		
13 Were all preserved sample(s) at the correct pH upon receipt?	Yes	No NA pH Strip Lot# HC447997
14. Were VOAs on the COC?	Yes	No
15 Were air bubbles >6 mm in any VOA vials? ● ← Larger than this.	Yes	No NA
16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot #_____	Yes	No
17 Was a LL Hg or Me Hg trip blank present? _____	Yes	No

Tests that are not checked for pH by Receiving:
VOAs
Oil and Grease
TOC

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other

Concerning _____

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES ☐ additional next page | Samples processed by:

_____
_____
_____
_____

19 SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.
Sample(s) _____ were received in a broken container
Sample(s) _____ were received with bubble >6 mm in diameter (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory
Time preserved. _____ Preservative(s) added/Lot number(s). _____

VOA Sample Preservation - Date/Time VOAs Frozen. _____

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone: 319-277-2401 Fax: 319-277-2425

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Bindert, Zach T	Carrier Tracking No(s):	COC No: 310-77107.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Zach.Bindert@et.eurofinsus.com	State of Origin: Iowa	Page: Page 1 of 1
Company: Eurofins Lancaster Laboratories Environm		Accreditations Required (See note): State - Iowa; State Program - Iowa		Job #: 310-292200-1
Address: 2425 New Holland Pike, ,	Due Date Requested: 10/21/2024	Analysis Requested		Preservation Codes:
City: Lancaster	TAT Requested (days):			
State, Zip: PA, 17601				
Phone: 717-656-2300(Tel)	PO #:			
Email:	WO #:			
Project Name: Black Hawk County Landfill (IDNR)	Project #: 31017149			Other:
Site: 310 - Black Hawk County (IDNR)	SSOW#:			

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8151A/8151A_AP Default List	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
OW-224B (310-292200-3)	10/7/24	13:00 Central	G	Water			X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing North Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing North Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing North Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing North Central, LLC.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		10/24 1340				
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 10/9/24 1005	Company EUN

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 2 - 4.0 C: 4.0

HAA

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-292200-1

Login Number: 292200

List Number: 1

Creator: Hirsch, Preston

List Source: Eurofins Cedar Falls

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.		
The cooler's custody seal, if present, is intact.		
Sample custody seals, if present, are intact.		
The cooler or samples do not appear to have been compromised or tampered with.		
Samples were received on ice.		
Cooler Temperature is acceptable.		
Cooler Temperature is recorded.		
COC is present.		
COC is filled out in ink and legible.		
COC is filled out with all pertinent information.		
Is the Field Sampler's name present on COC?		
There are no discrepancies between the containers received and the COC.		
Samples are received within Holding Time (excluding tests with immediate HTs)		
Sample containers have legible labels.		
Containers are not broken or leaking.		
Sample collection date/times are provided.		
Appropriate sample containers are used.		
Sample bottles are completely filled.		
Sample Preservation Verified.		
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs		
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").		
Multiphasic samples are not present.		
Samples do not require splitting or compositing.		
Residual Chlorine Checked.		

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-292200-1

Login Number: 292200
List Number: 2
Creator: Loar, Malissa

List Source: Eurofins Cleveland
List Creation: 10/09/24 12:03 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.		
The cooler's custody seal, if present, is intact.		
Sample custody seals, if present, are intact.		
The cooler or samples do not appear to have been compromised or tampered with.		
Samples were received on ice.		
Cooler Temperature is acceptable.		
Cooler Temperature is recorded.		
COC is present.		
COC is filled out in ink and legible.		
COC is filled out with all pertinent information.		
Is the Field Sampler's name present on COC?		
There are no discrepancies between the containers received and the COC.		
Samples are received within Holding Time (excluding tests with immediate HTs)		
Sample containers have legible labels.		
Containers are not broken or leaking.		
Sample collection date/times are provided.		
Appropriate sample containers are used.		
Sample bottles are completely filled.		
Sample Preservation Verified.		
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs		
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").		
Multiphasic samples are not present.		
Samples do not require splitting or compositing.		
Residual Chlorine Checked.		

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-292200-1

Login Number: 292200
List Number: 3
Creator: Arroyo, Haley

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC
List Creation: 10/09/24 02:39 PM

Question	Answer	Comment
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature acceptable,where thermal pres is required(</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV:Container Temp acceptable,where thermal pres is required (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
Sample custody seals are intact.	N/A	
VOA sample vials do not have headspace >6mm in diameter (none, if from WV)?	N/A	

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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

ANALYTICAL REPORT

PREPARED FOR

Attn: Chris Oelkers
AECOM
501 Sycamore Street
Suite #222
Waterloo, Iowa 50703

Generated 10/23/2024 10:44:36 AM

JOB DESCRIPTION

Black Hawk County Landfill (IDNR)
Fall 2024

JOB NUMBER

310-292482-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

my EOL

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



Generated
10/23/2024 10:44:36 AM

Authorized for release by
Zach Bindert, Senior Project Manager
Zach.Bindert@et.eurofinsus.com
(319)595-2016

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Job Narrative
310-292482-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 10/11/2024 10:30 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 0.8°C and 2.6°C.

GC/MS VOA
Method 8260D: The following samples were collected in a properly preserved vial; however, the pH was outside the required criteria when verified by the laboratory. The samples were analyzed within the 7-day holding time specified for unpreserved samples: OW-226B (310-292482-1) and OW-227B (310-292482-2).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC/MS Semi VOA
Method 8270E: Surrogate recovery for the following sample was outside of acceptance limits: OW-227B (310-292482-2). There was insufficient holding time to perform a re-extraction; therefore, the data have been reported.

Method 8270E: The continuing calibration verification (CCV) associated with batch 310-436520 recovered above the upper control limit for Pronamide (24.8%D). The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Method 8270E: The continuing calibration verification (CCV) associated with batch 310-436520 recovered above the upper control limit for Diallate Peak 2 (-24.6%D) and Kepone(58.2%D). The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated sample is impacted: (CCV 310-436520/2).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Herbicides
Method 8151A: The following samples were diluted due to the nature of the sample matrix: OW-226B (310-292482-1) and OW-227B (310-292482-2). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

PCBs
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Pesticides
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
Method 6020B: The reference method requires samples to be preserved to a pH of <2. The following samples were received with insufficient preservation at a pH of >2: OW-226B (310-292482-1) and OW-227B (310-292482-2). The sample(s) was preserved to the appropriate pH in the laboratory.

Job ID: 310-292482-1 (Continued) Eurofins Cedar Falls

Method 7470A: The reference method requires samples to be preserved to a pH of <2. The following samples were received with insufficient preservation at a pH of >2: OW-226B (310-292482-1) and OW-227B (310-292482-2). The sample(s) was preserved to the appropriate pH in the laboratory.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Field Service / Mobile Lab
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Sample Summary

Client: AECOM
Job ID: 310-292482-1
Project/Site: Black Hawk County Landfill (IDNR)

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-292482-1	OW-226B	Water	10/09/24 11:00	10/11/24 10:30
310-292482-2	OW-227B	Water	10/09/24 14:00	10/11/24 10:30
310-292482-3	Trip Blank	Water	10/09/24 06:00	10/11/24 10:30

Detection Summary

Client: AECOM
Job ID: 310-292482-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-226B — Lab Sample ID: 310-292482-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	0.942	J	1.00	0.220	ug/L	1		8260D	Total/NA
Acetone	9.02	J	10.0	3.10	ug/L	1		8260D	Total/NA
Benzene	2.59		0.500	0.220	ug/L	1		8260D	Total/NA
Chlorobenzene	0.492	J	1.00	0.400	ug/L	1		8260D	Total/NA
Dichlorodifluoromethane	1.70	J	3.00	0.250	ug/L	1		8260D	Total/NA
Ethylbenzene	0.439	J	1.00	0.310	ug/L	1		8260D	Total/NA
Naphthalene	9.24		5.00	3.00	ug/L	1		8260D	Total/NA
Arsenic	10.0		2.00	0.530	ug/L	1		6020B	Total/NA
Barium	1830		2.00	0.660	ug/L	1		6020B	Total/NA
Cadmium	0.230		0.200	0.100	ug/L	1		6020B	Total/NA
Chromium	11.2		5.00	1.20	ug/L	1		6020B	Total/NA
Cobalt	25.0		0.500	0.170	ug/L	1		6020B	Total/NA
Copper	5.35		5.00	1.80	ug/L	1		6020B	Total/NA
Lead	2.47		0.500	0.260	ug/L	1		6020B	Total/NA
Nickel	94.7		5.00	2.10	ug/L	1		6020B	Total/NA
Thallium	0.955	J	1.00	0.570	ug/L	1		6020B	Total/NA
Vanadium	4.09	J	5.00	1.10	ug/L	1		6020B	Total/NA
Cyanide, Total	3.99	J	10.0	3.50	ug/L	1		9012B	Total/NA
Total Suspended Solids	56.0		15.0	11.1	mg/L	1		I-3765-85	Total/NA
Field Turbidity	37.92				NTU	1		Field Sampling	Total/NA

Client Sample ID: OW-227B — Lab Sample ID: 310-292482-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	0.505	J	1.00	0.220	ug/L	1		8260D	Total/NA
Acetone	9.25	J	10.0	3.10	ug/L	1		8260D	Total/NA
Benzene	2.92		0.500	0.220	ug/L	1		8260D	Total/NA
Chloroethane	0.805	J	4.00	0.790	ug/L	1		8260D	Total/NA
cis-1,2-Dichloroethene	0.242	J	1.00	0.210	ug/L	1		8260D	Total/NA
Arsenic	16.2		2.00	0.530	ug/L	1		6020B	Total/NA
Barium	2080		2.00	0.660	ug/L	1		6020B	Total/NA
Cadmium	0.165	J	0.200	0.100	ug/L	1		6020B	Total/NA
Chromium	7.49		5.00	1.20	ug/L	1		6020B	Total/NA
Cobalt	22.1		0.500	0.170	ug/L	1		6020B	Total/NA
Lead	0.582		0.500	0.260	ug/L	1		6020B	Total/NA
Nickel	87.0		5.00	2.10	ug/L	1		6020B	Total/NA
Thallium	0.867	J	1.00	0.570	ug/L	1		6020B	Total/NA
Vanadium	2.38	J	5.00	1.10	ug/L	1		6020B	Total/NA
Cyanide, Total	4.98	J	10.0	3.50	ug/L	1		9012B	Total/NA
Total Suspended Solids	46.0		15.0	11.1	mg/L	1		I-3765-85	Total/NA
Field Turbidity	6.55				NTU	1		Field Sampling	Total/NA

Client Sample ID: Trip Blank — Lab Sample ID: 310-292482-3

No Detections.

This Detection Summary does not include radiochemical test results.

Client: AECOM
Job ID: 310-292482-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-226B
Lab Sample ID: 310-292482-1
Date Collected: 10/09/24 11:00
Matrix: Water
Date Received: 10/11/24 10:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			10/15/24 13:06	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			10/15/24 13:06	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			10/15/24 13:06	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			10/15/24 13:06	1
1,1-Dichloroethane	**0.942**	**J**	1.00	0.220	ug/L			10/15/24 13:06	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			10/15/24 13:06	1
1,1-Dichloropropene	<0.430		1.00	0.430	ug/L			10/15/24 13:06	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			10/15/24 13:06	1
1,2,4-Trichlorobenzene	<0.750		5.00	0.750	ug/L			10/15/24 13:06	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			10/15/24 13:06	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			10/15/24 13:06	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			10/15/24 13:06	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			10/15/24 13:06	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			10/15/24 13:06	1
1,3-Dichlorobenzene	<0.300		1.00	0.300	ug/L			10/15/24 13:06	1
1,3-Dichloropropane	<0.400		1.00	0.400	ug/L			10/15/24 13:06	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			10/15/24 13:06	1
2,2-Dichloropropane	<0.690		4.00	0.690	ug/L			10/15/24 13:06	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			10/15/24 13:06	1
2-Hexanone	<2.00		10.0	2.00	ug/L			10/15/24 13:06	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			10/15/24 13:06	1
Acetone	**9.02**	**J**	10.0	3.10	ug/L			10/15/24 13:06	1
Acrolein	<3.60		10.0	3.60	ug/L			10/15/24 13:06	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			10/15/24 13:06	1
Allyl chloride	<0.700		2.00	0.700	ug/L			10/15/24 13:06	1
Benzene	**2.59**		0.500	0.220	ug/L			10/15/24 13:06	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			10/15/24 13:06	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			10/15/24 13:06	1
Bromoform	<0.780		5.00	0.780	ug/L			10/15/24 13:06	1
Bromomethane	<1.10		4.00	1.10	ug/L			10/15/24 13:06	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			10/15/24 13:06	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			10/15/24 13:06	1
Chlorobenzene	**0.492**	**J**	1.00	0.400	ug/L			10/15/24 13:06	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			10/15/24 13:06	1
Chloroethane	<0.790		4.00	0.790	ug/L			10/15/24 13:06	1
Chloroform	<1.30		3.00	1.30	ug/L			10/15/24 13:06	1
Chloromethane	<0.610		3.00	0.610	ug/L			10/15/24 13:06	1
Chloroprene	<0.230		1.00	0.230	ug/L			10/15/24 13:06	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			10/15/24 13:06	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			10/15/24 13:06	1
Dibromomethane	<0.330		1.00	0.330	ug/L			10/15/24 13:06	1
Dichlorodifluoromethane	**1.70**	**J**	3.00	0.250	ug/L			10/15/24 13:06	1
Ethyl methacrylate	<0.680		2.00	0.680	ug/L			10/15/24 13:06	1
Ethylbenzene	**0.439**	**J**	1.00	0.310	ug/L			10/15/24 13:06	1
Iodomethane	<7.00		10.0	7.00	ug/L			10/15/24 13:06	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			10/15/24 13:06	1
Methacrylonitrile	<3.30		10.0	3.30	ug/L			10/15/24 13:06	1
Methyl methacrylate	<0.760		2.00	0.760	ug/L			10/15/24 13:06	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			10/15/24 13:06	1

Client Sample ID: OW-226B
Lab Sample ID: 310-292482-1
Date Collected: 10/09/24 11:00
Matrix: Water
Date Received: 10/11/24 10:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	9.24		5.00	3.00	ug/L			10/15/24 13:06	1
o-Xylene	<0.400		1.00	0.400	ug/L			10/15/24 13:06	1
Propionitrile	<3.40		10.0	3.40	ug/L			10/15/24 13:06	1
Styrene	<0.370		1.00	0.370	ug/L			10/15/24 13:06	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			10/15/24 13:06	1
Toluene	<0.430		1.00	0.430	ug/L			10/15/24 13:06	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			10/15/24 13:06	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			10/15/24 13:06	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			10/15/24 13:06	1
Trichloroethene	<0.430		1.00	0.430	ug/L			10/15/24 13:06	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			10/15/24 13:06	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			10/15/24 13:06	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			10/15/24 13:06	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			10/15/24 13:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*100*		*73 - 130*		*10/15/24 13:06*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*10/15/24 13:06*	*1*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*10/15/24 13:06*	*1*

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4,5-Tetrachlorobenzene	<0.563		10.4	0.563	ug/L		10/11/24 06:28	10/17/24 19:40	1
1,3,5-Trinitrobenzene	<2.40		10.4	2.40	ug/L		10/11/24 06:28	10/17/24 19:40	1
1,3-Dinitrobenzene	<3.33		10.4	3.33	ug/L		10/11/24 06:28	10/17/24 19:40	1
1,4-Naphthoquinone	<3.75		10.4	3.75	ug/L		10/11/24 06:28	10/17/24 19:40	1
1,4-phenylenediamine	<1.98		10.4	1.98	ug/L		10/11/24 06:28	10/17/24 19:40	1
1-Naphthylamine	<2.60		10.4	2.60	ug/L		10/11/24 06:28	10/17/24 19:40	1
2,3,4,6-Tetrachlorophenol	<5.52		10.4	5.52	ug/L		10/11/24 06:28	10/17/24 19:40	1
2,4,5-Trichlorophenol	<5.52		10.4	5.52	ug/L		10/11/24 06:28	10/17/24 19:40	1
2,4,6-Trichlorophenol	<5.21		10.4	5.21	ug/L		10/11/24 06:28	10/17/24 19:40	1
2,4-Dichlorophenol	<0.885		10.4	0.885	ug/L		10/11/24 06:28	10/17/24 19:40	1
2,4-Dimethylphenol	<0.604		10.4	0.604	ug/L		10/11/24 06:28	10/17/24 19:40	1
2,4-Dinitrophenol	<13.5		20.8	13.5	ug/L		10/11/24 06:28	10/17/24 19:40	1
2,4-Dinitrotoluene	<6.67		10.4	6.67	ug/L		10/11/24 06:28	10/17/24 19:40	1
2,6-Dichlorophenol	<0.719		10.4	0.719	ug/L		10/11/24 06:28	10/17/24 19:40	1
2,6-Dinitrotoluene	<0.542		10.4	0.542	ug/L		10/11/24 06:28	10/17/24 19:40	1
2-Acetylaminofluorene	<2.81		10.4	2.81	ug/L		10/11/24 06:28	10/17/24 19:40	1
2-Chloronaphthalene	<0.667		10.4	0.667	ug/L		10/11/24 06:28	10/17/24 19:40	1
2-Chlorophenol	<0.563		10.4	0.563	ug/L		10/11/24 06:28	10/17/24 19:40	1
2-Methylnaphthalene	<0.615		10.4	0.615	ug/L		10/11/24 06:28	10/17/24 19:40	1
2-Methylphenol	<0.677		10.4	0.677	ug/L		10/11/24 06:28	10/17/24 19:40	1
2-Naphthylamine	<2.19		10.4	2.19	ug/L		10/11/24 06:28	10/17/24 19:40	1
2-Nitroaniline	<6.15		10.4	6.15	ug/L		10/11/24 06:28	10/17/24 19:40	1
2-Nitrophenol	<7.08		10.4	7.08	ug/L		10/11/24 06:28	10/17/24 19:40	1
3,3'-Dichlorobenzidine	<1.46		10.4	1.46	ug/L		10/11/24 06:28	10/17/24 19:40	1
3,3'-Dimethylbenzidine	<1.56		10.4	1.56	ug/L		10/11/24 06:28	10/17/24 19:40	1
3-Methylcholanthrene	<0.333		10.4	0.333	ug/L		10/11/24 06:28	10/17/24 19:40	1
3-Nitroaniline	<2.81		10.4	2.81	ug/L		10/11/24 06:28	10/17/24 19:40	1
4,6-Dinitro-2-methylphenol	<7.19		10.4	7.19	ug/L		10/11/24 06:28	10/17/24 19:40	1

Client: AECOM
Job ID: 310-292482-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-226B
Lab Sample ID: 310-292482-1
Date Collected: 10/09/24 11:00
Matrix: Water
Date Received: 10/11/24 10:30

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Aminobiphenyl	<2.29		10.4	2.29	ug/L		10/11/24 06:28	10/17/24 19:40	1
4-Bromophenyl phenyl ether	<0.729		10.4	0.729	ug/L		10/11/24 06:28	10/17/24 19:40	1
4-Chloro-3-methylphenol	<0.875		10.4	0.875	ug/L		10/11/24 06:28	10/17/24 19:40	1
4-Chloroaniline	<0.646		10.4	0.646	ug/L		10/11/24 06:28	10/17/24 19:40	1
4-Chlorophenyl phenyl ether	<0.719		10.4	0.719	ug/L		10/11/24 06:28	10/17/24 19:40	1
Methylphenol, 3 & 4	<0.729		10.4	0.729	ug/L		10/11/24 06:28	10/17/24 19:40	1
4-Nitroaniline	<1.35		10.4	1.35	ug/L		10/11/24 06:28	10/17/24 19:40	1
4-Nitrophenol	<7.92		10.4	7.92	ug/L		10/11/24 06:28	10/17/24 19:40	1
5-Nitro-o-toluidine	<2.92		10.4	2.92	ug/L		10/11/24 06:28	10/17/24 19:40	1
7,12-Dimethylbenz(a)anthracene	<1.98		10.4	1.98	ug/L		10/11/24 06:28	10/17/24 19:40	1
Acenaphthene	<0.667		10.4	0.667	ug/L		10/11/24 06:28	10/17/24 19:40	1
Acenaphthylene	<0.750		10.4	0.750	ug/L		10/11/24 06:28	10/17/24 19:40	1
Acetophenone	<0.719		10.4	0.719	ug/L		10/11/24 06:28	10/17/24 19:40	1
Anthracene	<0.906		10.4	0.906	ug/L		10/11/24 06:28	10/17/24 19:40	1
Benzo[a]anthracene	<0.885		10.4	0.885	ug/L		10/11/24 06:28	10/17/24 19:40	1
Benzo[a]pyrene	<8.44		10.4	8.44	ug/L		10/11/24 06:28	10/17/24 19:40	1
Benzo[b]fluoranthene	<5.10		10.4	5.10	ug/L		10/11/24 06:28	10/17/24 19:40	1
Benzo[g,h,i]perylene	<6.56		10.4	6.56	ug/L		10/11/24 06:28	10/17/24 19:40	1
Benzo[k]fluoranthene	<2.29		10.4	2.29	ug/L		10/11/24 06:28	10/17/24 19:40	1
Benzyl alcohol	<1.35		10.4	1.35	ug/L		10/11/24 06:28	10/17/24 19:40	1
Bis(2-chloroethoxy)methane	<0.792		10.4	0.792	ug/L		10/11/24 06:28	10/17/24 19:40	1
Bis(2-chloroethyl)ether	<0.854		10.4	0.854	ug/L		10/11/24 06:28	10/17/24 19:40	1
bis (2-chloroisopropyl) ether	<0.563		10.4	0.563	ug/L		10/11/24 06:28	10/17/24 19:40	1
Bis(2-ethylhexyl) phthalate	<5.73		10.4	5.73	ug/L		10/11/24 06:28	10/17/24 19:40	1
Butyl benzyl phthalate	<5.63		10.4	5.63	ug/L		10/11/24 06:28	10/17/24 19:40	1
Chlorobenzilate	<3.75		10.4	3.75	ug/L		10/11/24 06:28	10/17/24 19:40	1
Chrysene	<0.906		10.4	0.906	ug/L		10/11/24 06:28	10/17/24 19:40	1
Diallate	<4.17		10.4	4.17	ug/L		10/11/24 06:28	10/17/24 19:40	1
Dibenzo(a,h)anthracene	<4.06		10.4	4.06	ug/L		10/11/24 06:28	10/17/24 19:40	1
Dibenzofuran	<0.771		10.4	0.771	ug/L		10/11/24 06:28	10/17/24 19:40	1
Diethyl phthalate	<1.77		10.4	1.77	ug/L		10/11/24 06:28	10/17/24 19:40	1
Dimethoate	<3.75		10.4	3.75	ug/L		10/11/24 06:28	10/17/24 19:40	1
Dimethyl phthalate	<1.04		10.4	1.04	ug/L		10/11/24 06:28	10/17/24 19:40	1
Di-n-butyl phthalate	<5.83		10.4	5.83	ug/L		10/11/24 06:28	10/17/24 19:40	1
Di-n-octyl phthalate	<7.29		20.8	7.29	ug/L		10/11/24 06:28	10/17/24 19:40	1
Dinoseb	<2.50		10.4	2.50	ug/L		10/11/24 06:28	10/17/24 19:40	1
Diphenylamine	<6.25		10.4	6.25	ug/L		10/11/24 06:28	10/17/24 19:40	1
Disulfoton	<2.50		10.4	2.50	ug/L		10/11/24 06:28	10/17/24 19:40	1
Ethyl methanesulfonate	<3.75		10.4	3.75	ug/L		10/11/24 06:28	10/17/24 19:40	1
Ethyl Parathion	<2.29		10.4	2.29	ug/L		10/11/24 06:28	10/17/24 19:40	1
Famphur	<3.96		10.4	3.96	ug/L		10/11/24 06:28	10/17/24 19:40	1
Fluoranthene	<1.77		10.4	1.77	ug/L		10/11/24 06:28	10/17/24 19:40	1
Fluorene	<0.823		10.4	0.823	ug/L		10/11/24 06:28	10/17/24 19:40	1
Hexachlorobenzene	<0.729		10.4	0.729	ug/L		10/11/24 06:28	10/17/24 19:40	1
Hexachlorobutadiene	<0.896		10.4	0.896	ug/L		10/11/24 06:28	10/17/24 19:40	1
Hexachlorocyclopentadiene	<5.31		10.4	5.31	ug/L		10/11/24 06:28	10/17/24 19:40	1
Hexachloroethane	<1.01		10.4	1.01	ug/L		10/11/24 06:28	10/17/24 19:40	1
Hexachloropropene	<2.71		10.4	2.71	ug/L		10/11/24 06:28	10/17/24 19:40	1
Indeno[1,2,3-cd]pyrene	<4.38		10.4	4.38	ug/L		10/11/24 06:28	10/17/24 19:40	1

Client Sample ID: OW-226B
Lab Sample ID: 310-292482-1
Date Collected: 10/09/24 11:00
Matrix: Water
Date Received: 10/11/24 10:30

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Isodrin	<4.90		10.4	4.90	ug/L		10/11/24 06:28	10/17/24 19:40	1
Isophorone	<0.969		10.4	0.969	ug/L		10/11/24 06:28	10/17/24 19:40	1
Isosafrole	<2.40		10.4	2.40	ug/L		10/11/24 06:28	10/17/24 19:40	1
Kepone	<1.04		10.4	1.04	ug/L		10/11/24 06:28	10/17/24 19:40	1
Methapyrilene	<0.792		10.4	0.792	ug/L		10/11/24 06:28	10/17/24 19:40	1
Methyl methanesulfonate	<3.44		10.4	3.44	ug/L		10/11/24 06:28	10/17/24 19:40	1
Methyl parathion	<2.40		10.4	2.40	ug/L		10/11/24 06:28	10/17/24 19:40	1
Nitrobenzene	<0.833		10.4	0.833	ug/L		10/11/24 06:28	10/17/24 19:40	1
N-Nitrosodiethylamine	<3.54		10.4	3.54	ug/L		10/11/24 06:28	10/17/24 19:40	1
N-Nitrosodimethylamine	<0.750		10.4	0.750	ug/L		10/11/24 06:28	10/17/24 19:40	1
N-Nitrosodi-n-butylamine	<4.06		10.4	4.06	ug/L		10/11/24 06:28	10/17/24 19:40	1
N-Nitrosodi-n-propylamine	<0.958		10.4	0.958	ug/L		10/11/24 06:28	10/17/24 19:40	1
N-Nitrosodiphenylamine	<0.781		10.4	0.781	ug/L		10/11/24 06:28	10/17/24 19:40	1
N-Nitrosomethylethylamine	<5.10		10.4	5.10	ug/L		10/11/24 06:28	10/17/24 19:40	1
N-Nitrosopiperidine	<2.81		10.4	2.81	ug/L		10/11/24 06:28	10/17/24 19:40	1
N-Nitrosopyrrolidine	<3.75		10.4	3.75	ug/L		10/11/24 06:28	10/17/24 19:40	1
o,o',o''-Triethylphosphorothioate	<3.33		10.4	3.33	ug/L		10/11/24 06:28	10/17/24 19:40	1
o-Toluidine	<3.02		10.4	3.02	ug/L		10/11/24 06:28	10/17/24 19:40	1
p-Dimethylamino azobenzene	<2.29		10.4	2.29	ug/L		10/11/24 06:28	10/17/24 19:40	1
Pentachlorobenzene	<2.92		10.4	2.92	ug/L		10/11/24 06:28	10/17/24 19:40	1
Pentachloronitrobenzene	<6.04		10.4	6.04	ug/L		10/11/24 06:28	10/17/24 19:40	1
Pentachlorophenol	<10.0		10.4	10.0	ug/L		10/11/24 06:28	10/17/24 19:40	1
Phenacetin	<1.98		10.4	1.98	ug/L		10/11/24 06:28	10/17/24 19:40	1
Phenanthrene	<0.823		10.4	0.823	ug/L		10/11/24 06:28	10/17/24 19:40	1
Phenol	<1.15		10.4	1.15	ug/L		10/11/24 06:28	10/17/24 19:40	1
Phorate	<3.33		10.4	3.33	ug/L		10/11/24 06:28	10/17/24 19:40	1
Pronamide	<2.81		10.4	2.81	ug/L		10/11/24 06:28	10/17/24 19:40	1
Pyrene	<0.823		10.4	0.823	ug/L		10/11/24 06:28	10/17/24 19:40	1
Safrole	<2.92		10.4	2.92	ug/L		10/11/24 06:28	10/17/24 19:40	1
Thionazin	<3.65		10.4	3.65	ug/L		10/11/24 06:28	10/17/24 19:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorophenol (Surr)	*66*		*25 - 110*	*10/11/24 06:28*	*10/17/24 19:40*	*1*
Phenol-d5 (Surr)	*57*		*21 - 110*	*10/11/24 06:28*	*10/17/24 19:40*	*1*
Nitrobenzene-d5 (Surr)	*91*		*45 - 129*	*10/11/24 06:28*	*10/17/24 19:40*	*1*
2-Fluorobiphenyl (Surr)	*99*		*39 - 118*	*10/11/24 06:28*	*10/17/24 19:40*	*1*
2,4,6-Tribromophenol (Surr)	*101*		*27 - 136*	*10/11/24 06:28*	*10/17/24 19:40*	*1*
Terphenyl-d14 (Surr)	*89*		*12 - 144*	*10/11/24 06:28*	*10/17/24 19:40*	*1*

Method: SW846 8015C - Nonhalogenated Organic using GC/FID (Direct Aqueous Injection)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetonitrile	<2600		10000	2600	ug/L			10/14/24 20:34	1
Isobutanol	<2400		10000	2400	ug/L			10/14/24 20:34	1

Method: SW846 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	<0.0225		0.0900	0.0225	ug/L		10/11/24 10:56	10/14/24 19:52	1
4,4'-DDE	<0.0270		0.0900	0.0270	ug/L		10/11/24 10:56	10/14/24 19:52	1
4,4'-DDT	<0.0180		0.0900	0.0180	ug/L		10/11/24 10:56	10/14/24 19:52	1
Aldrin	<0.0198		0.0900	0.0198	ug/L		10/11/24 10:56	10/14/24 19:52	1

Client Sample ID: OW-226B
Lab Sample ID: 310-292482-1
Date Collected: 10/09/24 11:00
Matrix: Water
Date Received: 10/11/24 10:30

Method: SW846 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
alpha-BHC	<0.00900		0.0900	0.00900	ug/L		10/11/24 10:56	10/14/24 19:52	1
beta-BHC	<0.0378		0.0900	0.0378	ug/L		10/11/24 10:56	10/14/24 19:52	1
Chlordane (technical)	<0.351		1.80	0.351	ug/L		10/11/24 10:56	10/14/24 19:52	1
delta-BHC	<0.0288		0.0900	0.0288	ug/L		10/11/24 10:56	10/14/24 19:52	1
Dieldrin	<0.0189		0.0900	0.0189	ug/L		10/11/24 10:56	10/14/24 19:52	1
Endosulfan I	<0.0252		0.0900	0.0252	ug/L		10/11/24 10:56	10/14/24 19:52	1
Endosulfan II	<0.0234		0.0900	0.0234	ug/L		10/11/24 10:56	10/14/24 19:52	1
Endosulfan sulfate	<0.0162		0.0900	0.0162	ug/L		10/11/24 10:56	10/14/24 19:52	1
Endrin	<0.0252		0.0900	0.0252	ug/L		10/11/24 10:56	10/14/24 19:52	1
Endrin aldehyde	<0.0243		0.0900	0.0243	ug/L		10/11/24 10:56	10/14/24 19:52	1
gamma-BHC (Lindane)	<0.00900		0.0900	0.00900	ug/L		10/11/24 10:56	10/14/24 19:52	1
Heptachlor	<0.0207		0.0900	0.0207	ug/L		10/11/24 10:56	10/14/24 19:52	1
Heptachlor epoxide	<0.0288		0.0900	0.0288	ug/L		10/11/24 10:56	10/14/24 19:52	1
Methoxychlor	<0.0288		0.0900	0.0288	ug/L		10/11/24 10:56	10/14/24 19:52	1
Toxaphene	<0.900		1.80	0.900	ug/L		10/11/24 10:56	10/14/24 19:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*37*		*10 - 136*	*10/11/24 10:56*	*10/14/24 19:52*	*1*
Tetrachloro-m-xylene (Surr)	*89*		*10 - 130*	*10/11/24 10:56*	*10/14/24 19:52*	*1*

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.738		1.80	0.738	ug/L		10/11/24 10:56	10/14/24 19:52	1
PCB-1221	<0.738		1.80	0.738	ug/L		10/11/24 10:56	10/14/24 19:52	1
PCB-1232	<0.738		1.80	0.738	ug/L		10/11/24 10:56	10/14/24 19:52	1
PCB-1242	<0.738		1.80	0.738	ug/L		10/11/24 10:56	10/14/24 19:52	1
PCB-1248	<0.621		1.80	0.621	ug/L		10/11/24 10:56	10/14/24 19:52	1
PCB-1254	<0.621		1.80	0.621	ug/L		10/11/24 10:56	10/14/24 19:52	1
PCB-1260	<0.621		1.80	0.621	ug/L		10/11/24 10:56	10/14/24 19:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*37*		*10 - 136*	*10/11/24 10:56*	*10/14/24 19:52*	*1*
Tetrachloro-m-xylene (Surr)	*89*		*10 - 130*	*10/11/24 10:56*	*10/14/24 19:52*	*1*

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	<1.31		3.14	1.31	ug/L		10/16/24 07:51	10/17/24 19:57	5
Silvex (2,4,5-TP)	<0.115		0.262	0.115	ug/L		10/16/24 07:51	10/17/24 19:57	5
2,4,5-T	<0.340		0.785	0.340	ug/L		10/16/24 07:51	10/17/24 19:57	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*91*	*p*	*34 - 142*	*10/16/24 07:51*	*10/17/24 19:57*	*5*
DCAA	*198*	*S1+*	*34 - 142*	*10/16/24 07:51*	*10/17/24 19:57*	*5*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		10/14/24 10:00	10/15/24 18:06	1
Arsenic	**10.0**		2.00	0.530	ug/L		10/14/24 10:00	10/15/24 18:06	1
Barium	**1830**		2.00	0.660	ug/L		10/14/24 10:00	10/15/24 18:06	1
Beryllium	<0.330		1.00	0.330	ug/L		10/14/24 10:00	10/15/24 18:06	1
Cadmium	**0.230**		0.200	0.100	ug/L		10/14/24 10:00	10/15/24 18:06	1

Client: AECOM
Job ID: 310-292482-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-226B
Lab Sample ID: 310-292482-1
Date Collected: 10/09/24 11:00
Matrix: Water
Date Received: 10/11/24 10:30

Method: SW846 6020B - Metals (ICP/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	11.2		5.00	1.20	ug/L		10/14/24 10:00	10/15/24 18:06	1
Cobalt	25.0		0.500	0.170	ug/L		10/14/24 10:00	10/15/24 18:06	1
Copper	5.35		5.00	1.80	ug/L		10/14/24 10:00	10/15/24 18:06	1
Lead	2.47		0.500	0.260	ug/L		10/14/24 10:00	10/15/24 18:06	1
Nickel	94.7		5.00	2.10	ug/L		10/14/24 10:00	10/15/24 18:06	1
Selenium	<1.40		5.00	1.40	ug/L		10/14/24 10:00	10/15/24 18:06	1
Silver	<0.500		1.00	0.500	ug/L		10/14/24 10:00	10/15/24 18:06	1
Thallium	0.955	J	1.00	0.570	ug/L		10/14/24 10:00	10/22/24 14:26	1
Vanadium	4.09	J	5.00	1.10	ug/L		10/14/24 10:00	10/15/24 18:06	1
Zinc	<9.70		20.0	9.70	ug/L		10/14/24 10:00	10/15/24 18:06	1
Tin	<2.30		5.00	2.30	ug/L		10/14/24 10:00	10/15/24 18:06	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.110		0.200	0.110	ug/L		10/17/24 15:15	10/18/24 15:36	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total (SW846 9012B)	3.99	J	10.0	3.50	ug/L		10/16/24 08:55	10/16/24 17:27	1
Total Suspended Solids (USGS I-3765-85)	56.0		15.0	11.1	mg/L			10/11/24 14:06	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	37.92				NTU			10/09/24 11:00	1

Client: AECOM
Job ID: 310-292482-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-227B
Lab Sample ID: 310-292482-2
Date Collected: 10/09/24 14:00
Matrix: Water
Date Received: 10/11/24 10:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			10/15/24 13:29	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			10/15/24 13:29	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			10/15/24 13:29	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			10/15/24 13:29	1
1,1-Dichloroethane	**0.505**	**J**	1.00	0.220	ug/L			10/15/24 13:29	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			10/15/24 13:29	1
1,1-Dichloropropene	<0.430		1.00	0.430	ug/L			10/15/24 13:29	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			10/15/24 13:29	1
1,2,4-Trichlorobenzene	<0.750		5.00	0.750	ug/L			10/15/24 13:29	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			10/15/24 13:29	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			10/15/24 13:29	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			10/15/24 13:29	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			10/15/24 13:29	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			10/15/24 13:29	1
1,3-Dichlorobenzene	<0.300		1.00	0.300	ug/L			10/15/24 13:29	1
1,3-Dichloropropane	<0.400		1.00	0.400	ug/L			10/15/24 13:29	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			10/15/24 13:29	1
2,2-Dichloropropane	<0.690		4.00	0.690	ug/L			10/15/24 13:29	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			10/15/24 13:29	1
2-Hexanone	<2.00		10.0	2.00	ug/L			10/15/24 13:29	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			10/15/24 13:29	1
Acetone	**9.25**	**J**	10.0	3.10	ug/L			10/15/24 13:29	1
Acrolein	<3.60		10.0	3.60	ug/L			10/15/24 13:29	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			10/15/24 13:29	1
Allyl chloride	<0.700		2.00	0.700	ug/L			10/15/24 13:29	1
Benzene	**2.92**		0.500	0.220	ug/L			10/15/24 13:29	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			10/15/24 13:29	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			10/15/24 13:29	1
Bromoform	<0.780		5.00	0.780	ug/L			10/15/24 13:29	1
Bromomethane	<1.10		4.00	1.10	ug/L			10/15/24 13:29	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			10/15/24 13:29	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			10/15/24 13:29	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			10/15/24 13:29	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			10/15/24 13:29	1
Chloroethane	**0.805**	**J**	4.00	0.790	ug/L			10/15/24 13:29	1
Chloroform	<1.30		3.00	1.30	ug/L			10/15/24 13:29	1
Chloromethane	<0.610		3.00	0.610	ug/L			10/15/24 13:29	1
Chloroprene	<0.230		1.00	0.230	ug/L			10/15/24 13:29	1
cis-1,2-Dichloroethene	**0.242**	**J**	1.00	0.210	ug/L			10/15/24 13:29	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			10/15/24 13:29	1
Dibromomethane	<0.330		1.00	0.330	ug/L			10/15/24 13:29	1
Dichlorodifluoromethane	<0.250		3.00	0.250	ug/L			10/15/24 13:29	1
Ethyl methacrylate	<0.680		2.00	0.680	ug/L			10/15/24 13:29	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			10/15/24 13:29	1
Iodomethane	<7.00		10.0	7.00	ug/L			10/15/24 13:29	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			10/15/24 13:29	1
Methacrylonitrile	<3.30		10.0	3.30	ug/L			10/15/24 13:29	1
Methyl methacrylate	<0.760		2.00	0.760	ug/L			10/15/24 13:29	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			10/15/24 13:29	1

Client: AECOM
Job ID: 310-292482-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-227B
Lab Sample ID: 310-292482-2
Date Collected: 10/09/24 14:00
Matrix: Water
Date Received: 10/11/24 10:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<3.00		5.00	3.00	ug/L			10/15/24 13:29	1
o-Xylene	<0.400		1.00	0.400	ug/L			10/15/24 13:29	1
Propionitrile	<3.40		10.0	3.40	ug/L			10/15/24 13:29	1
Styrene	<0.370		1.00	0.370	ug/L			10/15/24 13:29	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			10/15/24 13:29	1
Toluene	<0.430		1.00	0.430	ug/L			10/15/24 13:29	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			10/15/24 13:29	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			10/15/24 13:29	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			10/15/24 13:29	1
Trichloroethene	<0.430		1.00	0.430	ug/L			10/15/24 13:29	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			10/15/24 13:29	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			10/15/24 13:29	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			10/15/24 13:29	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			10/15/24 13:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*100*		*73 - 130*		*10/15/24 13:29*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*10/15/24 13:29*	*1*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*10/15/24 13:29*	*1*

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4,5-Tetrachlorobenzene	<0.563		10.4	0.563	ug/L		10/11/24 06:28	10/17/24 19:14	1
1,3,5-Trinitrobenzene	<2.40		10.4	2.40	ug/L		10/11/24 06:28	10/17/24 19:14	1
1,3-Dinitrobenzene	<3.33		10.4	3.33	ug/L		10/11/24 06:28	10/17/24 19:14	1
1,4-Naphthoquinone	<3.75		10.4	3.75	ug/L		10/11/24 06:28	10/17/24 19:14	1
1,4-phenylenediamine	<1.98		10.4	1.98	ug/L		10/11/24 06:28	10/17/24 19:14	1
1-Naphthylamine	<2.60		10.4	2.60	ug/L		10/11/24 06:28	10/17/24 19:14	1
2,3,4,6-Tetrachlorophenol	<5.52		10.4	5.52	ug/L		10/11/24 06:28	10/17/24 19:14	1
2,4,5-Trichlorophenol	<5.52		10.4	5.52	ug/L		10/11/24 06:28	10/17/24 19:14	1
2,4,6-Trichlorophenol	<5.21		10.4	5.21	ug/L		10/11/24 06:28	10/17/24 19:14	1
2,4-Dichlorophenol	<0.885		10.4	0.885	ug/L		10/11/24 06:28	10/17/24 19:14	1
2,4-Dimethylphenol	<0.604		10.4	0.604	ug/L		10/11/24 06:28	10/17/24 19:14	1
2,4-Dinitrophenol	<13.5		20.8	13.5	ug/L		10/11/24 06:28	10/17/24 19:14	1
2,4-Dinitrotoluene	<6.67		10.4	6.67	ug/L		10/11/24 06:28	10/17/24 19:14	1
2,6-Dichlorophenol	<0.719		10.4	0.719	ug/L		10/11/24 06:28	10/17/24 19:14	1
2,6-Dinitrotoluene	<0.542		10.4	0.542	ug/L		10/11/24 06:28	10/17/24 19:14	1
2-Acetylaminofluorene	<2.81		10.4	2.81	ug/L		10/11/24 06:28	10/17/24 19:14	1
2-Chloronaphthalene	<0.667		10.4	0.667	ug/L		10/11/24 06:28	10/17/24 19:14	1
2-Chlorophenol	<0.563		10.4	0.563	ug/L		10/11/24 06:28	10/17/24 19:14	1
2-Methylnaphthalene	<0.615		10.4	0.615	ug/L		10/11/24 06:28	10/17/24 19:14	1
2-Methylphenol	<0.677		10.4	0.677	ug/L		10/11/24 06:28	10/17/24 19:14	1
2-Naphthylamine	<2.19		10.4	2.19	ug/L		10/11/24 06:28	10/17/24 19:14	1
2-Nitroaniline	<6.15		10.4	6.15	ug/L		10/11/24 06:28	10/17/24 19:14	1
2-Nitrophenol	<7.08		10.4	7.08	ug/L		10/11/24 06:28	10/17/24 19:14	1
3,3'-Dichlorobenzidine	<1.46		10.4	1.46	ug/L		10/11/24 06:28	10/17/24 19:14	1
3,3'-Dimethylbenzidine	<1.56		10.4	1.56	ug/L		10/11/24 06:28	10/17/24 19:14	1
3-Methylcholanthrene	<0.333		10.4	0.333	ug/L		10/11/24 06:28	10/17/24 19:14	1
3-Nitroaniline	<2.81		10.4	2.81	ug/L		10/11/24 06:28	10/17/24 19:14	1
4,6-Dinitro-2-methylphenol	<7.19		10.4	7.19	ug/L		10/11/24 06:28	10/17/24 19:14	1

Client: AECOM
Job ID: 310-292482-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-227B
Lab Sample ID: 310-292482-2
Date Collected: 10/09/24 14:00
Matrix: Water
Date Received: 10/11/24 10:30

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Aminobiphenyl	<2.29		10.4	2.29	ug/L		10/11/24 06:28	10/17/24 19:14	1
4-Bromophenyl phenyl ether	<0.729		10.4	0.729	ug/L		10/11/24 06:28	10/17/24 19:14	1
4-Chloro-3-methylphenol	<0.875		10.4	0.875	ug/L		10/11/24 06:28	10/17/24 19:14	1
4-Chloroaniline	<0.646		10.4	0.646	ug/L		10/11/24 06:28	10/17/24 19:14	1
4-Chlorophenyl phenyl ether	<0.719		10.4	0.719	ug/L		10/11/24 06:28	10/17/24 19:14	1
Methylphenol, 3 & 4	<0.729		10.4	0.729	ug/L		10/11/24 06:28	10/17/24 19:14	1
4-Nitroaniline	<1.35		10.4	1.35	ug/L		10/11/24 06:28	10/17/24 19:14	1
4-Nitrophenol	<7.92		10.4	7.92	ug/L		10/11/24 06:28	10/17/24 19:14	1
5-Nitro-o-toluidine	<2.92		10.4	2.92	ug/L		10/11/24 06:28	10/17/24 19:14	1
7,12-Dimethylbenz(a)anthracene	<1.98		10.4	1.98	ug/L		10/11/24 06:28	10/17/24 19:14	1
Acenaphthene	<0.667		10.4	0.667	ug/L		10/11/24 06:28	10/17/24 19:14	1
Acenaphthylene	<0.750		10.4	0.750	ug/L		10/11/24 06:28	10/17/24 19:14	1
Acetophenone	<0.719		10.4	0.719	ug/L		10/11/24 06:28	10/17/24 19:14	1
Anthracene	<0.906		10.4	0.906	ug/L		10/11/24 06:28	10/17/24 19:14	1
Benzo[a]anthracene	<0.885		10.4	0.885	ug/L		10/11/24 06:28	10/17/24 19:14	1
Benzo[a]pyrene	<8.44		10.4	8.44	ug/L		10/11/24 06:28	10/17/24 19:14	1
Benzo[b]fluoranthene	<5.10		10.4	5.10	ug/L		10/11/24 06:28	10/17/24 19:14	1
Benzo[g,h,i]perylene	<6.56		10.4	6.56	ug/L		10/11/24 06:28	10/17/24 19:14	1
Benzo[k]fluoranthene	<2.29		10.4	2.29	ug/L		10/11/24 06:28	10/17/24 19:14	1
Benzyl alcohol	<1.35		10.4	1.35	ug/L		10/11/24 06:28	10/17/24 19:14	1
Bis(2-chloroethoxy)methane	<0.792		10.4	0.792	ug/L		10/11/24 06:28	10/17/24 19:14	1
Bis(2-chloroethyl)ether	<0.854		10.4	0.854	ug/L		10/11/24 06:28	10/17/24 19:14	1
bis (2-chloroisopropyl) ether	<0.563		10.4	0.563	ug/L		10/11/24 06:28	10/17/24 19:14	1
Bis(2-ethylhexyl) phthalate	<5.73		10.4	5.73	ug/L		10/11/24 06:28	10/17/24 19:14	1
Butyl benzyl phthalate	<5.63		10.4	5.63	ug/L		10/11/24 06:28	10/17/24 19:14	1
Chlorobenzilate	<3.75		10.4	3.75	ug/L		10/11/24 06:28	10/17/24 19:14	1
Chrysene	<0.906		10.4	0.906	ug/L		10/11/24 06:28	10/17/24 19:14	1
Diallate	<4.17		10.4	4.17	ug/L		10/11/24 06:28	10/17/24 19:14	1
Dibenzo(a,h)anthracene	<4.06		10.4	4.06	ug/L		10/11/24 06:28	10/17/24 19:14	1
Dibenzofuran	<0.771		10.4	0.771	ug/L		10/11/24 06:28	10/17/24 19:14	1
Diethyl phthalate	<1.77		10.4	1.77	ug/L		10/11/24 06:28	10/17/24 19:14	1
Dimethoate	<3.75		10.4	3.75	ug/L		10/11/24 06:28	10/17/24 19:14	1
Dimethyl phthalate	<1.04		10.4	1.04	ug/L		10/11/24 06:28	10/17/24 19:14	1
Di-n-butyl phthalate	<5.83		10.4	5.83	ug/L		10/11/24 06:28	10/17/24 19:14	1
Di-n-octyl phthalate	<7.29		20.8	7.29	ug/L		10/11/24 06:28	10/17/24 19:14	1
Dinoseb	<2.50		10.4	2.50	ug/L		10/11/24 06:28	10/17/24 19:14	1
Diphenylamine	<6.25		10.4	6.25	ug/L		10/11/24 06:28	10/17/24 19:14	1
Disulfoton	<2.50		10.4	2.50	ug/L		10/11/24 06:28	10/17/24 19:14	1
Ethyl methanesulfonate	<3.75		10.4	3.75	ug/L		10/11/24 06:28	10/17/24 19:14	1
Ethyl Parathion	<2.29		10.4	2.29	ug/L		10/11/24 06:28	10/17/24 19:14	1
Famphur	<3.96		10.4	3.96	ug/L		10/11/24 06:28	10/17/24 19:14	1
Fluoranthene	<1.77		10.4	1.77	ug/L		10/11/24 06:28	10/17/24 19:14	1
Fluorene	<0.823		10.4	0.823	ug/L		10/11/24 06:28	10/17/24 19:14	1
Hexachlorobenzene	<0.729		10.4	0.729	ug/L		10/11/24 06:28	10/17/24 19:14	1
Hexachlorobutadiene	<0.896		10.4	0.896	ug/L		10/11/24 06:28	10/17/24 19:14	1
Hexachlorocyclopentadiene	<5.31		10.4	5.31	ug/L		10/11/24 06:28	10/17/24 19:14	1
Hexachloroethane	<1.01		10.4	1.01	ug/L		10/11/24 06:28	10/17/24 19:14	1
Hexachloropropene	<2.71		10.4	2.71	ug/L		10/11/24 06:28	10/17/24 19:14	1
Indeno[1,2,3-cd]pyrene	<4.38		10.4	4.38	ug/L		10/11/24 06:28	10/17/24 19:14	1

Client Sample ID: OW-227B
Lab Sample ID: 310-292482-2
Date Collected: 10/09/24 14:00
Matrix: Water
Date Received: 10/11/24 10:30

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Isodrin	<4.90		10.4	4.90	ug/L		10/11/24 06:28	10/17/24 19:14	1
Isophorone	<0.969		10.4	0.969	ug/L		10/11/24 06:28	10/17/24 19:14	1
Isosafrole	<2.40		10.4	2.40	ug/L		10/11/24 06:28	10/17/24 19:14	1
Kepone	<1.04		10.4	1.04	ug/L		10/11/24 06:28	10/17/24 19:14	1
Methapyrilene	<0.792		10.4	0.792	ug/L		10/11/24 06:28	10/17/24 19:14	1
Methyl methanesulfonate	<3.44		10.4	3.44	ug/L		10/11/24 06:28	10/17/24 19:14	1
Methyl parathion	<2.40		10.4	2.40	ug/L		10/11/24 06:28	10/17/24 19:14	1
Nitrobenzene	<0.833		10.4	0.833	ug/L		10/11/24 06:28	10/17/24 19:14	1
N-Nitrosodiethylamine	<3.54		10.4	3.54	ug/L		10/11/24 06:28	10/17/24 19:14	1
N-Nitrosodimethylamine	<0.750		10.4	0.750	ug/L		10/11/24 06:28	10/17/24 19:14	1
N-Nitrosodi-n-butylamine	<4.06		10.4	4.06	ug/L		10/11/24 06:28	10/17/24 19:14	1
N-Nitrosodi-n-propylamine	<0.958		10.4	0.958	ug/L		10/11/24 06:28	10/17/24 19:14	1
N-Nitrosodiphenylamine	<0.781		10.4	0.781	ug/L		10/11/24 06:28	10/17/24 19:14	1
N-Nitrosomethylethylamine	<5.10		10.4	5.10	ug/L		10/11/24 06:28	10/17/24 19:14	1
N-Nitrosopiperidine	<2.81		10.4	2.81	ug/L		10/11/24 06:28	10/17/24 19:14	1
N-Nitrosopyrrolidine	<3.75		10.4	3.75	ug/L		10/11/24 06:28	10/17/24 19:14	1
o,o',o''-Triethylphosphorothioate	<3.33		10.4	3.33	ug/L		10/11/24 06:28	10/17/24 19:14	1
o-Toluidine	<3.02		10.4	3.02	ug/L		10/11/24 06:28	10/17/24 19:14	1
p-Dimethylamino azobenzene	<2.29		10.4	2.29	ug/L		10/11/24 06:28	10/17/24 19:14	1
Pentachlorobenzene	<2.92		10.4	2.92	ug/L		10/11/24 06:28	10/17/24 19:14	1
Pentachloronitrobenzene	<6.04		10.4	6.04	ug/L		10/11/24 06:28	10/17/24 19:14	1
Pentachlorophenol	<10.0		10.4	10.0	ug/L		10/11/24 06:28	10/17/24 19:14	1
Phenacetin	<1.98		10.4	1.98	ug/L		10/11/24 06:28	10/17/24 19:14	1
Phenanthrene	<0.823		10.4	0.823	ug/L		10/11/24 06:28	10/17/24 19:14	1
Phenol	<1.15		10.4	1.15	ug/L		10/11/24 06:28	10/17/24 19:14	1
Phorate	<3.33		10.4	3.33	ug/L		10/11/24 06:28	10/17/24 19:14	1
Pronamide	<2.81		10.4	2.81	ug/L		10/11/24 06:28	10/17/24 19:14	1
Pyrene	<0.823		10.4	0.823	ug/L		10/11/24 06:28	10/17/24 19:14	1
Safrole	<2.92		10.4	2.92	ug/L		10/11/24 06:28	10/17/24 19:14	1
Thionazin	<3.65		10.4	3.65	ug/L		10/11/24 06:28	10/17/24 19:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorophenol (Surr)	*23*	*S1-*	*25 - 110*	*10/11/24 06:28*	*10/17/24 19:14*	*1*
Phenol-d5 (Surr)	*21*		*21 - 110*	*10/11/24 06:28*	*10/17/24 19:14*	*1*
Nitrobenzene-d5 (Surr)	*32*	*S1-*	*45 - 129*	*10/11/24 06:28*	*10/17/24 19:14*	*1*
2-Fluorobiphenyl (Surr)	*32*	*S1-*	*39 - 118*	*10/11/24 06:28*	*10/17/24 19:14*	*1*
2,4,6-Tribromophenol (Surr)	*34*		*27 - 136*	*10/11/24 06:28*	*10/17/24 19:14*	*1*
Terphenyl-d14 (Surr)	*35*		*12 - 144*	*10/11/24 06:28*	*10/17/24 19:14*	*1*

Method: SW846 8015C - Nonhalogenated Organic using GC/FID (Direct Aqueous Injection)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetonitrile	<2600		10000	2600	ug/L			10/14/24 20:54	1
Isobutanol	<2400		10000	2400	ug/L			10/14/24 20:54	1

Method: SW846 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	<0.0220		0.0879	0.0220	ug/L		10/11/24 10:56	10/14/24 19:05	1
4,4'-DDE	<0.0264		0.0879	0.0264	ug/L		10/11/24 10:56	10/14/24 19:05	1
4,4'-DDT	<0.0176		0.0879	0.0176	ug/L		10/11/24 10:56	10/14/24 19:05	1
Aldrin	<0.0193		0.0879	0.0193	ug/L		10/11/24 10:56	10/14/24 19:05	1

Client Sample ID: OW-227B
Lab Sample ID: 310-292482-2
Date Collected: 10/09/24 14:00
Matrix: Water
Date Received: 10/11/24 10:30

Method: SW846 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
alpha-BHC	<0.00879		0.0879	0.00879	ug/L		10/11/24 10:56	10/14/24 19:05	1
beta-BHC	<0.0369		0.0879	0.0369	ug/L		10/11/24 10:56	10/14/24 19:05	1
Chlordane (technical)	<0.343		1.76	0.343	ug/L		10/11/24 10:56	10/14/24 19:05	1
delta-BHC	<0.0281		0.0879	0.0281	ug/L		10/11/24 10:56	10/14/24 19:05	1
Dieldrin	<0.0185		0.0879	0.0185	ug/L		10/11/24 10:56	10/14/24 19:05	1
Endosulfan I	<0.0246		0.0879	0.0246	ug/L		10/11/24 10:56	10/14/24 19:05	1
Endosulfan II	<0.0229		0.0879	0.0229	ug/L		10/11/24 10:56	10/14/24 19:05	1
Endosulfan sulfate	<0.0158		0.0879	0.0158	ug/L		10/11/24 10:56	10/14/24 19:05	1
Endrin	<0.0246		0.0879	0.0246	ug/L		10/11/24 10:56	10/14/24 19:05	1
Endrin aldehyde	<0.0237		0.0879	0.0237	ug/L		10/11/24 10:56	10/14/24 19:05	1
gamma-BHC (Lindane)	<0.00879		0.0879	0.00879	ug/L		10/11/24 10:56	10/14/24 19:05	1
Heptachlor	<0.0202		0.0879	0.0202	ug/L		10/11/24 10:56	10/14/24 19:05	1
Heptachlor epoxide	<0.0281		0.0879	0.0281	ug/L		10/11/24 10:56	10/14/24 19:05	1
Methoxychlor	<0.0281		0.0879	0.0281	ug/L		10/11/24 10:56	10/14/24 19:05	1
Toxaphene	<0.879		1.76	0.879	ug/L		10/11/24 10:56	10/14/24 19:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*42*		*10 - 136*	*10/11/24 10:56*	*10/14/24 19:05*	*1*
Tetrachloro-m-xylene (Surr)	*109*		*10 - 130*	*10/11/24 10:56*	*10/14/24 19:05*	*1*

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.721		1.76	0.721	ug/L		10/11/24 10:56	10/14/24 19:05	1
PCB-1221	<0.721		1.76	0.721	ug/L		10/11/24 10:56	10/14/24 19:05	1
PCB-1232	<0.721		1.76	0.721	ug/L		10/11/24 10:56	10/14/24 19:05	1
PCB-1242	<0.721		1.76	0.721	ug/L		10/11/24 10:56	10/14/24 19:05	1
PCB-1248	<0.607		1.76	0.607	ug/L		10/11/24 10:56	10/14/24 19:05	1
PCB-1254	<0.607		1.76	0.607	ug/L		10/11/24 10:56	10/14/24 19:05	1
PCB-1260	<0.607		1.76	0.607	ug/L		10/11/24 10:56	10/14/24 19:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*42*		*10 - 136*	*10/11/24 10:56*	*10/14/24 19:05*	*1*
Tetrachloro-m-xylene (Surr)	*109*		*10 - 130*	*10/11/24 10:56*	*10/14/24 19:05*	*1*

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	<2.74		6.58	2.74	ug/L		10/16/24 07:51	10/17/24 20:33	10
Silvex (2,4,5-TP)	<0.241		0.549	0.241	ug/L		10/16/24 07:51	10/17/24 20:33	10
2,4,5-T	<0.713		1.65	0.713	ug/L		10/16/24 07:51	10/17/24 20:33	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*78*	*p*	*34 - 142*	*10/16/24 07:51*	*10/17/24 20:33*	*10*
DCAA	*215*	*S1+*	*34 - 142*	*10/16/24 07:51*	*10/17/24 20:33*	*10*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		10/14/24 10:00	10/15/24 18:17	1
Arsenic	**16.2**		2.00	0.530	ug/L		10/14/24 10:00	10/15/24 18:17	1
Barium	**2080**		2.00	0.660	ug/L		10/14/24 10:00	10/15/24 18:17	1
Beryllium	<0.330		1.00	0.330	ug/L		10/14/24 10:00	10/21/24 16:07	1
Cadmium	**0.165**	**J**	0.200	0.100	ug/L		10/14/24 10:00	10/15/24 18:17	1

Client: AECOM
Job ID: 310-292482-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-227B
Lab Sample ID: 310-292482-2
Date Collected: 10/09/24 14:00
Matrix: Water
Date Received: 10/11/24 10:30

Method: SW846 6020B - Metals (ICP/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	**7.49**		5.00	1.20	ug/L		10/14/24 10:00	10/15/24 18:17	1
Cobalt	**22.1**		0.500	0.170	ug/L		10/14/24 10:00	10/15/24 18:17	1
Copper	<1.80		5.00	1.80	ug/L		10/14/24 10:00	10/15/24 18:17	1
Lead	**0.582**		0.500	0.260	ug/L		10/14/24 10:00	10/15/24 18:17	1
Nickel	**87.0**		5.00	2.10	ug/L		10/14/24 10:00	10/15/24 18:17	1
Selenium	<1.40		5.00	1.40	ug/L		10/14/24 10:00	10/15/24 18:17	1
Silver	<0.500		1.00	0.500	ug/L		10/14/24 10:00	10/15/24 18:17	1
Thallium	**0.867**	**J**	1.00	0.570	ug/L		10/14/24 10:00	10/22/24 14:37	1
Vanadium	**2.38**	**J**	5.00	1.10	ug/L		10/14/24 10:00	10/15/24 18:17	1
Zinc	<9.70		20.0	9.70	ug/L		10/14/24 10:00	10/15/24 18:17	1
Tin	<2.30		5.00	2.30	ug/L		10/14/24 10:00	10/15/24 18:17	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.110		0.200	0.110	ug/L		10/17/24 15:15	10/18/24 15:38	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total (SW846 9012B)	**4.98**	**J**	10.0	3.50	ug/L		10/16/24 08:55	10/16/24 17:31	1
Total Suspended Solids (USGS I-3765-85)	**46.0**		15.0	11.1	mg/L			10/11/24 14:06	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**6.55**				NTU			10/09/24 14:00	1

Client: AECOM
Job ID: 310-292482-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Trip Blank
Lab Sample ID: 310-292482-3
Date Collected: 10/09/24 06:00
Matrix: Water
Date Received: 10/11/24 10:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			10/15/24 00:13	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			10/15/24 00:13	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			10/15/24 00:13	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			10/15/24 00:13	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			10/15/24 00:13	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			10/15/24 00:13	1
1,1-Dichloropropene	<0.430		1.00	0.430	ug/L			10/15/24 00:13	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			10/15/24 00:13	1
1,2,4-Trichlorobenzene	<0.750		5.00	0.750	ug/L			10/15/24 00:13	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			10/15/24 00:13	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			10/15/24 00:13	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			10/15/24 00:13	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			10/15/24 00:13	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			10/15/24 00:13	1
1,3-Dichlorobenzene	<0.300		1.00	0.300	ug/L			10/15/24 00:13	1
1,3-Dichloropropane	<0.400		1.00	0.400	ug/L			10/15/24 00:13	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			10/15/24 00:13	1
2,2-Dichloropropane	<0.690		4.00	0.690	ug/L			10/15/24 00:13	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			10/15/24 00:13	1
2-Hexanone	<2.00		10.0	2.00	ug/L			10/15/24 00:13	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			10/15/24 00:13	1
Acetone	<3.10		10.0	3.10	ug/L			10/15/24 00:13	1
Acrolein	<3.60		10.0	3.60	ug/L			10/15/24 00:13	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			10/15/24 00:13	1
Allyl chloride	<0.700		2.00	0.700	ug/L			10/15/24 00:13	1
Benzene	<0.220		0.500	0.220	ug/L			10/15/24 00:13	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			10/15/24 00:13	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			10/15/24 00:13	1
Bromoform	<0.780		5.00	0.780	ug/L			10/15/24 00:13	1
Bromomethane	<1.10		4.00	1.10	ug/L			10/15/24 00:13	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			10/15/24 00:13	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			10/15/24 00:13	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			10/15/24 00:13	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			10/15/24 00:13	1
Chloroethane	<0.790		4.00	0.790	ug/L			10/15/24 00:13	1
Chloroform	<1.30		3.00	1.30	ug/L			10/15/24 00:13	1
Chloromethane	<0.610		3.00	0.610	ug/L			10/15/24 00:13	1
Chloroprene	<0.230		1.00	0.230	ug/L			10/15/24 00:13	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			10/15/24 00:13	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			10/15/24 00:13	1
Dibromomethane	<0.330		1.00	0.330	ug/L			10/15/24 00:13	1
Dichlorodifluoromethane	<0.250		3.00	0.250	ug/L			10/15/24 00:13	1
Ethyl methacrylate	<0.680		2.00	0.680	ug/L			10/15/24 00:13	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			10/15/24 00:13	1
Iodomethane	<7.00		10.0	7.00	ug/L			10/15/24 00:13	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			10/15/24 00:13	1
Methacrylonitrile	<3.30		10.0	3.30	ug/L			10/15/24 00:13	1
Methyl methacrylate	<0.760		2.00	0.760	ug/L			10/15/24 00:13	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			10/15/24 00:13	1

Client: AECOM
Job ID: 310-292482-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Trip Blank
Lab Sample ID: 310-292482-3
Date Collected: 10/09/24 06:00
Matrix: Water
Date Received: 10/11/24 10:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<3.00		5.00	3.00	ug/L			10/15/24 00:13	1
o-Xylene	<0.400		1.00	0.400	ug/L			10/15/24 00:13	1
Propionitrile	<3.40		10.0	3.40	ug/L			10/15/24 00:13	1
Styrene	<0.370		1.00	0.370	ug/L			10/15/24 00:13	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			10/15/24 00:13	1
Toluene	<0.430		1.00	0.430	ug/L			10/15/24 00:13	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			10/15/24 00:13	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			10/15/24 00:13	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			10/15/24 00:13	1
Trichloroethene	<0.430		1.00	0.430	ug/L			10/15/24 00:13	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			10/15/24 00:13	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			10/15/24 00:13	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			10/15/24 00:13	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			10/15/24 00:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*102*		*73 - 130*		*10/15/24 00:13*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*10/15/24 00:13*	*1*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*		*10/15/24 00:13*	*1*

Definitions/Glossary

Client: AECOM
Job ID: 310-292482-1
Project/Site: Black Hawk County Landfill (IDNR)

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
S1-	Surrogate recovery exceeds control limits, low biased.

GC Semi VOA

Qualifier	Qualifier Description
p	The %RPD between the primary and confirmation column/detector is >40%. The lower value has been reported.
S1+	Surrogate recovery exceeds control limits, high biased.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Surrogate Summary

Client: AECOM
Project/Site: Black Hawk County Landfill (IDNR)

Job ID: 310-292482-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-292482-1	OW-226B	100	99	99
310-292482-2	OW-227B	100	99	98
310-292482-3	Trip Blank	102	98	100
LCS 310-436141/6	Lab Control Sample	100	99	100
LCS 310-436141/7	Lab Control Sample	103	98	100
LCS 310-436144/6	Lab Control Sample	101	100	99
LCS 310-436144/7	Lab Control Sample	100	99	99
MB 310-436141/5	Method Blank	103	99	101
MB 310-436144/5	Method Blank	102	98	100

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		2FP	PHL	NBZ	FBP	TBP	TPHL
Lab Sample ID	Client Sample ID	(25-110)	(21-110)	(45-129)	(39-118)	(27-136)	(12-144)
310-292482-1	OW-226B	66	57	91	99	101	89
310-292482-2	OW-227B	23 S1-	21	32 S1-	32 S1-	34	35
LCS 310-435895/2-A	Lab Control Sample	55	46	72	74	90	98
LCSD 310-435895/3-A	Lab Control Sample Dup	48	42	59	58	74	94
MB 310-435895/1-A	Method Blank	49	42	64	61	66	94

Surrogate Legend

2FP = 2-Fluorophenol (Surr)
PHL = Phenol-d5 (Surr)
NBZ = Nitrobenzene-d5 (Surr)
FBP = 2-Fluorobiphenyl (Surr)
TBP = 2,4,6-Tribromophenol (Surr)
TPHL = Terphenyl-d14 (Surr)

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		DCB1	TCX1
Lab Sample ID	Client Sample ID	(10-136)	(10-130)
310-292482-1	OW-226B	37	89
310-292482-2	OW-227B	42	109
310-292482-2 MS	OW-227B	44	78
310-292482-2 MSD	OW-227B	20	45
LCS 310-435953/16-A	Lab Control Sample	16	50
MB 310-435953/1-A	Method Blank	64	124

Surrogate Legend

DCB = DCB Decachlorobiphenyl (Surr)
TCX = Tetrachloro-m-xylene (Surr)

Surrogate Summary

Client: AECOM
Job ID: 310-292482-1
Project/Site: Black Hawk County Landfill (IDNR)

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)									
		DCB1	TCX1								
Lab Sample ID	Client Sample ID	(10-136)	(10-130)								
310-292482-1	OW-226B	37	89								
310-292482-1 MS	OW-226B	47	72								
310-292482-1 MSD	OW-226B	28	47								
310-292482-2	OW-227B	42	109								
MB 310-435953/1-A	Method Blank	64	124								

Surrogate Legend

DCB = DCB Decachlorobiphenyl (Surr)

TCX = Tetrachloro-m-xylene (Surr)

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)									
		DCB1	TCX1								
Lab Sample ID	Client Sample ID										
LCSD 310-435953/17-A	Lab Control Sample Dup										

Surrogate Legend

DCB = DCB Decachlorobiphenyl (Surr)

TCX = Tetrachloro-m-xylene (Surr)

Method: 8151A - Herbicides (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)									
		DCPAA1	DCPAA2								
Lab Sample ID	Client Sample ID	(34-142)	(34-142)								
310-292482-1	OW-226B	91 p	198 S1+								
310-292482-2	OW-227B	78 p	215 S1+								
LCS 410-563718/2-A	Lab Control Sample	74									
MB 410-563718/1-A	Method Blank	77									

Surrogate Legend

DCPAA = DCAA

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 310-436141/5
Matrix: Water
Analysis Batch: 436141

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			10/14/24 23:04	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			10/14/24 23:04	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			10/14/24 23:04	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			10/14/24 23:04	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			10/14/24 23:04	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			10/14/24 23:04	1
1,1-Dichloropropene	<0.430		1.00	0.430	ug/L			10/14/24 23:04	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			10/14/24 23:04	1
1,2,4-Trichlorobenzene	<0.750		5.00	0.750	ug/L			10/14/24 23:04	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			10/14/24 23:04	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			10/14/24 23:04	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			10/14/24 23:04	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			10/14/24 23:04	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			10/14/24 23:04	1
1,3-Dichlorobenzene	<0.300		1.00	0.300	ug/L			10/14/24 23:04	1
1,3-Dichloropropane	<0.400		1.00	0.400	ug/L			10/14/24 23:04	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			10/14/24 23:04	1
2,2-Dichloropropane	<0.690		4.00	0.690	ug/L			10/14/24 23:04	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			10/14/24 23:04	1
2-Hexanone	<2.00		10.0	2.00	ug/L			10/14/24 23:04	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			10/14/24 23:04	1
Acetone	<3.10		10.0	3.10	ug/L			10/14/24 23:04	1
Acrolein	<3.60		10.0	3.60	ug/L			10/14/24 23:04	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			10/14/24 23:04	1
Allyl chloride	<0.700		2.00	0.700	ug/L			10/14/24 23:04	1
Benzene	<0.220		0.500	0.220	ug/L			10/14/24 23:04	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			10/14/24 23:04	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			10/14/24 23:04	1
Bromoform	<0.780		5.00	0.780	ug/L			10/14/24 23:04	1
Bromomethane	<1.10		4.00	1.10	ug/L			10/14/24 23:04	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			10/14/24 23:04	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			10/14/24 23:04	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			10/14/24 23:04	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			10/14/24 23:04	1
Chloroethane	<0.790		4.00	0.790	ug/L			10/14/24 23:04	1
Chloroform	<1.30		3.00	1.30	ug/L			10/14/24 23:04	1
Chloromethane	<0.610		3.00	0.610	ug/L			10/14/24 23:04	1
Chloroprene	<0.230		1.00	0.230	ug/L			10/14/24 23:04	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			10/14/24 23:04	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			10/14/24 23:04	1
Dibromomethane	<0.330		1.00	0.330	ug/L			10/14/24 23:04	1
Dichlorodifluoromethane	<0.250		3.00	0.250	ug/L			10/14/24 23:04	1
Ethyl methacrylate	<0.680		2.00	0.680	ug/L			10/14/24 23:04	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			10/14/24 23:04	1
Iodomethane	<7.00		10.0	7.00	ug/L			10/14/24 23:04	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			10/14/24 23:04	1
Methacrylonitrile	<3.30		10.0	3.30	ug/L			10/14/24 23:04	1
Methyl methacrylate	<0.760		2.00	0.760	ug/L			10/14/24 23:04	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-436141/5
Matrix: Water
Analysis Batch: 436141

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylene Chloride	<1.70		5.00	1.70	ug/L			10/14/24 23:04	1
Naphthalene	<3.00		5.00	3.00	ug/L			10/14/24 23:04	1
o-Xylene	<0.400		1.00	0.400	ug/L			10/14/24 23:04	1
Propionitrile	<3.40		10.0	3.40	ug/L			10/14/24 23:04	1
Styrene	<0.370		1.00	0.370	ug/L			10/14/24 23:04	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			10/14/24 23:04	1
Toluene	<0.430		1.00	0.430	ug/L			10/14/24 23:04	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			10/14/24 23:04	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			10/14/24 23:04	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			10/14/24 23:04	1
Trichloroethene	<0.430		1.00	0.430	ug/L			10/14/24 23:04	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			10/14/24 23:04	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			10/14/24 23:04	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			10/14/24 23:04	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			10/14/24 23:04	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*103*		*73 - 130*		*10/14/24 23:04*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*10/14/24 23:04*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*10/14/24 23:04*	*1*

Lab Sample ID: LCS 310-436141/6
Matrix: Water
Analysis Batch: 436141

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	20.0	19.29		ug/L		96	71 - 120
1,1,1-Trichloroethane	20.0	19.22		ug/L		96	73 - 129
1,1,2,2-Tetrachloroethane	20.0	19.33		ug/L		97	68 - 124
1,1,2-Trichloroethane	20.0	19.24		ug/L		96	73 - 123
1,1-Dichloroethane	20.0	18.69		ug/L		93	70 - 127
1,1-Dichloroethene	20.0	18.65		ug/L		93	63 - 132
1,1-Dichloropropene	20.0	19.15		ug/L		96	69 - 132
1,2,3-Trichloropropane	20.0	19.29		ug/L		96	65 - 127
1,2,4-Trichlorobenzene	20.0	20.03		ug/L		100	68 - 124
1,2-Dibromo-3-Chloropropane	20.0	18.33		ug/L		92	50 - 150
1,2-Dibromoethane (EDB)	20.0	19.45		ug/L		97	75 - 125
1,2-Dichlorobenzene	20.0	19.75		ug/L		99	74 - 120
1,2-Dichloroethane	20.0	18.79		ug/L		94	71 - 125
1,2-Dichloropropane	20.0	18.62		ug/L		93	73 - 124
1,3-Dichlorobenzene	20.0	19.66		ug/L		98	72 - 120
1,3-Dichloropropane	20.0	19.33		ug/L		97	72 - 125
1,4-Dichlorobenzene	20.0	19.47		ug/L		97	72 - 120
2,2-Dichloropropane	20.0	18.57		ug/L		93	50 - 150
2-Butanone (MEK)	40.0	34.88		ug/L		87	50 - 150
2-Hexanone	40.0	37.11		ug/L		93	60 - 140
4-Methyl-2-pentanone (MIBK)	40.0	37.49		ug/L		94	60 - 139
Acetone	40.0	31.86		ug/L		80	50 - 150

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-436141/6
Matrix: Water
Analysis Batch: 436141

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Acrolein	95.5	82.42		ug/L		86	49 - 150
Acrylonitrile	200	180.8		ug/L		90	50 - 150
Allyl chloride	20.0	18.12		ug/L		91	49 - 150
Benzene	20.0	18.71		ug/L		94	72 - 124
Bromochloromethane	20.0	19.36		ug/L		97	73 - 130
Bromodichloromethane	20.0	19.05		ug/L		95	74 - 122
Bromoform	20.0	18.55		ug/L		93	61 - 122
Carbon disulfide	20.0	18.10		ug/L		91	59 - 135
Carbon tetrachloride	20.0	19.23		ug/L		96	67 - 132
Chlorobenzene	20.0	19.36		ug/L		97	76 - 120
Chlorodibromomethane	20.0	18.89		ug/L		94	71 - 121
Chloroform	20.0	18.31		ug/L		92	72 - 125
Chloroprene	20.0	18.71		ug/L		94	69 - 133
cis-1,2-Dichloroethene	20.0	18.88		ug/L		94	74 - 123
cis-1,3-Dichloropropene	20.0	18.95		ug/L		95	71 - 125
Dibromomethane	20.0	19.11		ug/L		96	74 - 125
Ethyl methacrylate	20.0	19.07		ug/L		95	70 - 129
Ethylbenzene	20.0	19.62		ug/L		98	74 - 122
Iodomethane	20.0	12.95		ug/L		65	10 - 150
Methacrylonitrile	200	186.3		ug/L		93	69 - 129
Methyl methacrylate	40.0	38.49		ug/L		96	68 - 131
Methylene Chloride	20.0	18.66		ug/L		93	50 - 150
Naphthalene	20.0	20.24		ug/L		101	50 - 150
Propionitrile	200	183.3		ug/L		92	63 - 135
Styrene	20.0	20.31		ug/L		102	74 - 121
Tetrachloroethene	20.0	19.79		ug/L		99	71 - 130
Toluene	20.0	18.98		ug/L		95	74 - 123
trans-1,2-Dichloroethene	20.0	18.73		ug/L		94	70 - 126
trans-1,3-Dichloropropene	20.0	18.88		ug/L		94	69 - 123
trans-1,4-Dichloro-2-butene	20.0	16.32		ug/L		82	50 - 150
Trichloroethene	20.0	19.25		ug/L		96	72 - 126
Vinyl acetate	40.0	36.79		ug/L		92	50 - 150
Xylenes, Total	40.0	39.49		ug/L		99	73 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*100*		*73 - 130*
Toluene-d8 (Surr)	*99*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*

Lab Sample ID: LCS 310-436141/7
Matrix: Water
Analysis Batch: 436141

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	15.00		ug/L		75	23 - 150
Chloroethane	20.0	17.91		ug/L		90	54 - 136
Chloromethane	20.0	17.79		ug/L		89	38 - 150
Dichlorodifluoromethane	20.0	21.10		ug/L		106	39 - 150

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-436141/7
Matrix: Water
Analysis Batch: 436141

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Trichlorofluoromethane	20.0	20.49		ug/L		102	54 - 149
Vinyl chloride	20.0	18.63		ug/L		93	56 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*103*		*73 - 130*
Toluene-d8 (Surr)	*98*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*

Lab Sample ID: MB 310-436144/5
Matrix: Water
Analysis Batch: 436144

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			10/15/24 10:04	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			10/15/24 10:04	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			10/15/24 10:04	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			10/15/24 10:04	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			10/15/24 10:04	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			10/15/24 10:04	1
1,1-Dichloropropene	<0.430		1.00	0.430	ug/L			10/15/24 10:04	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			10/15/24 10:04	1
1,2,4-Trichlorobenzene	<0.750		5.00	0.750	ug/L			10/15/24 10:04	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			10/15/24 10:04	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			10/15/24 10:04	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			10/15/24 10:04	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			10/15/24 10:04	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			10/15/24 10:04	1
1,3-Dichlorobenzene	<0.300		1.00	0.300	ug/L			10/15/24 10:04	1
1,3-Dichloropropane	<0.400		1.00	0.400	ug/L			10/15/24 10:04	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			10/15/24 10:04	1
2,2-Dichloropropane	<0.690		4.00	0.690	ug/L			10/15/24 10:04	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			10/15/24 10:04	1
2-Hexanone	<2.00		10.0	2.00	ug/L			10/15/24 10:04	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			10/15/24 10:04	1
Acetone	<3.10		10.0	3.10	ug/L			10/15/24 10:04	1
Acrolein	<3.60		10.0	3.60	ug/L			10/15/24 10:04	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			10/15/24 10:04	1
Allyl chloride	<0.700		2.00	0.700	ug/L			10/15/24 10:04	1
Benzene	<0.220		0.500	0.220	ug/L			10/15/24 10:04	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			10/15/24 10:04	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			10/15/24 10:04	1
Bromoform	<0.780		5.00	0.780	ug/L			10/15/24 10:04	1
Bromomethane	<1.10		4.00	1.10	ug/L			10/15/24 10:04	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			10/15/24 10:04	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			10/15/24 10:04	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			10/15/24 10:04	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			10/15/24 10:04	1
Chloroethane	<0.790		4.00	0.790	ug/L			10/15/24 10:04	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-436144/5
Matrix: Water
Analysis Batch: 436144

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloroform	<1.30		3.00	1.30	ug/L			10/15/24 10:04	1
Chloromethane	<0.610		3.00	0.610	ug/L			10/15/24 10:04	1
Chloroprene	<0.230		1.00	0.230	ug/L			10/15/24 10:04	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			10/15/24 10:04	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			10/15/24 10:04	1
Dibromomethane	<0.330		1.00	0.330	ug/L			10/15/24 10:04	1
Dichlorodifluoromethane	<0.250		3.00	0.250	ug/L			10/15/24 10:04	1
Ethyl methacrylate	<0.680		2.00	0.680	ug/L			10/15/24 10:04	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			10/15/24 10:04	1
Iodomethane	<7.00		10.0	7.00	ug/L			10/15/24 10:04	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			10/15/24 10:04	1
Methacrylonitrile	<3.30		10.0	3.30	ug/L			10/15/24 10:04	1
Methyl methacrylate	<0.760		2.00	0.760	ug/L			10/15/24 10:04	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			10/15/24 10:04	1
Naphthalene	<3.00		5.00	3.00	ug/L			10/15/24 10:04	1
o-Xylene	<0.400		1.00	0.400	ug/L			10/15/24 10:04	1
Propionitrile	<3.40		10.0	3.40	ug/L			10/15/24 10:04	1
Styrene	<0.370		1.00	0.370	ug/L			10/15/24 10:04	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			10/15/24 10:04	1
Toluene	<0.430		1.00	0.430	ug/L			10/15/24 10:04	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			10/15/24 10:04	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			10/15/24 10:04	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			10/15/24 10:04	1
Trichloroethene	<0.430		1.00	0.430	ug/L			10/15/24 10:04	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			10/15/24 10:04	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			10/15/24 10:04	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			10/15/24 10:04	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			10/15/24 10:04	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*102*		*73 - 130*		*10/15/24 10:04*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*10/15/24 10:04*	*1*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*		*10/15/24 10:04*	*1*

Lab Sample ID: LCS 310-436144/6
Matrix: Water
Analysis Batch: 436144

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	20.0	19.92		ug/L		100	71 - 120
1,1,1-Trichloroethane	20.0	20.31		ug/L		102	73 - 129
1,1,2,2-Tetrachloroethane	20.0	19.23		ug/L		96	68 - 124
1,1,2-Trichloroethane	20.0	19.78		ug/L		99	73 - 123
1,1-Dichloroethane	20.0	19.26		ug/L		96	70 - 127
1,1-Dichloroethene	20.0	19.54		ug/L		98	63 - 132
1,1-Dichloropropene	20.0	20.19		ug/L		101	69 - 132
1,2,3-Trichloropropane	20.0	19.50		ug/L		98	65 - 127
1,2,4-Trichlorobenzene	20.0	20.23		ug/L		101	68 - 124

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-436144/6
Matrix: Water
Analysis Batch: 436144

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2-Dibromo-3-Chloropropane	20.0	18.78		ug/L		94	50 - 150
1,2-Dibromoethane (EDB)	20.0	20.16		ug/L		101	75 - 125
1,2-Dichlorobenzene	20.0	20.12		ug/L		101	74 - 120
1,2-Dichloroethane	20.0	19.25		ug/L		96	71 - 125
1,2-Dichloropropane	20.0	18.99		ug/L		95	73 - 124
1,3-Dichlorobenzene	20.0	20.13		ug/L		101	72 - 120
1,3-Dichloropropane	20.0	19.55		ug/L		98	72 - 125
1,4-Dichlorobenzene	20.0	19.89		ug/L		99	72 - 120
2,2-Dichloropropane	20.0	16.70		ug/L		83	50 - 150
2-Butanone (MEK)	40.0	35.15		ug/L		88	50 - 150
2-Hexanone	40.0	37.32		ug/L		93	60 - 140
4-Methyl-2-pentanone (MIBK)	40.0	37.61		ug/L		94	60 - 139
Acetone	40.0	34.94		ug/L		87	50 - 150
Acrolein	95.5	78.06		ug/L		82	49 - 150
Acrylonitrile	200	183.9		ug/L		92	50 - 150
Allyl chloride	20.0	18.56		ug/L		93	49 - 150
Benzene	20.0	19.56		ug/L		98	72 - 124
Bromochloromethane	20.0	20.30		ug/L		101	73 - 130
Bromodichloromethane	20.0	19.63		ug/L		98	74 - 122
Bromoform	20.0	19.26		ug/L		96	61 - 122
Carbon disulfide	20.0	18.96		ug/L		95	59 - 135
Carbon tetrachloride	20.0	20.12		ug/L		101	67 - 132
Chlorobenzene	20.0	20.07		ug/L		100	76 - 120
Chlorodibromomethane	20.0	19.72		ug/L		99	71 - 121
Chloroform	20.0	18.73		ug/L		94	72 - 125
Chloroprene	20.0	19.63		ug/L		98	69 - 133
cis-1,2-Dichloroethene	20.0	19.62		ug/L		98	74 - 123
cis-1,3-Dichloropropene	20.0	18.90		ug/L		95	71 - 125
Dibromomethane	20.0	19.52		ug/L		98	74 - 125
Ethyl methacrylate	20.0	19.32		ug/L		97	70 - 129
Ethylbenzene	20.0	20.63		ug/L		103	74 - 122
Iodomethane	20.0	13.13		ug/L		66	10 - 150
Methacrylonitrile	200	190.0		ug/L		95	69 - 129
Methyl methacrylate	40.0	39.15		ug/L		98	68 - 131
Methylene Chloride	20.0	19.10		ug/L		96	50 - 150
Naphthalene	20.0	20.18		ug/L		101	50 - 150
Propionitrile	200	186.7		ug/L		93	63 - 135
Styrene	20.0	21.00		ug/L		105	74 - 121
Tetrachloroethene	20.0	20.80		ug/L		104	71 - 130
Toluene	20.0	19.76		ug/L		99	74 - 123
trans-1,2-Dichloroethene	20.0	19.57		ug/L		98	70 - 126
trans-1,3-Dichloropropene	20.0	18.56		ug/L		93	69 - 123
trans-1,4-Dichloro-2-butene	20.0	16.59		ug/L		83	50 - 150
Trichloroethene	20.0	20.28		ug/L		101	72 - 126
Vinyl acetate	40.0	34.59		ug/L		86	50 - 150
Xylenes, Total	40.0	41.10		ug/L		103	73 - 123

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-436144/6
Matrix: Water
Analysis Batch: 436144

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Dibromofluoromethane (Surr)	*101*		*73 - 130*
Toluene-d8 (Surr)	*100*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*

Lab Sample ID: LCS 310-436144/7
Matrix: Water
Analysis Batch: 436144

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	15.62		ug/L		78	23 - 150
Chloroethane	20.0	19.59		ug/L		98	54 - 136
Chloromethane	20.0	18.83		ug/L		94	38 - 150
Dichlorodifluoromethane	20.0	22.57		ug/L		113	39 - 150
Trichlorofluoromethane	20.0	21.36		ug/L		107	54 - 149
Vinyl chloride	20.0	20.02		ug/L		100	56 - 140

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Dibromofluoromethane (Surr)	*100*		*73 - 130*
Toluene-d8 (Surr)	*99*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 310-435895/1-A
Matrix: Water
Analysis Batch: 436520

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 435895

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4,5-Tetrachlorobenzene	<0.540		10.0	0.540	ug/L		10/11/24 06:28	10/17/24 14:28	1
1,3,5-Trinitrobenzene	<2.30		10.0	2.30	ug/L		10/11/24 06:28	10/17/24 14:28	1
1,3-Dinitrobenzene	<3.20		10.0	3.20	ug/L		10/11/24 06:28	10/17/24 14:28	1
1,4-Naphthoquinone	<3.60		10.0	3.60	ug/L		10/11/24 06:28	10/17/24 14:28	1
1,4-phenylenediamine	<1.90		10.0	1.90	ug/L		10/11/24 06:28	10/17/24 14:28	1
1-Naphthylamine	<2.50		10.0	2.50	ug/L		10/11/24 06:28	10/17/24 14:28	1
2,3,4,6-Tetrachlorophenol	<5.30		10.0	5.30	ug/L		10/11/24 06:28	10/17/24 14:28	1
2,4,5-Trichlorophenol	<5.30		10.0	5.30	ug/L		10/11/24 06:28	10/17/24 14:28	1
2,4,6-Trichlorophenol	<5.00		10.0	5.00	ug/L		10/11/24 06:28	10/17/24 14:28	1
2,4-Dichlorophenol	<0.850		10.0	0.850	ug/L		10/11/24 06:28	10/17/24 14:28	1
2,4-Dimethylphenol	<0.580		10.0	0.580	ug/L		10/11/24 06:28	10/17/24 14:28	1
2,4-Dinitrophenol	<13.0		20.0	13.0	ug/L		10/11/24 06:28	10/17/24 14:28	1
2,4-Dinitrotoluene	<6.40		10.0	6.40	ug/L		10/11/24 06:28	10/17/24 14:28	1
2,6-Dichlorophenol	<0.690		10.0	0.690	ug/L		10/11/24 06:28	10/17/24 14:28	1
2,6-Dinitrotoluene	<0.520		10.0	0.520	ug/L		10/11/24 06:28	10/17/24 14:28	1
2-Acetylaminofluorene	<2.70		10.0	2.70	ug/L		10/11/24 06:28	10/17/24 14:28	1
2-Chloronaphthalene	<0.640		10.0	0.640	ug/L		10/11/24 06:28	10/17/24 14:28	1
2-Chlorophenol	<0.540		10.0	0.540	ug/L		10/11/24 06:28	10/17/24 14:28	1
2-Methylnaphthalene	<0.590		10.0	0.590	ug/L		10/11/24 06:28	10/17/24 14:28	1
2-Methylphenol	<0.650		10.0	0.650	ug/L		10/11/24 06:28	10/17/24 14:28	1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 310-435895/1-A
Matrix: Water
Analysis Batch: 436520

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 435895

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Naphthylamine	<2.10		10.0	2.10	ug/L		10/11/24 06:28	10/17/24 14:28	1
2-Nitroaniline	<5.90		10.0	5.90	ug/L		10/11/24 06:28	10/17/24 14:28	1
2-Nitrophenol	<6.80		10.0	6.80	ug/L		10/11/24 06:28	10/17/24 14:28	1
3,3'-Dichlorobenzidine	<1.40		10.0	1.40	ug/L		10/11/24 06:28	10/17/24 14:28	1
3,3'-Dimethylbenzidine	<1.50		10.0	1.50	ug/L		10/11/24 06:28	10/17/24 14:28	1
3-Methylcholanthrene	<0.320		10.0	0.320	ug/L		10/11/24 06:28	10/17/24 14:28	1
3-Nitroaniline	<2.70		10.0	2.70	ug/L		10/11/24 06:28	10/17/24 14:28	1
4,6-Dinitro-2-methylphenol	<6.90		10.0	6.90	ug/L		10/11/24 06:28	10/17/24 14:28	1
4-Aminobiphenyl	<2.20		10.0	2.20	ug/L		10/11/24 06:28	10/17/24 14:28	1
4-Bromophenyl phenyl ether	<0.700		10.0	0.700	ug/L		10/11/24 06:28	10/17/24 14:28	1
4-Chloro-3-methylphenol	<0.840		10.0	0.840	ug/L		10/11/24 06:28	10/17/24 14:28	1
4-Chloroaniline	<0.620		10.0	0.620	ug/L		10/11/24 06:28	10/17/24 14:28	1
4-Chlorophenyl phenyl ether	<0.690		10.0	0.690	ug/L		10/11/24 06:28	10/17/24 14:28	1
Methylphenol, 3 & 4	<0.700		10.0	0.700	ug/L		10/11/24 06:28	10/17/24 14:28	1
4-Nitroaniline	<1.30		10.0	1.30	ug/L		10/11/24 06:28	10/17/24 14:28	1
4-Nitrophenol	<7.60		10.0	7.60	ug/L		10/11/24 06:28	10/17/24 14:28	1
5-Nitro-o-toluidine	<2.80		10.0	2.80	ug/L		10/11/24 06:28	10/17/24 14:28	1
7,12-Dimethylbenz(a)anthracene	<1.90		10.0	1.90	ug/L		10/11/24 06:28	10/17/24 14:28	1
Acenaphthene	<0.640		10.0	0.640	ug/L		10/11/24 06:28	10/17/24 14:28	1
Acenaphthylene	<0.720		10.0	0.720	ug/L		10/11/24 06:28	10/17/24 14:28	1
Acetophenone	<0.690		10.0	0.690	ug/L		10/11/24 06:28	10/17/24 14:28	1
Anthracene	<0.870		10.0	0.870	ug/L		10/11/24 06:28	10/17/24 14:28	1
Benzo[a]anthracene	<0.850		10.0	0.850	ug/L		10/11/24 06:28	10/17/24 14:28	1
Benzo[a]pyrene	<8.10		10.0	8.10	ug/L		10/11/24 06:28	10/17/24 14:28	1
Benzo[b]fluoranthene	<4.90		10.0	4.90	ug/L		10/11/24 06:28	10/17/24 14:28	1
Benzo[g,h,i]perylene	<6.30		10.0	6.30	ug/L		10/11/24 06:28	10/17/24 14:28	1
Benzo[k]fluoranthene	<2.20		10.0	2.20	ug/L		10/11/24 06:28	10/17/24 14:28	1
Benzyl alcohol	<1.30		10.0	1.30	ug/L		10/11/24 06:28	10/17/24 14:28	1
Bis(2-chloroethoxy)methane	<0.760		10.0	0.760	ug/L		10/11/24 06:28	10/17/24 14:28	1
Bis(2-chloroethyl)ether	<0.820		10.0	0.820	ug/L		10/11/24 06:28	10/17/24 14:28	1
bis (2-chloroisopropyl) ether	<0.540		10.0	0.540	ug/L		10/11/24 06:28	10/17/24 14:28	1
Bis(2-ethylhexyl) phthalate	<5.50		10.0	5.50	ug/L		10/11/24 06:28	10/17/24 14:28	1
Butyl benzyl phthalate	<5.40		10.0	5.40	ug/L		10/11/24 06:28	10/17/24 14:28	1
Chlorobenzilate	<3.60		10.0	3.60	ug/L		10/11/24 06:28	10/17/24 14:28	1
Chrysene	<0.870		10.0	0.870	ug/L		10/11/24 06:28	10/17/24 14:28	1
Diallate	<4.00		10.0	4.00	ug/L		10/11/24 06:28	10/17/24 14:28	1
Dibenzo(a,h)anthracene	<3.90		10.0	3.90	ug/L		10/11/24 06:28	10/17/24 14:28	1
Dibenzofuran	<0.740		10.0	0.740	ug/L		10/11/24 06:28	10/17/24 14:28	1
Diethyl phthalate	<1.70		10.0	1.70	ug/L		10/11/24 06:28	10/17/24 14:28	1
Dimethoate	<3.60		10.0	3.60	ug/L		10/11/24 06:28	10/17/24 14:28	1
Dimethyl phthalate	<1.00		10.0	1.00	ug/L		10/11/24 06:28	10/17/24 14:28	1
Di-n-butyl phthalate	<5.60		10.0	5.60	ug/L		10/11/24 06:28	10/17/24 14:28	1
Di-n-octyl phthalate	<7.00		20.0	7.00	ug/L		10/11/24 06:28	10/17/24 14:28	1
Dinoseb	<2.40		10.0	2.40	ug/L		10/11/24 06:28	10/17/24 14:28	1
Diphenylamine	<6.00		10.0	6.00	ug/L		10/11/24 06:28	10/17/24 14:28	1
Disulfoton	<2.40		10.0	2.40	ug/L		10/11/24 06:28	10/17/24 14:28	1
Ethyl methanesulfonate	<3.60		10.0	3.60	ug/L		10/11/24 06:28	10/17/24 14:28	1
Ethyl Parathion	<2.20		10.0	2.20	ug/L		10/11/24 06:28	10/17/24 14:28	1
Famphur	<3.80		10.0	3.80	ug/L		10/11/24 06:28	10/17/24 14:28	1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 310-435895/1-A
Matrix: Water
Analysis Batch: 436520

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 435895

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<1.70		10.0	1.70	ug/L		10/11/24 06:28	10/17/24 14:28	1
Fluorene	<0.790		10.0	0.790	ug/L		10/11/24 06:28	10/17/24 14:28	1
Hexachlorobenzene	<0.700		10.0	0.700	ug/L		10/11/24 06:28	10/17/24 14:28	1
Hexachlorobutadiene	<0.860		10.0	0.860	ug/L		10/11/24 06:28	10/17/24 14:28	1
Hexachlorocyclopentadiene	<5.10		10.0	5.10	ug/L		10/11/24 06:28	10/17/24 14:28	1
Hexachloroethane	<0.970		10.0	0.970	ug/L		10/11/24 06:28	10/17/24 14:28	1
Hexachloropropene	<2.60		10.0	2.60	ug/L		10/11/24 06:28	10/17/24 14:28	1
Indeno[1,2,3-cd]pyrene	<4.20		10.0	4.20	ug/L		10/11/24 06:28	10/17/24 14:28	1
Isodrin	<4.70		10.0	4.70	ug/L		10/11/24 06:28	10/17/24 14:28	1
Isophorone	<0.930		10.0	0.930	ug/L		10/11/24 06:28	10/17/24 14:28	1
Isosafrole	<2.30		10.0	2.30	ug/L		10/11/24 06:28	10/17/24 14:28	1
Kepone	<1.00		10.0	1.00	ug/L		10/11/24 06:28	10/17/24 14:28	1
Methapyrilene	<0.760		10.0	0.760	ug/L		10/11/24 06:28	10/17/24 14:28	1
Methyl methanesulfonate	<3.30		10.0	3.30	ug/L		10/11/24 06:28	10/17/24 14:28	1
Methyl parathion	<2.30		10.0	2.30	ug/L		10/11/24 06:28	10/17/24 14:28	1
Nitrobenzene	<0.800		10.0	0.800	ug/L		10/11/24 06:28	10/17/24 14:28	1
N-Nitrosodiethylamine	<3.40		10.0	3.40	ug/L		10/11/24 06:28	10/17/24 14:28	1
N-Nitrosodimethylamine	<0.720		10.0	0.720	ug/L		10/11/24 06:28	10/17/24 14:28	1
N-Nitrosodi-n-butylamine	<3.90		10.0	3.90	ug/L		10/11/24 06:28	10/17/24 14:28	1
N-Nitrosodi-n-propylamine	<0.920		10.0	0.920	ug/L		10/11/24 06:28	10/17/24 14:28	1
N-Nitrosodiphenylamine	<0.750		10.0	0.750	ug/L		10/11/24 06:28	10/17/24 14:28	1
N-Nitrosomethylethylamine	<4.90		10.0	4.90	ug/L		10/11/24 06:28	10/17/24 14:28	1
N-Nitrosopiperidine	<2.70		10.0	2.70	ug/L		10/11/24 06:28	10/17/24 14:28	1
N-Nitrosopyrrolidine	<3.60		10.0	3.60	ug/L		10/11/24 06:28	10/17/24 14:28	1
o,o',o''-Triethylphosphorothioate	<3.20		10.0	3.20	ug/L		10/11/24 06:28	10/17/24 14:28	1
o-Toluidine	<2.90		10.0	2.90	ug/L		10/11/24 06:28	10/17/24 14:28	1
p-Dimethylamino azobenzene	<2.20		10.0	2.20	ug/L		10/11/24 06:28	10/17/24 14:28	1
Pentachlorobenzene	<2.80		10.0	2.80	ug/L		10/11/24 06:28	10/17/24 14:28	1
Pentachloronitrobenzene	<5.80		10.0	5.80	ug/L		10/11/24 06:28	10/17/24 14:28	1
Pentachlorophenol	<9.60		10.0	9.60	ug/L		10/11/24 06:28	10/17/24 14:28	1
Phenacetin	<1.90		10.0	1.90	ug/L		10/11/24 06:28	10/17/24 14:28	1
Phenanthrene	<0.790		10.0	0.790	ug/L		10/11/24 06:28	10/17/24 14:28	1
Phenol	<1.10		10.0	1.10	ug/L		10/11/24 06:28	10/17/24 14:28	1
Phorate	<3.20		10.0	3.20	ug/L		10/11/24 06:28	10/17/24 14:28	1
Pronamide	<2.70		10.0	2.70	ug/L		10/11/24 06:28	10/17/24 14:28	1
Pyrene	<0.790		10.0	0.790	ug/L		10/11/24 06:28	10/17/24 14:28	1
Safrole	<2.80		10.0	2.80	ug/L		10/11/24 06:28	10/17/24 14:28	1
Thionazin	<3.50		10.0	3.50	ug/L		10/11/24 06:28	10/17/24 14:28	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorophenol (Surr)	*49*		*25 - 110*	*10/11/24 06:28*	*10/17/24 14:28*	*1*
Phenol-d5 (Surr)	*42*		*21 - 110*	*10/11/24 06:28*	*10/17/24 14:28*	*1*
Nitrobenzene-d5 (Surr)	*64*		*45 - 129*	*10/11/24 06:28*	*10/17/24 14:28*	*1*
2-Fluorobiphenyl (Surr)	*61*		*39 - 118*	*10/11/24 06:28*	*10/17/24 14:28*	*1*
2,4,6-Tribromophenol (Surr)	*66*		*27 - 136*	*10/11/24 06:28*	*10/17/24 14:28*	*1*
Terphenyl-d14 (Surr)	*94*		*12 - 144*	*10/11/24 06:28*	*10/17/24 14:28*	*1*

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 310-435895/2-A
Matrix: Water
Analysis Batch: 436520

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 435895

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2,4,5-Tetrachlorobenzene	100	57.60		ug/L		58	36 - 110
1,3-Dinitrobenzene	100	73.92		ug/L		74	45 - 138
2,3,4,6-Tetrachlorophenol	100	79.66		ug/L		80	33 - 134
2,4,5-Trichlorophenol	100	82.64		ug/L		83	35 - 133
2,4,6-Trichlorophenol	100	77.13		ug/L		77	28 - 139
2,4-Dichlorophenol	100	91.79		ug/L		92	41 - 124
2,4-Dimethylphenol	100	72.62		ug/L		73	31 - 142
2,4-Dinitrophenol	200	125.6		ug/L		63	10 - 138
2,4-Dinitrotoluene	100	88.61		ug/L		89	47 - 137
2,6-Dichlorophenol	100	80.95		ug/L		81	30 - 130
2,6-Dinitrotoluene	100	86.49		ug/L		86	51 - 130
2-Chloronaphthalene	100	51.77		ug/L		52	37 - 110
2-Chlorophenol	100	81.09		ug/L		81	44 - 117
2-Methylnaphthalene	100	55.87		ug/L		56	33 - 110
2-Methylphenol	100	75.20		ug/L		75	47 - 118
2-Nitroaniline	100	71.57		ug/L		72	50 - 135
2-Nitrophenol	100	85.09		ug/L		85	41 - 129
3-Nitroaniline	100	83.28		ug/L		83	42 - 139
4,6-Dinitro-2-methylphenol	200	173.6		ug/L		87	22 - 143
4-Bromophenyl phenyl ether	100	87.86		ug/L		88	45 - 119
4-Chloro-3-methylphenol	100	90.89		ug/L		91	49 - 130
4-Chloroaniline	100	73.52		ug/L		74	21 - 139
4-Chlorophenyl phenyl ether	100	76.45		ug/L		76	44 - 116
Methylphenol, 3 & 4	100	73.12		ug/L		73	46 - 117
4-Nitroaniline	100	72.33		ug/L		72	31 - 145
4-Nitrophenol	200	125.2		ug/L		63	18 - 110
Acenaphthene	100	71.89		ug/L		72	43 - 110
Acenaphthylene	100	67.49		ug/L		67	40 - 110
Acetophenone	100	77.81		ug/L		78	48 - 119
Anthracene	100	90.85		ug/L		91	51 - 120
Benzo[a]anthracene	100	85.42		ug/L		85	51 - 123
Benzo[a]pyrene	100	83.08		ug/L		83	48 - 125
Benzo[b]fluoranthene	100	82.83		ug/L		83	49 - 129
Benzo[g,h,i]perylene	100	52.85		ug/L		53	43 - 139
Benzo[k]fluoranthene	100	87.27		ug/L		87	47 - 130
Benzyl alcohol	100	68.73		ug/L		69	39 - 128
Bis(2-chloroethoxy)methane	100	69.64		ug/L		70	48 - 121
Bis(2-chloroethyl)ether	100	65.25		ug/L		65	43 - 123
bis (2-chloroisopropyl) ether	100	73.14		ug/L		73	34 - 123
Bis(2-ethylhexyl) phthalate	100	92.10		ug/L		92	43 - 143
Butyl benzyl phthalate	100	83.82		ug/L		84	46 - 135
Chrysene	100	86.87		ug/L		87	51 - 125
Dibenzo(a,h)anthracene	100	69.28		ug/L		69	38 - 149
Dibenzofuran	100	73.74		ug/L		74	45 - 112
Diethyl phthalate	100	87.71		ug/L		88	43 - 135
Dimethyl phthalate	100	81.14		ug/L		81	43 - 129
Di-n-butyl phthalate	100	88.67		ug/L		89	50 - 133
Di-n-octyl phthalate	100	75.58		ug/L		76	34 - 150

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 310-435895/2-A
Matrix: Water
Analysis Batch: 436520

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 435895

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Diphenylamine			85.0	66.64		ug/L		78	48 - 122		
Fluoranthene			100	88.22		ug/L		88	47 - 128		
Fluorene			100	79.26		ug/L		79	45 - 119		
Hexachlorobenzene			100	86.39		ug/L		86	48 - 119		
Hexachlorobutadiene			100	48.61		ug/L		49	32 - 110		
Hexachlorocyclopentadiene			100	36.36		ug/L		36	10 - 110		
Hexachloroethane			100	41.08		ug/L		41	31 - 110		
Indeno[1,2,3-cd]pyrene			100	70.98		ug/L		71	37 - 150		
Isophorone			100	78.75		ug/L		79	50 - 125		
Nitrobenzene			100	65.30		ug/L		65	47 - 116		
N-Nitrosodimethylamine			100	63.96		ug/L		64	37 - 110		
N-Nitrosodi-n-propylamine			100	77.76		ug/L		78	45 - 130		
N-Nitrosodiphenylamine			100	79.36		ug/L		79	49 - 121		
Pentachlorophenol			200	155.3		ug/L		78	26 - 133		
Phenanthrene			100	89.83		ug/L		90	51 - 117		
Phenol			100	46.69		ug/L		47	29 - 110		
Pyrene			100	92.59		ug/L		93	48 - 127		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorophenol (Surr)	*55*		*25 - 110*
Phenol-d5 (Surr)	*46*		*21 - 110*
Nitrobenzene-d5 (Surr)	*72*		*45 - 129*
2-Fluorobiphenyl (Surr)	*74*		*39 - 118*
2,4,6-Tribromophenol (Surr)	*90*		*27 - 136*
Terphenyl-d14 (Surr)	*98*		*12 - 144*

Lab Sample ID: LCSD 310-435895/3-A
Matrix: Water
Analysis Batch: 436520

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 435895

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2,4,5-Tetrachlorobenzene			100	58.38		ug/L		58	36 - 110	1	35
1,3-Dinitrobenzene			100	59.17		ug/L		59	45 - 138	22	35
2,3,4,6-Tetrachlorophenol			100	64.62		ug/L		65	33 - 134	21	35
2,4,5-Trichlorophenol			100	68.24		ug/L		68	35 - 133	19	35
2,4,6-Trichlorophenol			100	61.90		ug/L		62	28 - 139	22	35
2,4-Dichlorophenol			100	72.49		ug/L		72	41 - 124	23	35
2,4-Dimethylphenol			100	54.71		ug/L		55	31 - 142	28	35
2,4-Dinitrophenol			200	102.7		ug/L		51	10 - 138	20	35
2,4-Dinitrotoluene			100	68.13		ug/L		68	47 - 137	26	35
2,6-Dichlorophenol			100	62.32		ug/L		62	30 - 130	26	35
2,6-Dinitrotoluene			100	66.48		ug/L		66	51 - 130	26	35
2-Chloronaphthalene			100	48.34		ug/L		48	37 - 110	7	35
2-Chlorophenol			100	63.05		ug/L		63	44 - 117	25	35
2-Methylnaphthalene			100	50.19		ug/L		50	33 - 110	11	35
2-Methylphenol			100	59.79		ug/L		60	47 - 118	23	35
2-Nitroaniline			100	58.05		ug/L		58	50 - 135	21	35
2-Nitrophenol			100	65.14		ug/L		65	41 - 129	27	35

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 310-435895/3-A
Client Sample ID: Lab Control Sample Dup
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 436520
Prep Batch: 435895

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
3-Nitroaniline	100	72.65		ug/L		73	42 - 139	14	35
4,6-Dinitro-2-methylphenol	200	136.3		ug/L		68	22 - 143	24	35
4-Bromophenyl phenyl ether	100	68.07		ug/L		68	45 - 119	25	35
4-Chloro-3-methylphenol	100	72.23		ug/L		72	49 - 130	23	35
4-Chloroaniline	100	63.03		ug/L		63	21 - 139	15	35
4-Chlorophenyl phenyl ether	100	63.82		ug/L		64	44 - 116	18	35
Methylphenol, 3 & 4	100	61.48		ug/L		61	46 - 117	17	35
4-Nitroaniline	100	56.22		ug/L		56	31 - 145	25	35
4-Nitrophenol	200	107.4		ug/L		54	18 - 110	15	35
Acenaphthene	100	61.04		ug/L		61	43 - 110	16	35
Acenaphthylene	100	58.47		ug/L		58	40 - 110	14	35
Acetophenone	100	58.04		ug/L		58	48 - 119	29	35
Anthracene	100	69.82		ug/L		70	51 - 120	26	35
Benzo[a]anthracene	100	71.83		ug/L		72	51 - 123	17	35
Benzo[a]pyrene	100	71.33		ug/L		71	48 - 125	15	35
Benzo[b]fluoranthene	100	69.33		ug/L		69	49 - 129	18	35
Benzo[g,h,i]perylene	100	62.29		ug/L		62	43 - 139	16	35
Benzo[k]fluoranthene	100	80.91		ug/L		81	47 - 130	8	35
Benzyl alcohol	100	60.71		ug/L		61	39 - 128	12	35
Bis(2-chloroethoxy)methane	100	50.74		ug/L		51	48 - 121	31	35
Bis(2-chloroethyl)ether	100	48.92		ug/L		49	43 - 123	29	35
bis (2-chloroisopropyl) ether	100	54.61		ug/L		55	34 - 123	29	35
Bis(2-ethylhexyl) phthalate	100	77.82		ug/L		78	43 - 143	17	35
Butyl benzyl phthalate	100	68.59		ug/L		69	46 - 135	20	35
Chrysene	100	73.39		ug/L		73	51 - 125	17	35
Dibenzo(a,h)anthracene	100	58.72		ug/L		59	38 - 149	17	35
Dibenzofuran	100	60.40		ug/L		60	45 - 112	20	35
Diethyl phthalate	100	65.20		ug/L		65	43 - 135	29	35
Dimethyl phthalate	100	63.42		ug/L		63	43 - 129	25	35
Di-n-butyl phthalate	100	70.54		ug/L		71	50 - 133	23	35
Di-n-octyl phthalate	100	64.63		ug/L		65	34 - 150	16	35
Diphenylamine	85.0	51.53		ug/L		61	48 - 122	26	35
Fluoranthene	100	71.51		ug/L		72	47 - 128	21	35
Fluorene	100	63.27		ug/L		63	45 - 119	22	35
Hexachlorobenzene	100	74.20		ug/L		74	48 - 119	15	35
Hexachlorobutadiene	100	59.00		ug/L		59	32 - 110	19	35
Hexachlorocyclopentadiene	100	38.71		ug/L		39	10 - 110	6	35
Hexachloroethane	100	43.72		ug/L		44	31 - 110	6	35
Indeno[1,2,3-cd]pyrene	100	57.43		ug/L		57	37 - 150	21	35
Isophorone	100	60.39		ug/L		60	50 - 125	26	35
Nitrobenzene	100	49.08		ug/L		49	47 - 116	28	35
N-Nitrosodimethylamine	100	55.27		ug/L		55	37 - 110	15	35
N-Nitrosodi-n-propylamine	100	55.86		ug/L		56	45 - 130	33	35
N-Nitrosodiphenylamine	100	59.51		ug/L		60	49 - 121	29	35
Pentachlorophenol	200	117.9		ug/L		59	26 - 133	27	35
Phenanthrene	100	70.67		ug/L		71	51 - 117	24	35
Phenol	100	37.78		ug/L		38	29 - 110	21	35
Pyrene	100	76.31		ug/L		76	48 - 127	19	35

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 310-435895/3-A
Matrix: Water
Analysis Batch: 436520

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 435895

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
2-Fluorophenol (Surr)	48		25 - 110
Phenol-d5 (Surr)	42		21 - 110
Nitrobenzene-d5 (Surr)	59		45 - 129
2-Fluorobiphenyl (Surr)	58		39 - 118
2,4,6-Tribromophenol (Surr)	74		27 - 136
Terphenyl-d14 (Surr)	94		12 - 144

Method: 8015C - Nonhalogenated Organic using GC/FID (Direct Aqueous Injection)

Lab Sample ID: MB 310-436077/28
Matrix: Water
Analysis Batch: 436077

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetonitrile	<2600		10000	2600	ug/L			10/14/24 16:13	1
Isobutanol	<2400		10000	2400	ug/L			10/14/24 16:13	1

Lab Sample ID: LCS 310-436077/29
Matrix: Water
Analysis Batch: 436077

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Acetonitrile	113000	120900		ug/L		107	67 - 132
Isobutanol	104000	114500		ug/L		110	80 - 121

Method: 8081B - Organochlorine Pesticides (GC)

Lab Sample ID: MB 310-435953/1-A
Matrix: Water
Analysis Batch: 436114

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 435953

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	<0.0233		0.0931	0.0233	ug/L		10/11/24 10:56	10/14/24 14:01	1
4,4'-DDE	<0.0279		0.0931	0.0279	ug/L		10/11/24 10:56	10/14/24 14:01	1
4,4'-DDT	<0.0186		0.0931	0.0186	ug/L		10/11/24 10:56	10/14/24 14:01	1
Aldrin	<0.0205		0.0931	0.0205	ug/L		10/11/24 10:56	10/14/24 14:01	1
alpha-BHC	<0.00931		0.0931	0.00931	ug/L		10/11/24 10:56	10/14/24 14:01	1
beta-BHC	<0.0391		0.0931	0.0391	ug/L		10/11/24 10:56	10/14/24 14:01	1
Chlordane (technical)	<0.363		1.86	0.363	ug/L		10/11/24 10:56	10/14/24 14:01	1
delta-BHC	<0.0298		0.0931	0.0298	ug/L		10/11/24 10:56	10/14/24 14:01	1
Dieldrin	<0.0195		0.0931	0.0195	ug/L		10/11/24 10:56	10/14/24 14:01	1
Endosulfan I	<0.0261		0.0931	0.0261	ug/L		10/11/24 10:56	10/14/24 14:01	1
Endosulfan II	<0.0242		0.0931	0.0242	ug/L		10/11/24 10:56	10/14/24 14:01	1
Endosulfan sulfate	<0.0168		0.0931	0.0168	ug/L		10/11/24 10:56	10/14/24 14:01	1
Endrin	<0.0261		0.0931	0.0261	ug/L		10/11/24 10:56	10/14/24 14:01	1
Endrin aldehyde	<0.0251		0.0931	0.0251	ug/L		10/11/24 10:56	10/14/24 14:01	1
gamma-BHC (Lindane)	<0.00931		0.0931	0.00931	ug/L		10/11/24 10:56	10/14/24 14:01	1
Heptachlor	<0.0214		0.0931	0.0214	ug/L		10/11/24 10:56	10/14/24 14:01	1
Heptachlor epoxide	<0.0298		0.0931	0.0298	ug/L		10/11/24 10:56	10/14/24 14:01	1

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: MB 310-435953/1-A
Matrix: Water
Analysis Batch: 436114

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 435953

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methoxychlor	<0.0298		0.0931	0.0298	ug/L		10/11/24 10:56	10/14/24 14:01	1
Toxaphene	<0.931		1.86	0.931	ug/L		10/11/24 10:56	10/14/24 14:01	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*64*		*10 - 136*	*10/11/24 10:56*	*10/14/24 14:01*	*1*
Tetrachloro-m-xylene (Surr)	*124*		*10 - 130*	*10/11/24 10:56*	*10/14/24 14:01*	*1*

Lab Sample ID: LCS 310-435953/16-A
Matrix: Water
Analysis Batch: 436114

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 435953

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
4,4'-DDD	2.56	1.666		ug/L		65	36 - 149
4,4'-DDE	2.56	1.298		ug/L		51	34 - 130
4,4'-DDT	2.56	1.405		ug/L		55	23 - 150
Aldrin	2.56	1.187		ug/L		46	13 - 120
alpha-BHC	2.56	2.225		ug/L		87	36 - 127
beta-BHC	2.56	2.147		ug/L		84	37 - 136
delta-BHC	2.56	2.228		ug/L		87	33 - 134
Dieldrin	2.56	2.025		ug/L		79	39 - 130
Endosulfan I	2.56	1.956		ug/L		76	10 - 120
Endosulfan II	2.56	2.148		ug/L		84	14 - 120
Endosulfan sulfate	2.56	2.488		ug/L		97	36 - 147
Endrin	2.56	2.244		ug/L		88	39 - 140
Endrin aldehyde	2.56	1.780		ug/L		69	32 - 137
gamma-BHC (Lindane)	2.56	2.302		ug/L		90	36 - 132
Heptachlor	2.56	1.329		ug/L		52	27 - 120
Heptachlor epoxide	2.56	2.140		ug/L		83	38 - 133
Methoxychlor	2.56	2.128		ug/L		83	10 - 150

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl (Surr)	*16*		*10 - 136*
Tetrachloro-m-xylene (Surr)	*50*		*10 - 130*

Lab Sample ID: 310-292482-2 MS
Matrix: Water
Analysis Batch: 436114

Client Sample ID: OW-227B
Prep Type: Total/NA
Prep Batch: 435953

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
4,4'-DDD	<0.0220		2.64	2.353		ug/L		89	36 - 149
4,4'-DDE	<0.0264		2.64	2.253		ug/L		85	34 - 130
4,4'-DDT	<0.0176		2.64	2.441		ug/L		93	23 - 150
Aldrin	<0.0193		2.64	1.930		ug/L		73	13 - 120
alpha-BHC	<0.00879		2.64	2.398		ug/L		91	36 - 127
beta-BHC	<0.0369		2.64	2.289		ug/L		87	37 - 136
delta-BHC	<0.0281		2.64	2.376		ug/L		90	33 - 134
Dieldrin	<0.0185		2.64	2.492		ug/L		94	39 - 130
Endosulfan I	<0.0246		2.64	2.356		ug/L		89	10 - 120

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: 310-292482-2 MS
Matrix: Water
Analysis Batch: 436114

Client Sample ID: OW-227B
Prep Type: Total/NA
Prep Batch: 435953

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Endosulfan II	<0.0229		2.64	2.405		ug/L		91	14 - 120
Endosulfan sulfate	<0.0158		2.64	2.721		ug/L		103	36 - 147
Endrin	<0.0246		2.64	2.714		ug/L		103	39 - 140
Endrin aldehyde	<0.0237		2.64	2.293		ug/L		87	32 - 137
gamma-BHC (Lindane)	<0.00879		2.64	2.453		ug/L		93	36 - 132
Heptachlor	<0.0202		2.64	1.944		ug/L		74	27 - 120
Heptachlor epoxide	<0.0281		2.64	2.522		ug/L		96	38 - 133
Methoxychlor	<0.0281		2.64	2.611		ug/L		99	10 - 150

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
DCB Decachlorobiphenyl (Surr)	*44*		*10 - 136*
Tetrachloro-m-xylene (Surr)	*78*		*10 - 130*

Lab Sample ID: 310-292482-2 MSD
Matrix: Water
Analysis Batch: 436114

Client Sample ID: OW-227B
Prep Type: Total/NA
Prep Batch: 435953

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
4,4'-DDD	<0.0220		2.60	2.518		ug/L		97	36 - 149	7	35
4,4'-DDE	<0.0264		2.60	2.321		ug/L		89	34 - 130	3	35
4,4'-DDT	<0.0176		2.60	2.410		ug/L		93	23 - 150	1	35
Aldrin	<0.0193		2.60	1.899		ug/L		73	13 - 120	2	35
alpha-BHC	<0.00879		2.60	2.832		ug/L		109	36 - 127	17	35
beta-BHC	<0.0369		2.60	2.676		ug/L		103	37 - 136	16	35
delta-BHC	<0.0281		2.60	2.782		ug/L		107	33 - 134	16	35
Dieldrin	<0.0185		2.60	2.721		ug/L		104	39 - 130	9	35
Endosulfan I	<0.0246		2.60	2.610		ug/L		100	10 - 120	10	35
Endosulfan II	<0.0229		2.60	2.799		ug/L		107	14 - 120	15	35
Endosulfan sulfate	<0.0158		2.60	3.154		ug/L		121	36 - 147	15	35
Endrin	<0.0246		2.60	2.992		ug/L		115	39 - 140	10	35
Endrin aldehyde	<0.0237		2.60	2.655		ug/L		102	32 - 137	15	35
gamma-BHC (Lindane)	<0.00879		2.60	2.888		ug/L		111	36 - 132	16	35
Heptachlor	<0.0202		2.60	1.971		ug/L		76	27 - 120	1	35
Heptachlor epoxide	<0.0281		2.60	2.815		ug/L		108	38 - 133	11	35
Methoxychlor	<0.0281		2.60	2.870		ug/L		110	10 - 150	9	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
DCB Decachlorobiphenyl (Surr)	*20*		*10 - 136*
Tetrachloro-m-xylene (Surr)	*45*		*10 - 130*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 310-435953/1-A
Matrix: Water
Analysis Batch: 436116

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 435953

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.763		1.86	0.763	ug/L		10/11/24 10:56	10/14/24 14:01	1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Lab Sample ID: MB 310-435953/1-A
Matrix: Water
Analysis Batch: 436116

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 435953

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1221	<0.763		1.86	0.763	ug/L		10/11/24 10:56	10/14/24 14:01	1
PCB-1232	<0.763		1.86	0.763	ug/L		10/11/24 10:56	10/14/24 14:01	1
PCB-1242	<0.763		1.86	0.763	ug/L		10/11/24 10:56	10/14/24 14:01	1
PCB-1248	<0.642		1.86	0.642	ug/L		10/11/24 10:56	10/14/24 14:01	1
PCB-1254	<0.642		1.86	0.642	ug/L		10/11/24 10:56	10/14/24 14:01	1
PCB-1260	<0.642		1.86	0.642	ug/L		10/11/24 10:56	10/14/24 14:01	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*64*		*10 - 136*	*10/11/24 10:56*	*10/14/24 14:01*	*1*
Tetrachloro-m-xylene (Surr)	*124*		*10 - 130*	*10/11/24 10:56*	*10/14/24 14:01*	*1*

Lab Sample ID: LCSD 310-435953/17-A
Matrix: Water
Analysis Batch: 436111

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 435953

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
PCB-1016			26.5	24.31		ug/L					
PCB-1260			26.5	19.54		ug/L					

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
DCB Decachlorobiphenyl (Surr)			
Tetrachloro-m-xylene (Surr)			

Lab Sample ID: 310-292482-1 MS
Matrix: Water
Analysis Batch: 436111

Client Sample ID: OW-226B
Prep Type: Total/NA
Prep Batch: 435953

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
PCB-1016	<0.738		25.8	18.11		ug/L					
PCB-1260	<0.621		25.8	16.47		ug/L					

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
DCB Decachlorobiphenyl (Surr)	*47*		*10 - 136*
Tetrachloro-m-xylene (Surr)	*72*		*10 - 130*

Lab Sample ID: 310-292482-1 MSD
Matrix: Water
Analysis Batch: 436111

Client Sample ID: OW-226B
Prep Type: Total/NA
Prep Batch: 435953

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
PCB-1016	<0.738		25.4	15.43		ug/L				16	35
PCB-1260	<0.621		25.4	12.54		ug/L				27	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
DCB Decachlorobiphenyl (Surr)	*28*		*10 - 136*
Tetrachloro-m-xylene (Surr)	*47*		*10 - 130*

Method: 8151A - Herbicides (GC)

Lab Sample ID: MB 410-563718/1-A
Matrix: Water
Analysis Batch: 564218

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 563718

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	<0.250		0.600	0.250	ug/L		10/16/24 07:51	10/17/24 14:00	1
Silvex (2,4,5-TP)	<0.0220		0.0500	0.0220	ug/L		10/16/24 07:51	10/17/24 14:00	1
2,4,5-T	<0.0650		0.150	0.0650	ug/L		10/16/24 07:51	10/17/24 14:00	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*77*		*34 - 142*	*10/16/24 07:51*	*10/17/24 14:00*	*1*

Lab Sample ID: LCS 410-563718/2-A
Matrix: Water
Analysis Batch: 564218

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 563718

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,4-D	2.50	2.242		ug/L		90	53 - 159
Silvex (2,4,5-TP)	0.250	0.2546		ug/L		102	62 - 170
2,4,5-T	0.250	0.2590		ug/L		104	57 - 171

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCAA	*74*		*34 - 142*

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-436015/1-A
Matrix: Water
Analysis Batch: 436382

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 436015

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		10/14/24 10:00	10/15/24 17:01	1
Arsenic	<0.530		2.00	0.530	ug/L		10/14/24 10:00	10/15/24 17:01	1
Barium	<0.660		2.00	0.660	ug/L		10/14/24 10:00	10/15/24 17:01	1
Beryllium	<0.330		1.00	0.330	ug/L		10/14/24 10:00	10/15/24 17:01	1
Cadmium	<0.100		0.200	0.100	ug/L		10/14/24 10:00	10/15/24 17:01	1
Chromium	<1.20		5.00	1.20	ug/L		10/14/24 10:00	10/15/24 17:01	1
Cobalt	<0.170		0.500	0.170	ug/L		10/14/24 10:00	10/15/24 17:01	1
Copper	<1.80		5.00	1.80	ug/L		10/14/24 10:00	10/15/24 17:01	1
Lead	<0.260		0.500	0.260	ug/L		10/14/24 10:00	10/15/24 17:01	1
Nickel	<2.10		5.00	2.10	ug/L		10/14/24 10:00	10/15/24 17:01	1
Selenium	<1.40		5.00	1.40	ug/L		10/14/24 10:00	10/15/24 17:01	1
Silver	<0.500		1.00	0.500	ug/L		10/14/24 10:00	10/15/24 17:01	1
Vanadium	<1.10		5.00	1.10	ug/L		10/14/24 10:00	10/15/24 17:01	1
Zinc	<9.70		20.0	9.70	ug/L		10/14/24 10:00	10/15/24 17:01	1
Tin	<2.30		5.00	2.30	ug/L		10/14/24 10:00	10/15/24 17:01	1

Lab Sample ID: MB 310-436015/1-A
Matrix: Water
Analysis Batch: 437043

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 436015

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Thallium	<0.570		1.00	0.570	ug/L		10/14/24 10:00	10/21/24 15:25	1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 310-436015/2-A
Matrix: Water
Analysis Batch: 436382

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 436015

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	200	232.2		ug/L		116	80 - 120
Arsenic	200	223.1		ug/L		112	80 - 120
Barium	100	107.6		ug/L		108	80 - 120
Beryllium	100	98.79		ug/L		99	80 - 120
Cadmium	100	106.5		ug/L		107	80 - 120
Chromium	100	108.8		ug/L		109	80 - 120
Cobalt	100	101.3		ug/L		101	80 - 120
Copper	200	210.2		ug/L		105	80 - 120
Lead	200	212.3		ug/L		106	80 - 120
Nickel	200	201.6		ug/L		101	80 - 120
Selenium	400	419.8		ug/L		105	80 - 120
Silver	100	112.7		ug/L		113	80 - 120
Vanadium	100	106.5		ug/L		106	80 - 120
Zinc	200	197.4		ug/L		99	80 - 120
Tin	200	208.1		ug/L		104	80 - 120

Lab Sample ID: LCS 310-436015/2-A
Matrix: Water
Analysis Batch: 437043

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 436015

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Thallium	100	88.79		ug/L		89	80 - 120

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 310-436573/1-A
Matrix: Water
Analysis Batch: 436829

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 436573

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.110		0.200	0.110	ug/L		10/17/24 15:15	10/18/24 15:32	1

Lab Sample ID: LCS 310-436573/2-A
Matrix: Water
Analysis Batch: 436829

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 436573

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	1.67	1.363		ug/L		82	80 - 120

Method: 9012B - Cyanide, Total andor Amenable

Lab Sample ID: MB 310-436395/1-A
Matrix: Water
Analysis Batch: 436505

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 436395

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	<3.50		10.0	3.50	ug/L		10/16/24 08:55	10/16/24 17:26	1

Method: 9012B - Cyanide, Total andor Amenable (Continued)

Lab Sample ID: LCS 310-436395/2-A
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 436505
Prep Batch: 436395

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Cyanide, Total			200	202.4		ug/L		101	90 - 110		

Lab Sample ID: 310-292482-1 MS
Client Sample ID: OW-226B
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 436505
Prep Batch: 436395

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Cyanide, Total	3.99	J	200	213.0		ug/L		105	60 - 130		

Lab Sample ID: 310-292482-1 MSD
Client Sample ID: OW-226B
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 436505
Prep Batch: 436395

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cyanide, Total	3.99	J	200	212.5		ug/L		104	60 - 130	0	35

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: MB 310-436008/1
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 436008

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<3.70		5.00	3.70	mg/L			10/11/24 14:06	1

Lab Sample ID: LCS 310-436008/2
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 436008

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Suspended Solids			100	101.0		mg/L		101	81 - 116		

QC Association Summary

Client: AECOM
Job ID: 310-292482-1
Project/Site: Black Hawk County Landfill (IDNR)

GC/MS VOA

Analysis Batch: 436141

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292482-3	Trip Blank	Total/NA	Water	8260D	
MB 310-436141/5	Method Blank	Total/NA	Water	8260D	
LCS 310-436141/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-436141/7	Lab Control Sample	Total/NA	Water	8260D	

Analysis Batch: 436144

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292482-1	OW-226B	Total/NA	Water	8260D	
310-292482-2	OW-227B	Total/NA	Water	8260D	
MB 310-436144/5	Method Blank	Total/NA	Water	8260D	
LCS 310-436144/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-436144/7	Lab Control Sample	Total/NA	Water	8260D	

GC/MS Semi VOA

Prep Batch: 435895

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292482-1	OW-226B	Total/NA	Water	3510C	
310-292482-2	OW-227B	Total/NA	Water	3510C	
MB 310-435895/1-A	Method Blank	Total/NA	Water	3510C	
LCS 310-435895/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 310-435895/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 436520

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292482-1	OW-226B	Total/NA	Water	8270E	435895
310-292482-2	OW-227B	Total/NA	Water	8270E	435895
MB 310-435895/1-A	Method Blank	Total/NA	Water	8270E	435895
LCS 310-435895/2-A	Lab Control Sample	Total/NA	Water	8270E	435895
LCSD 310-435895/3-A	Lab Control Sample Dup	Total/NA	Water	8270E	435895

GC Semi VOA

Prep Batch: 435953

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292482-1	OW-226B	Total/NA	Water	3511	
310-292482-2	OW-227B	Total/NA	Water	3511	
MB 310-435953/1-A	Method Blank	Total/NA	Water	3511	
LCS 310-435953/16-A	Lab Control Sample	Total/NA	Water	3511	
LCSD 310-435953/17-A	Lab Control Sample Dup	Total/NA	Water	3511	
310-292482-1 MS	OW-226B	Total/NA	Water	3511	
310-292482-1 MSD	OW-226B	Total/NA	Water	3511	
310-292482-2 MS	OW-227B	Total/NA	Water	3511	
310-292482-2 MSD	OW-227B	Total/NA	Water	3511	

Analysis Batch: 436077

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292482-1	OW-226B	Total/NA	Water	8015C	
310-292482-2	OW-227B	Total/NA	Water	8015C	
MB 310-436077/28	Method Blank	Total/NA	Water	8015C	
LCS 310-436077/29	Lab Control Sample	Total/NA	Water	8015C	

GC Semi VOA

Analysis Batch: 436111

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 310-435953/17-A	Lab Control Sample Dup	Total/NA	Water	8082A	435953
310-292482-1 MS	OW-226B	Total/NA	Water	8082A	435953
310-292482-1 MSD	OW-226B	Total/NA	Water	8082A	435953

Analysis Batch: 436114

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292482-1	OW-226B	Total/NA	Water	8081B	435953
310-292482-2	OW-227B	Total/NA	Water	8081B	435953
MB 310-435953/1-A	Method Blank	Total/NA	Water	8081B	435953
LCS 310-435953/16-A	Lab Control Sample	Total/NA	Water	8081B	435953
310-292482-2 MS	OW-227B	Total/NA	Water	8081B	435953
310-292482-2 MSD	OW-227B	Total/NA	Water	8081B	435953

Analysis Batch: 436116

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292482-1	OW-226B	Total/NA	Water	8082A	435953
310-292482-2	OW-227B	Total/NA	Water	8082A	435953
MB 310-435953/1-A	Method Blank	Total/NA	Water	8082A	435953

Prep Batch: 563718

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292482-1	OW-226B	Total/NA	Water	8151A	
310-292482-2	OW-227B	Total/NA	Water	8151A	
MB 410-563718/1-A	Method Blank	Total/NA	Water	8151A	
LCS 410-563718/2-A	Lab Control Sample	Total/NA	Water	8151A	

Analysis Batch: 564218

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292482-1	OW-226B	Total/NA	Water	8151A	563718
310-292482-2	OW-227B	Total/NA	Water	8151A	563718
MB 410-563718/1-A	Method Blank	Total/NA	Water	8151A	563718
LCS 410-563718/2-A	Lab Control Sample	Total/NA	Water	8151A	563718

Metals

Prep Batch: 436015

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292482-1	OW-226B	Total/NA	Water	3005A	
310-292482-2	OW-227B	Total/NA	Water	3005A	
MB 310-436015/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-436015/2-A	Lab Control Sample	Total/NA	Water	3005A	

Analysis Batch: 436382

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292482-1	OW-226B	Total/NA	Water	6020B	436015
310-292482-2	OW-227B	Total/NA	Water	6020B	436015
MB 310-436015/1-A	Method Blank	Total/NA	Water	6020B	436015
LCS 310-436015/2-A	Lab Control Sample	Total/NA	Water	6020B	436015

Metals

Prep Batch: 436573

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292482-1	OW-226B	Total/NA	Water	7470A	
310-292482-2	OW-227B	Total/NA	Water	7470A	
MB 310-436573/1-A	Method Blank	Total/NA	Water	7470A	
LCS 310-436573/2-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 436829

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292482-1	OW-226B	Total/NA	Water	7470A	436573
310-292482-2	OW-227B	Total/NA	Water	7470A	436573
MB 310-436573/1-A	Method Blank	Total/NA	Water	7470A	436573
LCS 310-436573/2-A	Lab Control Sample	Total/NA	Water	7470A	436573

Analysis Batch: 437043

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292482-2	OW-227B	Total/NA	Water	6020B	436015
MB 310-436015/1-A	Method Blank	Total/NA	Water	6020B	436015
LCS 310-436015/2-A	Lab Control Sample	Total/NA	Water	6020B	436015

Analysis Batch: 437173

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292482-1	OW-226B	Total/NA	Water	6020B	436015
310-292482-2	OW-227B	Total/NA	Water	6020B	436015

General Chemistry

Analysis Batch: 436008

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292482-1	OW-226B	Total/NA	Water	I-3765-85	
310-292482-2	OW-227B	Total/NA	Water	I-3765-85	
MB 310-436008/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-436008/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Prep Batch: 436395

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292482-1	OW-226B	Total/NA	Water	9012B	
310-292482-2	OW-227B	Total/NA	Water	9012B	
MB 310-436395/1-A	Method Blank	Total/NA	Water	9012B	
LCS 310-436395/2-A	Lab Control Sample	Total/NA	Water	9012B	
310-292482-1 MS	OW-226B	Total/NA	Water	9012B	
310-292482-1 MSD	OW-226B	Total/NA	Water	9012B	

Analysis Batch: 436505

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292482-1	OW-226B	Total/NA	Water	9012B	436395
310-292482-2	OW-227B	Total/NA	Water	9012B	436395
MB 310-436395/1-A	Method Blank	Total/NA	Water	9012B	436395
LCS 310-436395/2-A	Lab Control Sample	Total/NA	Water	9012B	436395
310-292482-1 MS	OW-226B	Total/NA	Water	9012B	436395
310-292482-1 MSD	OW-226B	Total/NA	Water	9012B	436395

QC Association Summary

Client: AECOM
Job ID: 310-292482-1
Project/Site: Black Hawk County Landfill (IDNR)

Field Service / Mobile Lab

Analysis Batch: 436163

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292482-1	OW-226B	Total/NA	Water	Field Sampling	
310-292482-2	OW-227B	Total/NA	Water	Field Sampling	

Lab Chronicle

Client: AECOM
Job ID: 310-292482-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-226B
Lab Sample ID: 310-292482-1

Date Collected: 10/09/24 11:00
Matrix: Water
Date Received: 10/11/24 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	436144	FE5V	EET CF	10/15/24 13:06
Total/NA	Prep	3510C			435895	AYK7	EET CF	10/11/24 06:28
Total/NA	Analysis	8270E		1	436520	L0FS	EET CF	10/17/24 19:40
Total/NA	Analysis	8015C		1	436077	V7YZ	EET CF	10/14/24 20:34
Total/NA	Prep	3511			435953	AYK7	EET CF	10/11/24 10:56
Total/NA	Analysis	8081B		1	436114	BW2O	EET CF	10/14/24 19:52
Total/NA	Prep	3511			435953	AYK7	EET CF	10/11/24 10:56
Total/NA	Analysis	8082A		1	436116	BW2O	EET CF	10/14/24 19:52
Total/NA	Prep	8151A			563718	XU9L	ELLE	10/16/24 07:51
Total/NA	Analysis	8151A		5	564218	UAMZ	ELLE	10/17/24 19:57
Total/NA	Prep	3005A			436015	F5MW	EET CF	10/14/24 10:00
Total/NA	Analysis	6020B		1	436382	NFT2	EET CF	10/15/24 18:06
Total/NA	Prep	3005A			436015	F5MW	EET CF	10/14/24 10:00
Total/NA	Analysis	6020B		1	437173	A6US	EET CF	10/22/24 14:26
Total/NA	Prep	7470A			436573	QTZ5	EET CF	10/17/24 15:15
Total/NA	Analysis	7470A		1	436829	QTZ5	EET CF	10/18/24 15:36
Total/NA	Prep	9012B			436395	HE7K	EET CF	10/16/24 08:55
Total/NA	Analysis	9012B		1	436505	ZJX4	EET CF	10/16/24 17:27
Total/NA	Analysis	I-3765-85		1	436008	HE7K	EET CF	10/11/24 14:06
Total/NA	Analysis	Field Sampling		1	436163	BJ0R	EET CF	10/09/24 11:00

Client Sample ID: OW-227B
Lab Sample ID: 310-292482-2

Date Collected: 10/09/24 14:00
Matrix: Water
Date Received: 10/11/24 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	436144	FE5V	EET CF	10/15/24 13:29
Total/NA	Prep	3510C			435895	AYK7	EET CF	10/11/24 06:28
Total/NA	Analysis	8270E		1	436520	L0FS	EET CF	10/17/24 19:14
Total/NA	Analysis	8015C		1	436077	V7YZ	EET CF	10/14/24 20:54
Total/NA	Prep	3511			435953	AYK7	EET CF	10/11/24 10:56
Total/NA	Analysis	8081B		1	436114	BW2O	EET CF	10/14/24 19:05
Total/NA	Prep	3511			435953	AYK7	EET CF	10/11/24 10:56
Total/NA	Analysis	8082A		1	436116	BW2O	EET CF	10/14/24 19:05
Total/NA	Prep	8151A			563718	XU9L	ELLE	10/16/24 07:51
Total/NA	Analysis	8151A		10	564218	UAMZ	ELLE	10/17/24 20:33
Total/NA	Prep	3005A			436015	F5MW	EET CF	10/14/24 10:00
Total/NA	Analysis	6020B		1	436382	NFT2	EET CF	10/15/24 18:17
Total/NA	Prep	3005A			436015	F5MW	EET CF	10/14/24 10:00
Total/NA	Analysis	6020B		1	437043	NFT2	EET CF	10/21/24 16:07
Total/NA	Prep	3005A			436015	F5MW	EET CF	10/14/24 10:00
Total/NA	Analysis	6020B		1	437173	A6US	EET CF	10/22/24 14:37
Total/NA	Prep	7470A			436573	QTZ5	EET CF	10/17/24 15:15
Total/NA	Analysis	7470A		1	436829	QTZ5	EET CF	10/18/24 15:38

Lab Chronicle

Client: AECOM
Job ID: 310-292482-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-227B
Lab Sample ID: 310-292482-2

Date Collected: 10/09/24 14:00
Matrix: Water
Date Received: 10/11/24 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	9012B			436395	HE7K	EET CF	10/16/24 08:55
Total/NA	Analysis	9012B		1	436505	ZJX4	EET CF	10/16/24 17:31
Total/NA	Analysis	I-3765-85		1	436008	HE7K	EET CF	10/11/24 14:06
Total/NA	Analysis	Field Sampling		1	436163	BJ0R	EET CF	10/09/24 14:00

Client Sample ID: Trip Blank
Lab Sample ID: 310-292482-3

Date Collected: 10/09/24 06:00
Matrix: Water
Date Received: 10/11/24 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	436141	FE5V	EET CF	10/15/24 00:13

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: AECOM
Job ID: 310-292482-1
Project/Site: Black Hawk County Landfill (IDNR)

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8260D		Water	1,2,4-Trichlorobenzene
8260D		Water	Allyl chloride
8260D		Water	Ethyl methacrylate
8260D		Water	m,p-Xylene
8260D		Water	o-Xylene
Field Sampling		Water	Field Turbidity

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Iowa	State	361	03-01-26

Method Summary

Client: AECOM
Job ID: 310-292482-1
Project/Site: Black Hawk County Landfill (IDNR)

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CF
8270E	Semivolatile Organic Compounds (GC/MS)	SW846	EET CF
8015C	Nonhalogenated Organic using GC/FID (Direct Aqueous Injection)	SW846	EET CF
8081B	Organochlorine Pesticides (GC)	SW846	EET CF
8082A	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	EET CF
8151A	Herbicides (GC)	SW846	ELLE
6020B	Metals (ICP/MS)	SW846	EET CF
7470A	Mercury (CVAA)	SW846	EET CF
9012B	Cyanide, Total andor Amenable	SW846	EET CF
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
Field Sampling	Field Sampling	EPA	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET CF
3511	Microextraction of Organic Compounds	SW846	EET CF
5030B	Purge and Trap	SW846	EET CF
7470A	Preparation, Mercury	SW846	EET CF
8151A	Extraction (Herbicides)	SW846	ELLE
9012B	Cyanide, Total and/or Amenable, Distillation	SW846	EET CF

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

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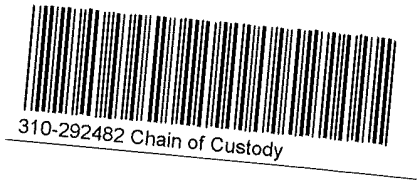
310-292482 Chain of Custody



Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: AECOM

City/State: CITY Waterloo | STATE IA | Project: BHC IDNA

Receipt Information

Date/Time Received: DATE 10/10/24 | TIME 1030 | Received By: TD

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ Lab Field Services ☑ Client Drop-off ☐ Other:

Condition of Cooler/Containers

Sample(s) received in Cooler? ☑ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☑ Yes ~~☑ No~~ *If yes:* Cooler # 1 of 2

Cooler Custody Seals Present? ☐ Yes ☑ No *If yes:* Cooler custody seals intact? ☐ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☑ No *If yes.* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☑ Yes ☐ No *If yes:* Which VOA samples are in cooler? ↓

2 2 TB ~~Set and~~ set of trip blanks in rack 1st

Temperature Record

Coolant: ☑ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other: ☐ NONE

Thermometer ID: 2 | Correction Factor (°C): 0 0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 2.6 | Corrected Temp (°C) 2.6

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C).		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g , bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE If yes, contact PM before proceeding If no, proceed with login

Additional Comments

Document CED-P-SAM-FRM45521
Revision 26
Date: 27 Jan 2022

Eurofins Cedar Falls

General temperature criteria is 0 to 6°C
Bacteria temperature criteria is 0 to 10°C

eurofins | Environment Testing America

Place COC scanning label here

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: AECOM

City/State: CITY Waterloo | STATE IA | Project: BHC IDNR

Receipt Information

Date/Time Received: DATE 10/10/24 | TIME 1030 | Received By: TD

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ Lab Field Services ☑ Client Drop-off ☐ Other:

Condition of Cooler/Containers

Sample(s) received in Cooler? ☑ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☑ Yes ~~☑ No~~ TD *If yes:* Cooler # 2 of 2

Cooler Custody Seals Present? ☐ Yes ☑ No *If yes:* Cooler custody seals intact? ☐ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☑ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? TD ~~☑ Yes~~ ☑ No *If yes:* Which VOA samples are in cooler? ↓

226B ~~1st set of trip blanks in each~~ TD

No Trip blanks in cooler!

Temperature Record

Coolant: ☑ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other: ☐ NONE

Thermometer ID: 2 | Correction Factor (°C): 0.0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 0.8 | Corrected Temp (°C): 0.8

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

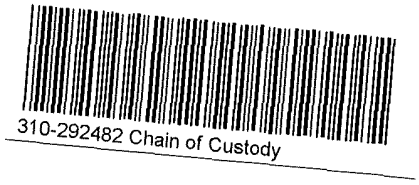
2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g , bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE: If yes, contact PM before proceeding If no, proceed with login

Additional Comments

eurofins | Environment Testing America

310-292482 Chain of Custody



Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: AFCOM

City/State: CITY Waterloo | STATE IA | Project: BHC IDNR

Receipt Information

Date/Time Received: DATE 10/10/24 | TIME 1030 | Received By: TD

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ Lab Field Services ☑ Client Drop-off ☐ Other: _____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☑ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☑ Yes ~~☑ No~~ *If yes:* Cooler # 1 of 2

Cooler Custody Seals Present? ☐ Yes ☑ No *If yes:* Cooler custody seals intact? ☐ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☑ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☑ Yes ☐ No *If yes:* Which VOA samples are in cooler? ↓

2 2 TB ~~Set and~~ set of Trip blanks in rack 1st

Temperature Record

Coolant: ☑ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other: _____ ☐ NONE

Thermometer ID: 2 | Correction Factor (°C): 0 0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 2.6 | Corrected Temp (°C): 2.6

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C).		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g , bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

eurofins | Environment Testing America

Place COC scanning label here

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: AECOM

City/State: CITY Waterloo | STATE IA | Project: BHC IDNR

Receipt Information

Date/Time Received: DATE 10/10/24 | TIME 1030 | Received By: TD

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ Lab Field Services ☑ Client Drop-off ☐ Other: _____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☑ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☑ Yes ~~☑ No~~ TD *If yes:* Cooler # 2 of 2

Cooler Custody Seals Present? ☐ Yes ☑ No *If yes:* Cooler custody seals intact? ☐ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☑ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? TD ~~☑ Yes~~ ☑ No *If yes:* Which VOA samples are in cooler? ↓

226B - ~~1st set of trip blanks in rack~~ TD

No Trip blanks in cooler 1

Temperature Record

Coolant: ☑ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other: _____ ☐ NONE

Thermometer ID: 2 | Correction Factor (°C): 0.0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 0.2 | Corrected Temp (°C): 0.8

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

Eurofins Cedar Falls
3019 Venture Way

Cedar Falls, IA 50613
phone 319 277.2401 fax 319.277 2425

Chain of Custody Record

eurofins Environment Testing America

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other IDNR

Eurofins Environment Testing America

Client Contact	**Project Manager: Chris Oelkers**	COC No
AECOM	Email Christopher Oelkers@aecom com	**Site Contact:** / **Date:** 10-10-24 / _____ of _____ COCs
501 Sycamore Street, Suite 222	**Tel/Fax:319-296-6878**	**Lab Contact:** / **Carrier:** / TALS Project #
Waterloo, IA 50703	**Analysis Turnaround Time** ☑ CALENDAR DAYS ☐ WORKING DAYS	Sampler
(319) 232-6531 Phone	TAT if different from Below _____	**For Lab Use Only:**
(xxx) xxx-xxxx FAX	☑ 2 weeks	Walk-in Client:
Project Name Black Hawk Co IDNR	☐ 1 week	Lab Sampling
Site Black Hawk County Landfill	☐ 2 days	Job / SDG No
P O #	☐ 1 day	

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Appendix I, TSS	Appendix II, TSS	2,4-D	4,4'-DDD	beta-BHC	delta BHC	Endosulfan I	Endosulfan sulfate	Endrin aldehyde	Silvex	Sulfide	Sample Specific Notes
OW-220B			G	GW		N		X		X							X		
OW-221B			G	GW		N		X											
OW-222B			G	GW		N		X											
OW-223B			G	GW		N		X											
OW-223B-FD			G	GW		N		X											
OW-224B			G	GW		N			X										
OW-225B			G	GW		N			X										
OW-226B	10-9-24	1100	G	GW	18	N			X										Turbidity - 37.92 NTU
OW-227B	10-9-24	1400	G	GW	18	N			X										Turbidity - 6.55 NTU
MW-319B			G	GW		N		X											
MW-320B			G	GW		N		X											
Equipment Blank-1			G	GW		N		X											
Trip Blank X 2	10-9-24	0600	G	W	6	N		X											

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No | Cooler Temp. (°C) Obs'd._____ Corr'd._____ Therm ID No._____

Relinquished by: Ben Porter	Company: Aecom	Date/Time: 10-10-24	Received by:	Company:	Date/Time: 10/10/24 1030
Relinquished by:	Company:	Date/Time	Received by:	Company:	Date/Time
Relinquished by:	Company:	Date/Time	Received in Laboratory by:	Company:	Date/Time

10/23/2024

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone: 319-277-2401 Fax: 319-277-2425

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Bindert, Zach T	Carrier Tracking No(s):	COC No: 310-77237.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Zach.Bindert@et.eurofinsus.com	State of Origin: Iowa	Page: Page 1 of 1
Company: Eurofins Lancaster Laboratories Environm		Accreditations Required (See note): State - Iowa; State Program - Iowa		Job #: 310-292482-1
Address: 2425 New Holland Pike, ,	Due Date Requested: 10/24/2024			
City: Lancaster	TAT Requested (days):			
State, Zip: PA, 17601				
Phone: 717-656-2300(Tel)	PO #:			
Email:	WO #:			
Project Name: Black Hawk County Landfill (IDNR)	Project #: 31017149			
Site: 310 - Black Hawk County (IDNR)	SSOW#:			

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8151A/8151A_AP Default List	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
OW-226B (310-292482-1)	10/9/24	11:00 Central	G	Water			X	2	
OW-227B (310-292482-2)	10/9/24	14:00 Central	G	Water			X	2	

Analysis Requested

Preservation Codes:
-

Other:

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing North Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing North Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing North Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing North Central, LLC.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	10/10/24 1605				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by: Debra A. Byrn	Date/Time: 10-11-24 09:50	Company ELLET

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: R: 2.8 C: 2.6

Ver: 05/06/2024

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-292482-1

Login Number: 292482

List Number: 1

Creator: Homolar, Dana J

List Source: Eurofins Cedar Falls

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-292482-1

Login Number: 292482
List Number: 2
Creator: Arroyo, Haley

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC
List Creation: 10/11/24 12:01 PM

Question	Answer	Comment
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature acceptable,where thermal pres is required(</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV:Container Temp acceptable,where thermal pres is required (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
Sample custody seals are intact.	N/A	
VOA sample vials do not have headspace >6mm in diameter (none, if from WV)?	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Chris Oelkers
AECOM
501 Sycamore Street
Suite #222
Waterloo, Iowa 50703

Generated 10/23/2024 9:43:27 PM

JOB DESCRIPTION

Black Hawk County Landfill (IDNR)
Fall 2024

JOB NUMBER

310-292651-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



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10/23/2024 9:43:27 PM

Authorized for release by
Zach Bindert, Senior Project Manager
Zach.Bindert@et.eurofinsus.com
(319)595-2016

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Job ID: 310-292651-1 — Eurofins Cedar Falls

Job Narrative
310-292651-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 10/11/2024 11:50 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 18.3°C.

GC/MS VOA
Method 8260D: The continuing calibration verification (CCV) associated with batch 310-436465 recovered outside control limits for Iodomethane (-51.4%D). The LCS associated with this CCV passes CCV criteria for the affected analytes; therefore, the data have been reported. The associated sample is impacted: (CCV 310-436465/3).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Field Service / Mobile Lab
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Sample Summary

Client: AECOM
Job ID: 310-292651-1
Project/Site: Black Hawk County Landfill (IDNR)

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-292651-1	GUW-2-1	Ground Water	10/11/24 10:00	10/11/24 11:50
310-292651-2	GUW3-1	Water	10/11/24 08:15	10/11/24 11:50
310-292651-3	GUX-1	Water	10/11/24 07:30	10/11/24 11:50

Detection Summary

Client: AECOM
Job ID: 310-292651-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: GUW-2-1 — Lab Sample ID: 310-292651-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	0.209	J	1.00	0.180	ug/L	1		8260D	Total/NA
Arsenic	12.9		2.00	0.530	ug/L	1		6020B	Total/NA
Barium	344		2.00	0.660	ug/L	1		6020B	Total/NA
Cobalt	2.03		0.500	0.170	ug/L	1		6020B	Total/NA
Total Suspended Solids	31.5		7.50	5.55	mg/L	1		I-3765-85	Total/NA
Field Turbidity	7.43				NTU	1		Field Sampling	Total/NA

Client Sample ID: GUW3-1 — Lab Sample ID: 310-292651-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	5.45	J	10.0	3.10	ug/L	1		8260D	Total/NA
Arsenic	2.04		2.00	0.530	ug/L	1		6020B	Total/NA
Barium	31.5		2.00	0.660	ug/L	1		6020B	Total/NA
Cobalt	2.05		0.500	0.170	ug/L	1		6020B	Total/NA
Copper	6.59		5.00	1.80	ug/L	1		6020B	Total/NA
Lead	0.342	J	0.500	0.260	ug/L	1		6020B	Total/NA
Nickel	7.72		5.00	2.10	ug/L	1		6020B	Total/NA
Zinc	17.0	J	20.0	9.70	ug/L	1		6020B	Total/NA
Total Suspended Solids	26.5		7.50	5.55	mg/L	1		I-3765-85	Total/NA
Field Turbidity	8.73				NTU	1		Field Sampling	Total/NA

Client Sample ID: GUX-1 — Lab Sample ID: 310-292651-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	0.398	J	1.00	0.180	ug/L	1		8260D	Total/NA
Barium	820		2.00	0.660	ug/L	1		6020B	Total/NA
Copper	4.45	J	5.00	1.80	ug/L	1		6020B	Total/NA
Lead	0.359	J	0.500	0.260	ug/L	1		6020B	Total/NA
Total Suspended Solids	28.5		7.50	5.55	mg/L	1		I-3765-85	Total/NA
Field Turbidity	4.57				NTU	1		Field Sampling	Total/NA

This Detection Summary does not include radiochemical test results.

Client: AECOM
Job ID: 310-292651-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: GUW-2-1
Lab Sample ID: 310-292651-1
Date Collected: 10/11/24 10:00
Matrix: Ground Water
Date Received: 10/11/24 11:50

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			10/17/24 10:37	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			10/17/24 10:37	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			10/17/24 10:37	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			10/17/24 10:37	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			10/17/24 10:37	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			10/17/24 10:37	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			10/17/24 10:37	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			10/17/24 10:37	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			10/17/24 10:37	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			10/17/24 10:37	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			10/17/24 10:37	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			10/17/24 10:37	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			10/17/24 10:37	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			10/17/24 10:37	1
2-Hexanone	<2.00		10.0	2.00	ug/L			10/17/24 10:37	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			10/17/24 10:37	1
Acetone	<3.10		10.0	3.10	ug/L			10/17/24 10:37	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			10/17/24 10:37	1
Benzene	<0.220		0.500	0.220	ug/L			10/17/24 10:37	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			10/17/24 10:37	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			10/17/24 10:37	1
Bromoform	<0.780		5.00	0.780	ug/L			10/17/24 10:37	1
Bromomethane	<1.10		4.00	1.10	ug/L			10/17/24 10:37	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			10/17/24 10:37	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			10/17/24 10:37	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			10/17/24 10:37	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			10/17/24 10:37	1
Chloroethane	<0.790		4.00	0.790	ug/L			10/17/24 10:37	1
Chloroform	<1.30		3.00	1.30	ug/L			10/17/24 10:37	1
Chloromethane	<0.610		3.00	0.610	ug/L			10/17/24 10:37	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			10/17/24 10:37	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			10/17/24 10:37	1
Dibromomethane	<0.330		1.00	0.330	ug/L			10/17/24 10:37	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			10/17/24 10:37	1
Iodomethane	<7.00		10.0	7.00	ug/L			10/17/24 10:37	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			10/17/24 10:37	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			10/17/24 10:37	1
o-Xylene	<0.400		1.00	0.400	ug/L			10/17/24 10:37	1
Styrene	<0.370		1.00	0.370	ug/L			10/17/24 10:37	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			10/17/24 10:37	1
Toluene	<0.430		1.00	0.430	ug/L			10/17/24 10:37	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			10/17/24 10:37	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			10/17/24 10:37	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			10/17/24 10:37	1
Trichloroethene	<0.430		1.00	0.430	ug/L			10/17/24 10:37	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			10/17/24 10:37	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			10/17/24 10:37	1
Vinyl chloride	**0.209**	**J**	1.00	0.180	ug/L			10/17/24 10:37	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			10/17/24 10:37	1

Client: AECOM
Job ID: 310-292651-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: GUW-2-1
Lab Sample ID: 310-292651-1

Date Collected: 10/11/24 10:00
Matrix: Ground Water

Date Received: 10/11/24 11:50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*102*		*73 - 130*		*10/17/24 10:37*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*10/17/24 10:37*	*1*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*		*10/17/24 10:37*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		10/15/24 09:30	10/21/24 17:07	1
Arsenic	**12.9**		2.00	0.530	ug/L		10/15/24 09:30	10/21/24 17:07	1
Barium	**344**		2.00	0.660	ug/L		10/15/24 09:30	10/21/24 17:07	1
Beryllium	<0.330		1.00	0.330	ug/L		10/15/24 09:30	10/16/24 15:05	1
Cadmium	<0.100		0.200	0.100	ug/L		10/15/24 09:30	10/16/24 15:05	1
Chromium	<1.20		5.00	1.20	ug/L		10/15/24 09:30	10/16/24 15:05	1
Cobalt	**2.03**		0.500	0.170	ug/L		10/15/24 09:30	10/16/24 15:05	1
Copper	<1.80		5.00	1.80	ug/L		10/15/24 09:30	10/16/24 15:05	1
Lead	<0.260		0.500	0.260	ug/L		10/15/24 09:30	10/16/24 15:05	1
Nickel	<2.10		5.00	2.10	ug/L		10/15/24 09:30	10/21/24 17:07	1
Selenium	<1.40		5.00	1.40	ug/L		10/15/24 09:30	10/16/24 15:05	1
Silver	<0.500		1.00	0.500	ug/L		10/15/24 09:30	10/21/24 17:07	1
Thallium	<0.570		1.00	0.570	ug/L		10/15/24 09:30	10/21/24 17:07	1
Vanadium	<1.10		5.00	1.10	ug/L		10/15/24 09:30	10/16/24 15:05	1
Zinc	<9.70		20.0	9.70	ug/L		10/15/24 09:30	10/16/24 15:05	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**31.5**		7.50	5.55	mg/L			10/16/24 15:47	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**7.43**				NTU			10/11/24 10:00	1

Client: AECOM
Job ID: 310-292651-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: GUW3-1
Lab Sample ID: 310-292651-2
Date Collected: 10/11/24 08:15
Matrix: Water
Date Received: 10/11/24 11:50

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			10/17/24 11:00	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			10/17/24 11:00	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			10/17/24 11:00	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			10/17/24 11:00	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			10/17/24 11:00	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			10/17/24 11:00	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			10/17/24 11:00	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			10/17/24 11:00	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			10/17/24 11:00	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			10/17/24 11:00	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			10/17/24 11:00	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			10/17/24 11:00	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			10/17/24 11:00	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			10/17/24 11:00	1
2-Hexanone	<2.00		10.0	2.00	ug/L			10/17/24 11:00	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			10/17/24 11:00	1
Acetone	**5.45**	**J**	10.0	3.10	ug/L			10/17/24 11:00	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			10/17/24 11:00	1
Benzene	<0.220		0.500	0.220	ug/L			10/17/24 11:00	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			10/17/24 11:00	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			10/17/24 11:00	1
Bromoform	<0.780		5.00	0.780	ug/L			10/17/24 11:00	1
Bromomethane	<1.10		4.00	1.10	ug/L			10/17/24 11:00	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			10/17/24 11:00	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			10/17/24 11:00	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			10/17/24 11:00	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			10/17/24 11:00	1
Chloroethane	<0.790		4.00	0.790	ug/L			10/17/24 11:00	1
Chloroform	<1.30		3.00	1.30	ug/L			10/17/24 11:00	1
Chloromethane	<0.610		3.00	0.610	ug/L			10/17/24 11:00	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			10/17/24 11:00	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			10/17/24 11:00	1
Dibromomethane	<0.330		1.00	0.330	ug/L			10/17/24 11:00	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			10/17/24 11:00	1
Iodomethane	<7.00		10.0	7.00	ug/L			10/17/24 11:00	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			10/17/24 11:00	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			10/17/24 11:00	1
o-Xylene	<0.400		1.00	0.400	ug/L			10/17/24 11:00	1
Styrene	<0.370		1.00	0.370	ug/L			10/17/24 11:00	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			10/17/24 11:00	1
Toluene	<0.430		1.00	0.430	ug/L			10/17/24 11:00	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			10/17/24 11:00	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			10/17/24 11:00	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			10/17/24 11:00	1
Trichloroethene	<0.430		1.00	0.430	ug/L			10/17/24 11:00	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			10/17/24 11:00	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			10/17/24 11:00	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			10/17/24 11:00	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			10/17/24 11:00	1

Client: AECOM
Job ID: 310-292651-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: GUW3-1
Lab Sample ID: 310-292651-2

Date Collected: 10/11/24 08:15
Matrix: Water

Date Received: 10/11/24 11:50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*102*		*73 - 130*		*10/17/24 11:00*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*10/17/24 11:00*	*1*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*10/17/24 11:00*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		10/15/24 09:30	10/21/24 17:09	1
Arsenic	**2.04**		2.00	0.530	ug/L		10/15/24 09:30	10/21/24 17:09	1
Barium	**31.5**		2.00	0.660	ug/L		10/15/24 09:30	10/21/24 17:09	1
Beryllium	<0.330		1.00	0.330	ug/L		10/15/24 09:30	10/16/24 15:09	1
Cadmium	<0.100		0.200	0.100	ug/L		10/15/24 09:30	10/16/24 15:09	1
Chromium	<1.20		5.00	1.20	ug/L		10/15/24 09:30	10/16/24 15:09	1
Cobalt	**2.05**		0.500	0.170	ug/L		10/15/24 09:30	10/16/24 15:09	1
Copper	**6.59**		5.00	1.80	ug/L		10/15/24 09:30	10/16/24 15:09	1
Lead	**0.342**	**J**	0.500	0.260	ug/L		10/15/24 09:30	10/16/24 15:09	1
Nickel	**7.72**		5.00	2.10	ug/L		10/15/24 09:30	10/21/24 17:09	1
Selenium	<1.40		5.00	1.40	ug/L		10/15/24 09:30	10/16/24 15:09	1
Silver	<0.500		1.00	0.500	ug/L		10/15/24 09:30	10/21/24 17:09	1
Thallium	<0.570		1.00	0.570	ug/L		10/15/24 09:30	10/21/24 17:09	1
Vanadium	<1.10		5.00	1.10	ug/L		10/15/24 09:30	10/16/24 15:09	1
Zinc	**17.0**	**J**	20.0	9.70	ug/L		10/15/24 09:30	10/16/24 15:09	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**26.5**		7.50	5.55	mg/L			10/16/24 15:47	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**8.73**				NTU			10/11/24 08:15	1

Client: AECOM
Job ID: 310-292651-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: GUX-1
Lab Sample ID: 310-292651-3
Date Collected: 10/11/24 07:30
Matrix: Water
Date Received: 10/11/24 11:50

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			10/17/24 11:23	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			10/17/24 11:23	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			10/17/24 11:23	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			10/17/24 11:23	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			10/17/24 11:23	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			10/17/24 11:23	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			10/17/24 11:23	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			10/17/24 11:23	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			10/17/24 11:23	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			10/17/24 11:23	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			10/17/24 11:23	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			10/17/24 11:23	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			10/17/24 11:23	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			10/17/24 11:23	1
2-Hexanone	<2.00		10.0	2.00	ug/L			10/17/24 11:23	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			10/17/24 11:23	1
Acetone	<3.10		10.0	3.10	ug/L			10/17/24 11:23	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			10/17/24 11:23	1
Benzene	<0.220		0.500	0.220	ug/L			10/17/24 11:23	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			10/17/24 11:23	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			10/17/24 11:23	1
Bromoform	<0.780		5.00	0.780	ug/L			10/17/24 11:23	1
Bromomethane	<1.10		4.00	1.10	ug/L			10/17/24 11:23	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			10/17/24 11:23	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			10/17/24 11:23	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			10/17/24 11:23	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			10/17/24 11:23	1
Chloroethane	<0.790		4.00	0.790	ug/L			10/17/24 11:23	1
Chloroform	<1.30		3.00	1.30	ug/L			10/17/24 11:23	1
Chloromethane	<0.610		3.00	0.610	ug/L			10/17/24 11:23	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			10/17/24 11:23	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			10/17/24 11:23	1
Dibromomethane	<0.330		1.00	0.330	ug/L			10/17/24 11:23	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			10/17/24 11:23	1
Iodomethane	<7.00		10.0	7.00	ug/L			10/17/24 11:23	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			10/17/24 11:23	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			10/17/24 11:23	1
o-Xylene	<0.400		1.00	0.400	ug/L			10/17/24 11:23	1
Styrene	<0.370		1.00	0.370	ug/L			10/17/24 11:23	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			10/17/24 11:23	1
Toluene	<0.430		1.00	0.430	ug/L			10/17/24 11:23	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			10/17/24 11:23	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			10/17/24 11:23	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			10/17/24 11:23	1
Trichloroethene	<0.430		1.00	0.430	ug/L			10/17/24 11:23	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			10/17/24 11:23	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			10/17/24 11:23	1
Vinyl chloride	**0.398**	**J**	1.00	0.180	ug/L			10/17/24 11:23	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			10/17/24 11:23	1

Client: AECOM
Job ID: 310-292651-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: GUX-1
Lab Sample ID: 310-292651-3

Date Collected: 10/11/24 07:30
Matrix: Water

Date Received: 10/11/24 11:50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*100*		*73 - 130*		*10/17/24 11:23*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*10/17/24 11:23*	*1*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*10/17/24 11:23*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00	^3+	2.00	1.00	ug/L		10/15/24 09:30	10/16/24 15:12	1
Arsenic	<0.530		2.00	0.530	ug/L		10/15/24 09:30	10/21/24 17:11	1
Barium	**820**		2.00	0.660	ug/L		10/15/24 09:30	10/21/24 17:11	1
Beryllium	<0.330		1.00	0.330	ug/L		10/15/24 09:30	10/16/24 15:12	1
Cadmium	<0.100		0.200	0.100	ug/L		10/15/24 09:30	10/16/24 15:12	1
Chromium	<1.20		5.00	1.20	ug/L		10/15/24 09:30	10/16/24 15:12	1
Cobalt	<0.170		0.500	0.170	ug/L		10/15/24 09:30	10/16/24 15:12	1
Copper	**4.45**	**J**	5.00	1.80	ug/L		10/15/24 09:30	10/16/24 15:12	1
Lead	**0.359**	**J**	0.500	0.260	ug/L		10/15/24 09:30	10/16/24 15:12	1
Nickel	<2.10		5.00	2.10	ug/L		10/15/24 09:30	10/21/24 17:11	1
Selenium	<1.40		5.00	1.40	ug/L		10/15/24 09:30	10/16/24 15:12	1
Silver	<0.500		1.00	0.500	ug/L		10/15/24 09:30	10/21/24 17:11	1
Thallium	<0.570		1.00	0.570	ug/L		10/15/24 09:30	10/21/24 17:11	1
Vanadium	<1.10		5.00	1.10	ug/L		10/15/24 09:30	10/16/24 15:12	1
Zinc	<9.70		20.0	9.70	ug/L		10/15/24 09:30	10/16/24 15:12	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**28.5**		7.50	5.55	mg/L			10/16/24 15:47	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**4.57**				NTU			10/11/24 07:30	1

Definitions/Glossary

Client: AECOM
Job ID: 310-292651-1
Project/Site: Black Hawk County Landfill (IDNR)

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
^3+	Reporting Limit Check Standard is outside acceptance limits, high biased
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Surrogate Summary

Client: AECOM
Job ID: 310-292651-1
Project/Site: Black Hawk County Landfill (IDNR)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Ground Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-292651-1	GUW-2-1	102	98	100

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-292651-2	GUW3-1	102	98	99
310-292651-3	GUX-1	100	98	99
LCS 310-436465/6	Lab Control Sample	100	99	98
LCS 310-436465/7	Lab Control Sample	102	98	100
MB 310-436465/5	Method Blank	101	98	99

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 310-436465/5
Matrix: Water
Analysis Batch: 436465

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			10/17/24 06:03	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			10/17/24 06:03	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			10/17/24 06:03	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			10/17/24 06:03	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			10/17/24 06:03	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			10/17/24 06:03	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			10/17/24 06:03	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			10/17/24 06:03	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			10/17/24 06:03	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			10/17/24 06:03	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			10/17/24 06:03	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			10/17/24 06:03	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			10/17/24 06:03	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			10/17/24 06:03	1
2-Hexanone	<2.00		10.0	2.00	ug/L			10/17/24 06:03	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			10/17/24 06:03	1
Acetone	<3.10		10.0	3.10	ug/L			10/17/24 06:03	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			10/17/24 06:03	1
Benzene	<0.220		0.500	0.220	ug/L			10/17/24 06:03	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			10/17/24 06:03	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			10/17/24 06:03	1
Bromoform	<0.780		5.00	0.780	ug/L			10/17/24 06:03	1
Bromomethane	<1.10		4.00	1.10	ug/L			10/17/24 06:03	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			10/17/24 06:03	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			10/17/24 06:03	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			10/17/24 06:03	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			10/17/24 06:03	1
Chloroethane	<0.790		4.00	0.790	ug/L			10/17/24 06:03	1
Chloroform	<1.30		3.00	1.30	ug/L			10/17/24 06:03	1
Chloromethane	<0.610		3.00	0.610	ug/L			10/17/24 06:03	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			10/17/24 06:03	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			10/17/24 06:03	1
Dibromomethane	<0.330		1.00	0.330	ug/L			10/17/24 06:03	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			10/17/24 06:03	1
Iodomethane	<7.00		10.0	7.00	ug/L			10/17/24 06:03	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			10/17/24 06:03	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			10/17/24 06:03	1
o-Xylene	<0.400		1.00	0.400	ug/L			10/17/24 06:03	1
Styrene	<0.370		1.00	0.370	ug/L			10/17/24 06:03	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			10/17/24 06:03	1
Toluene	<0.430		1.00	0.430	ug/L			10/17/24 06:03	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			10/17/24 06:03	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			10/17/24 06:03	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			10/17/24 06:03	1
Trichloroethene	<0.430		1.00	0.430	ug/L			10/17/24 06:03	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			10/17/24 06:03	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			10/17/24 06:03	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			10/17/24 06:03	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-436465/5
Matrix: Water
Analysis Batch: 436465

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	<0.400		3.00	0.400	ug/L			10/17/24 06:03	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*101*		*73 - 130*		*10/17/24 06:03*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*10/17/24 06:03*	*1*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*10/17/24 06:03*	*1*

Lab Sample ID: LCS 310-436465/6
Matrix: Water
Analysis Batch: 436465

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	20.0	19.77		ug/L		99	71 - 120
1,1,1-Trichloroethane	20.0	19.15		ug/L		96	73 - 129
1,1,2,2-Tetrachloroethane	20.0	20.20		ug/L		101	68 - 124
1,1,2-Trichloroethane	20.0	20.13		ug/L		101	73 - 123
1,1-Dichloroethane	20.0	18.62		ug/L		93	70 - 127
1,1-Dichloroethene	20.0	18.12		ug/L		91	63 - 132
1,2,3-Trichloropropane	20.0	20.10		ug/L		100	65 - 127
1,2-Dibromo-3-Chloropropane	20.0	19.21		ug/L		96	50 - 150
1,2-Dibromoethane (EDB)	20.0	20.61		ug/L		103	75 - 125
1,2-Dichlorobenzene	20.0	19.93		ug/L		100	74 - 120
1,2-Dichloroethane	20.0	19.65		ug/L		98	71 - 125
1,2-Dichloropropane	20.0	18.77		ug/L		94	73 - 124
1,4-Dichlorobenzene	20.0	19.67		ug/L		98	72 - 120
2-Butanone (MEK)	40.0	38.04		ug/L		95	50 - 150
2-Hexanone	40.0	39.50		ug/L		99	60 - 140
4-Methyl-2-pentanone (MIBK)	40.0	39.43		ug/L		99	60 - 139
Acetone	40.0	38.55		ug/L		96	50 - 150
Acrylonitrile	200	193.7		ug/L		97	50 - 150
Benzene	20.0	18.93		ug/L		95	72 - 124
Bromochloromethane	20.0	20.16		ug/L		101	73 - 130
Bromodichloromethane	20.0	19.39		ug/L		97	74 - 122
Bromoform	20.0	19.61		ug/L		98	61 - 122
Carbon disulfide	20.0	17.39		ug/L		87	59 - 135
Carbon tetrachloride	20.0	19.12		ug/L		96	67 - 132
Chlorobenzene	20.0	19.65		ug/L		98	76 - 120
Chlorodibromomethane	20.0	19.79		ug/L		99	71 - 121
Chloroform	20.0	18.50		ug/L		93	72 - 125
cis-1,2-Dichloroethene	20.0	19.21		ug/L		96	74 - 123
cis-1,3-Dichloropropene	20.0	18.80		ug/L		94	71 - 125
Dibromomethane	20.0	20.03		ug/L		100	74 - 125
Ethylbenzene	20.0	19.72		ug/L		99	74 - 122
Iodomethane	20.0	10.79		ug/L		54	10 - 150
Methylene Chloride	20.0	19.11		ug/L		96	50 - 150
Styrene	20.0	20.53		ug/L		103	74 - 121
Tetrachloroethene	20.0	19.81		ug/L		99	71 - 130
Toluene	20.0	19.05		ug/L		95	74 - 123

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-436465/6
Matrix: Water
Analysis Batch: 436465

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
trans-1,2-Dichloroethene	20.0	18.72		ug/L		94	70 - 126
trans-1,3-Dichloropropene	20.0	18.92		ug/L		95	69 - 123
trans-1,4-Dichloro-2-butene	20.0	17.80		ug/L		89	50 - 150
Trichloroethene	20.0	19.58		ug/L		98	72 - 126
Vinyl acetate	40.0	36.91		ug/L		92	50 - 150
Xylenes, Total	40.0	39.50		ug/L		99	73 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*100*		*73 - 130*
Toluene-d8 (Surr)	*99*		*80 - 120*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*

Lab Sample ID: LCS 310-436465/7
Matrix: Water
Analysis Batch: 436465

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	13.83		ug/L		69	23 - 150
Chloroethane	20.0	17.25		ug/L		86	54 - 136
Chloromethane	20.0	16.86		ug/L		84	38 - 150
Trichlorofluoromethane	20.0	19.59		ug/L		98	54 - 149
Vinyl chloride	20.0	17.61		ug/L		88	56 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*102*		*73 - 130*
Toluene-d8 (Surr)	*98*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-436191/1-A
Matrix: Water
Analysis Batch: 436543

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 436191

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	<0.660		2.00	0.660	ug/L		10/15/24 09:30	10/16/24 13:26	1
Beryllium	<0.330		1.00	0.330	ug/L		10/15/24 09:30	10/16/24 13:26	1
Cadmium	<0.100		0.200	0.100	ug/L		10/15/24 09:30	10/16/24 13:26	1
Chromium	<1.20		5.00	1.20	ug/L		10/15/24 09:30	10/16/24 13:26	1
Cobalt	<0.170		0.500	0.170	ug/L		10/15/24 09:30	10/16/24 13:26	1
Copper	<1.80		5.00	1.80	ug/L		10/15/24 09:30	10/16/24 13:26	1
Lead	<0.260		0.500	0.260	ug/L		10/15/24 09:30	10/16/24 13:26	1
Selenium	<1.40		5.00	1.40	ug/L		10/15/24 09:30	10/16/24 13:26	1
Vanadium	<1.10		5.00	1.10	ug/L		10/15/24 09:30	10/16/24 13:26	1
Zinc	<9.70		20.0	9.70	ug/L		10/15/24 09:30	10/16/24 13:26	1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 310-436191/1-A
Matrix: Water
Analysis Batch: 437043

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 436191

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		10/15/24 09:30	10/21/24 16:11	1
Arsenic	<0.530		2.00	0.530	ug/L		10/15/24 09:30	10/21/24 16:11	1
Nickel	<2.10		5.00	2.10	ug/L		10/15/24 09:30	10/21/24 16:11	1
Silver	<0.500		1.00	0.500	ug/L		10/15/24 09:30	10/21/24 16:11	1
Thallium	<0.570		1.00	0.570	ug/L		10/15/24 09:30	10/21/24 16:11	1

Lab Sample ID: LCS 310-436191/2-A
Matrix: Water
Analysis Batch: 436543

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 436191

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Barium	100	91.89		ug/L		92	80 - 120
Beryllium	100	93.96		ug/L		94	80 - 120
Cadmium	100	90.14		ug/L		90	80 - 120
Chromium	100	92.70		ug/L		93	80 - 120
Cobalt	100	95.13		ug/L		95	80 - 120
Copper	200	187.4		ug/L		94	80 - 120
Lead	200	191.7		ug/L		96	80 - 120
Selenium	400	345.7		ug/L		86	80 - 120
Vanadium	100	89.56		ug/L		90	80 - 120
Zinc	200	177.1		ug/L		89	80 - 120

Lab Sample ID: LCS 310-436191/2-A
Matrix: Water
Analysis Batch: 437043

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 436191

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	200	220.1		ug/L		110	80 - 120
Arsenic	200	222.8		ug/L		111	80 - 120
Nickel	200	222.1		ug/L		111	80 - 120
Silver	100	109.1		ug/L		109	80 - 120
Thallium	100	87.12		ug/L		87	80 - 120

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: MB 310-436486/1
Matrix: Water
Analysis Batch: 436486

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<3.70		5.00	3.70	mg/L			10/16/24 15:47	1

Lab Sample ID: LCS 310-436486/2
Matrix: Water
Analysis Batch: 436486

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	99.00		mg/L		99	81 - 116

QC Association Summary

Client: AECOM
Job ID: 310-292651-1
Project/Site: Black Hawk County Landfill (IDNR)

GC/MS VOA

Analysis Batch: 436465

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292651-1	GUW-2-1	Total/NA	Ground Water	8260D	
310-292651-2	GUW3-1	Total/NA	Water	8260D	
310-292651-3	GUX-1	Total/NA	Water	8260D	
MB 310-436465/5	Method Blank	Total/NA	Water	8260D	
LCS 310-436465/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-436465/7	Lab Control Sample	Total/NA	Water	8260D	

Metals

Prep Batch: 436191

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292651-1	GUW-2-1	Total/NA	Ground Water	3005A	
310-292651-2	GUW3-1	Total/NA	Water	3005A	
310-292651-3	GUX-1	Total/NA	Water	3005A	
MB 310-436191/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-436191/2-A	Lab Control Sample	Total/NA	Water	3005A	

Analysis Batch: 436543

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292651-1	GUW-2-1	Total/NA	Ground Water	6020B	436191
310-292651-2	GUW3-1	Total/NA	Water	6020B	436191
310-292651-3	GUX-1	Total/NA	Water	6020B	436191
MB 310-436191/1-A	Method Blank	Total/NA	Water	6020B	436191
LCS 310-436191/2-A	Lab Control Sample	Total/NA	Water	6020B	436191

Analysis Batch: 437043

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292651-1	GUW-2-1	Total/NA	Ground Water	6020B	436191
310-292651-2	GUW3-1	Total/NA	Water	6020B	436191
310-292651-3	GUX-1	Total/NA	Water	6020B	436191
MB 310-436191/1-A	Method Blank	Total/NA	Water	6020B	436191
LCS 310-436191/2-A	Lab Control Sample	Total/NA	Water	6020B	436191

General Chemistry

Analysis Batch: 436486

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292651-1	GUW-2-1	Total/NA	Ground Water	I-3765-85	
310-292651-2	GUW3-1	Total/NA	Water	I-3765-85	
310-292651-3	GUX-1	Total/NA	Water	I-3765-85	
MB 310-436486/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-436486/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Field Service / Mobile Lab

Analysis Batch: 436163

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292651-1	GUW-2-1	Total/NA	Ground Water	Field Sampling	
310-292651-2	GUW3-1	Total/NA	Water	Field Sampling	
310-292651-3	GUX-1	Total/NA	Water	Field Sampling	

Lab Chronicle

Client: AECOM
Job ID: 310-292651-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: GUW-2-1
Lab Sample ID: 310-292651-1
Date Collected: 10/11/24 10:00
Matrix: Ground Water
Date Received: 10/11/24 11:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	436465	FE5V	EET CF	10/17/24 10:37
Total/NA	Prep	3005A			436191	QTZ5	EET CF	10/15/24 09:30
Total/NA	Analysis	6020B		1	436543	NFT2	EET CF	10/16/24 15:05
Total/NA	Prep	3005A			436191	QTZ5	EET CF	10/15/24 09:30
Total/NA	Analysis	6020B		1	437043	NFT2	EET CF	10/21/24 17:07
Total/NA	Analysis	I-3765-85		1	436486	HE7K	EET CF	10/16/24 15:47
Total/NA	Analysis	Field Sampling		1	436163	BJ0R	EET CF	10/11/24 10:00

Client Sample ID: GUW3-1
Lab Sample ID: 310-292651-2
Date Collected: 10/11/24 08:15
Matrix: Water
Date Received: 10/11/24 11:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	436465	FE5V	EET CF	10/17/24 11:00
Total/NA	Prep	3005A			436191	QTZ5	EET CF	10/15/24 09:30
Total/NA	Analysis	6020B		1	436543	NFT2	EET CF	10/16/24 15:09
Total/NA	Prep	3005A			436191	QTZ5	EET CF	10/15/24 09:30
Total/NA	Analysis	6020B		1	437043	NFT2	EET CF	10/21/24 17:09
Total/NA	Analysis	I-3765-85		1	436486	HE7K	EET CF	10/16/24 15:47
Total/NA	Analysis	Field Sampling		1	436163	BJ0R	EET CF	10/11/24 08:15

Client Sample ID: GUX-1
Lab Sample ID: 310-292651-3
Date Collected: 10/11/24 07:30
Matrix: Water
Date Received: 10/11/24 11:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	436465	FE5V	EET CF	10/17/24 11:23
Total/NA	Prep	3005A			436191	QTZ5	EET CF	10/15/24 09:30
Total/NA	Analysis	6020B		1	436543	NFT2	EET CF	10/16/24 15:12
Total/NA	Prep	3005A			436191	QTZ5	EET CF	10/15/24 09:30
Total/NA	Analysis	6020B		1	437043	NFT2	EET CF	10/21/24 17:11
Total/NA	Analysis	I-3765-85		1	436486	HE7K	EET CF	10/16/24 15:47
Total/NA	Analysis	Field Sampling		1	436163	BJ0R	EET CF	10/11/24 07:30

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Accreditation/Certification Summary

Client: AECOM
Job ID: 310-292651-1
Project/Site: Black Hawk County Landfill (IDNR)

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8260D		Ground Water	m,p-Xylene
8260D		Ground Water	o-Xylene
8260D		Water	m,p-Xylene
8260D		Water	o-Xylene
Field Sampling		Ground Water	Field Turbidity
Field Sampling		Water	Field Turbidity

Method Summary

Client: AECOM
Job ID: 310-292651-1
Project/Site: Black Hawk County Landfill (IDNR)

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
Field Sampling	Field Sampling	EPA	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
5030B	Purge and Trap	SW846	EET CF

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

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310-292651 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: AECOM

City/State: CITY Waterloo STATE IA. Project:

Receipt Information

Date/Time Received: DATE 10/11/24 TIME 11:50 Received By. JC

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☐ Lab Courier ☐ Lab Field Services ☑ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☑ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☐ Yes ☑ No *If yes:* Cooler # _____ of _____

Cooler Custody Seals Present? ☐ Yes ☑ No *If yes:* Cooler custody seals intact? ☐ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☑ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☐ Yes ☑ No *If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☑ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: 4 Correction Factor (°C): 0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 18.3 Corrected Temp (°C): 18.3

• **Sample Container Temperature**

Container(s) used:	CONTAINER 1	CONTAINER 2
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE If yes, contact PM before proceeding If no, proceed with login

Additional Comments

~~A~~ NO Trip Blank ~~A~~

Eurofins Cedar Falls
3019 Venture Way

Cedar Falls, IA 50613
phone 319.277.2401 fax 319.277 2425

Chain of Custody Record

eurofins Environment Testing America

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other IDNR

Eurofins Environment Testing America

Client Contact	**Project Manager: Chris Oelkers**	COC No
AECOM	Email Christopher Oelkers@aecom com	Site Contact: / Date: 10-11-24 / 1 of 2 COCs
501 Sycamore Street, Suite 222	Tel/Fax:319-296-6878	Lab Contact: / Carrier: / TALS Project # / Sampler
Waterloo, IA 50703	**Analysis Turnaround Time**	**For Lab Use Only:**
(319) 232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS	Walk-in Client:
(xxx) xxx-xxxx FAX	TAT if different from Below ____	Lab Sampling
Project Name Black Hawk Co IDNR	☑ 2 weeks	Job / SDG No
Site Black Hawk County Landfill	☐ 1 week	
P O #	☐ 2 days	
	☐ 1 day	

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	Appendix I, TSS	Appendix II, TSS	2,4-D	4,4'-DDD	beta-BHC	delta BHC	Endosulfan I	Endosulfan sulfate	Endrin aldehyde	Silvex	Sulfide	Sample Specific Notes
MW-603B			G	GW		N		X											
MW-604B			G	GW		N		X											
MW-709B			G	GW		N		X											
MW-710B			G	GW		N		X											
MW-711B			G	GW		N		X											
MW-712B			G	GW		N		X											
GUE-2			G	GW		N		X											
GUW1-1			G	GW		N		X											
GUW1-1-FD			G	GW		N		X											
GUW2-1	10-11-24	1000	G	GW	5	N		X											Turbidity - 7.43 NTU
Equipment Blank-2			G	GW		N		X											

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No | Cooler Temp (°C) Obs'd._____ Corr'd _____ Therm ID No ._____

Relinquished by: Ben Porter	Company: Aecom	Date/Time: 10-11-24	Received by:	Company:	Date/Time: 10/11/24 11:50
Relinquished by:	Company:	Date/Time	Received by:	Company:	Date/Time
Relinquished by:	Company:	Date/Time	Received in Laboratory by:	Company:	Date/Time

Eurofins Cedar Falls
3019 Venture Way

Cedar Falls, IA 50613
phone 319 277.2401 fax 319.277 2425

Chain of Custody Record

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Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other IDNR

Eurofins Environment Testing America

Client Contact	**Project Manager: Chris Oelkers**		COC No
AECOM	Email Christopher Oelkers@aecom.com	**Site Contact:**	**Date:** 10-11-24 — 2 of 2 COCs
501 Sycamore Street, Suite 222	**Tel/Fax:319-296-6878**	**Lab Contact:**	**Carrier:** — TALS Project #
Waterloo, IA 50703	**Analysis Turnaround Time** ☑ CALENDAR DAYS ☐ WORKING DAYS		Sampler
(319) 232-6531 Phone	TAT if different from Below ☑ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day		**For Lab Use Only:** Walk-in Client: Lab Sampling
(xxx) xxx-xxxx FAX			
Project Name. Black Hawk Co IDNR			Job / SDG No
Site Black Hawk County Landfill			
P O #			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	Appendix I, TSS	Appendix II, TSS	2,4-D	4,4'-DDD	beta-BHC	delta BHC	Endosulfan I	Endosulfan sulfate	Endrin aldehyde	Silvex	Sulfide	Sample Specific Notes
GUW3-1	10-11-24	0815	G	GW	5	N		X											Turbidity - 8.73 NTU
GUX-1	10-11-24	0730	G	GW	5	N		X											Turbidity - 4.57 NTU
P-213C			G	GW		N		X											
P-214CR			G	GW		N		X											
P-215CR			G	GW		N		X											
P-216CR			G	GW		N		X											
P-216CR-FD			G	GW		N		X											
P-604C			G	GW		N		X											
P-703C			G	GW		N		X											
Trip Blank	10-11-24	0530	G	W	3	N		X											

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No		Cooler Temp (°C) Obs'd. _____ Corr'd _____		Therm ID No. _____
Relinquished by: Ben Porter	Company: Aecom	Date/Time: 10-11-24	Received by:	Company:	Date/Time: 10/11/24 11:50
Relinquished by:	Company:	Date/Time	Received by:	Company:	Date/Time
Relinquished by:	Company:	Date/Time	Received in Laboratory by:	Company:	Date/Time

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-292651-1

Login Number: 292651

List Source: Eurofins Cedar Falls

List Number: 1

Creator: Hirsch, Preston

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	False	Received same day of collection; chilling process has begun.
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

ANALYTICAL REPORT

PREPARED FOR

Attn: Chris Oelkers
AECOM
501 Sycamore Street
Suite #222
Waterloo, Iowa 50703

Generated 10/31/2024 11:26:10 AM

JOB DESCRIPTION

Black Hawk County Landfill (IDNR)
Fall 2024

JOB NUMBER

310-292919-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

myEOL

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



Generated
10/31/2024 11:26:10 AM

Authorized for release by
Zach Bindert, Senior Project Manager
Zach.Bindert@et.eurofinsus.com
(319)595-2016

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Job Narrative
310-292919-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 10/16/2024 11:25 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.1°C.

GC/MS VOA
Method 8260D: The method blank for analytical batch 310-436774 contained benzene above the method detection limit. This target analyte concentration was less than the reporting limit (RL) in the method blank; therefore, re-extraction and/or re-analysis of samples was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Herbicides
Method 8151A: The following sample was diluted due to the nature of the sample matrix: OW-401B (310-292919-4). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Pesticides
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
Method 6020B: The low level check standard recovery associated with batch 310-437173 is outside the acceptance criteria for the following analyte(s): Cadmium.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Field Service / Mobile Lab
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Sample Summary

Client: AECOM
Job ID: 310-292919-1
Project/Site: Black Hawk County Landfill (IDNR)

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-292919-1	MW-319B	Water	10/15/24 10:15	10/16/24 11:25
310-292919-2	MW-320B	Water	10/15/24 10:45	10/16/24 11:25
310-292919-3	Trip Blank	Water	10/15/24 06:00	10/16/24 11:25
310-292919-4	OW-401B	Water	10/15/24 14:00	10/16/24 11:25
310-292919-5	Duplicate #3	Water	10/15/24 00:00	10/16/24 11:25

Detection Summary

Client: AECOM
Job ID: 310-292919-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: MW-319B — Lab Sample ID: 310-292919-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	1.11	J	2.00	0.530	ug/L	1		6020B	Total/NA
Barium	211		2.00	0.660	ug/L	1		6020B	Total/NA
Chromium	15.2		5.00	1.20	ug/L	1		6020B	Total/NA
Cobalt	0.296	J	0.500	0.170	ug/L	1		6020B	Total/NA
Lead	0.278	J	0.500	0.260	ug/L	1		6020B	Total/NA
Nickel	38.4		5.00	2.10	ug/L	1		6020B	Total/NA
Selenium	2.61	J	5.00	1.40	ug/L	1		6020B	Total/NA
Vanadium	1.27	J	5.00	1.10	ug/L	1		6020B	Total/NA
Total Suspended Solids	1.50	J	1.88	1.39	mg/L	1		I-3765-85	Total/NA
Field Turbidity	1.94				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-320B — Lab Sample ID: 310-292919-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.570	J	2.00	0.530	ug/L	1		6020B	Total/NA
Barium	244		2.00	0.660	ug/L	1		6020B	Total/NA
Chromium	27.7		5.00	1.20	ug/L	1		6020B	Total/NA
Cobalt	0.630		0.500	0.170	ug/L	1		6020B	Total/NA
Copper	1.98	J	5.00	1.80	ug/L	1		6020B	Total/NA
Nickel	19.7		5.00	2.10	ug/L	1		6020B	Total/NA
Vanadium	1.38	J	5.00	1.10	ug/L	1		6020B	Total/NA
Total Suspended Solids	3.38		1.88	1.39	mg/L	1		I-3765-85	Total/NA
Field Turbidity	10.84				NTU	1		Field Sampling	Total/NA

Client Sample ID: Trip Blank — Lab Sample ID: 310-292919-3

No Detections.

Client Sample ID: OW-401B — Lab Sample ID: 310-292919-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	8.80	J	10.0	3.10	ug/L	1		8260D	Total/NA
Benzene	3.46		0.500	0.220	ug/L	1		8260D	Total/NA
Chlorobenzene	0.450	J	1.00	0.400	ug/L	1		8260D	Total/NA
Arsenic	8.77		2.00	0.530	ug/L	1		6020B	Total/NA
Barium	1760		2.00	0.660	ug/L	1		6020B	Total/NA
Chromium	2.24	J	5.00	1.20	ug/L	1		6020B	Total/NA
Cobalt	2.87		0.500	0.170	ug/L	1		6020B	Total/NA
Lead	0.312	J	0.500	0.260	ug/L	1		6020B	Total/NA
Nickel	38.3		5.00	2.10	ug/L	1		6020B	Total/NA
Vanadium	3.15	J	5.00	1.10	ug/L	1		6020B	Total/NA
Total Suspended Solids	77.0		15.0	11.1	mg/L	1		I-3765-85	Total/NA
Field Turbidity	8.38				NTU	1		Field Sampling	Total/NA

Client Sample ID: Duplicate #3 — Lab Sample ID: 310-292919-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dichlorobenzene	1.09		1.00	0.230	ug/L	1		8260D	Total/NA
Acetone	9.16	J	10.0	3.10	ug/L	1		8260D	Total/NA
Benzene	3.39		0.500	0.220	ug/L	1		8260D	Total/NA
Chlorobenzene	0.447	J	1.00	0.400	ug/L	1		8260D	Total/NA
Chloroethane	0.905	J	4.00	0.790	ug/L	1		8260D	Total/NA
Arsenic	8.88		2.00	0.530	ug/L	1		6020B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: Duplicate #3 (Continued)

Lab Sample ID: 310-292919-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	1700		2.00	0.660	ug/L	1		6020B	Total/NA
Chromium	2.10	J	5.00	1.20	ug/L	1		6020B	Total/NA
Cobalt	2.88		0.500	0.170	ug/L	1		6020B	Total/NA
Lead	0.335	J	0.500	0.260	ug/L	1		6020B	Total/NA
Nickel	39.3		5.00	2.10	ug/L	1		6020B	Total/NA
Vanadium	2.89	J	5.00	1.10	ug/L	1		6020B	Total/NA
Total Suspended Solids	61.0		15.0	11.1	mg/L	1		I-3765-85	Total/NA

This Detection Summary does not include radiochemical test results.

Client: AECOM
Job ID: 310-292919-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: MW-319B
Lab Sample ID: 310-292919-1
Date Collected: 10/15/24 10:15
Matrix: Water
Date Received: 10/16/24 11:25

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			10/20/24 07:49	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			10/20/24 07:49	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			10/20/24 07:49	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			10/20/24 07:49	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			10/20/24 07:49	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			10/20/24 07:49	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			10/20/24 07:49	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			10/20/24 07:49	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			10/20/24 07:49	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			10/20/24 07:49	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			10/20/24 07:49	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			10/20/24 07:49	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			10/20/24 07:49	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			10/20/24 07:49	1
2-Hexanone	<2.00		10.0	2.00	ug/L			10/20/24 07:49	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			10/20/24 07:49	1
Acetone	<3.10		10.0	3.10	ug/L			10/20/24 07:49	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			10/20/24 07:49	1
Benzene	<0.220		0.500	0.220	ug/L			10/20/24 07:49	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			10/20/24 07:49	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			10/20/24 07:49	1
Bromoform	<0.780		5.00	0.780	ug/L			10/20/24 07:49	1
Bromomethane	<1.10		4.00	1.10	ug/L			10/20/24 07:49	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			10/20/24 07:49	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			10/20/24 07:49	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			10/20/24 07:49	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			10/20/24 07:49	1
Chloroethane	<0.790		4.00	0.790	ug/L			10/20/24 07:49	1
Chloroform	<1.30		3.00	1.30	ug/L			10/20/24 07:49	1
Chloromethane	<0.610		3.00	0.610	ug/L			10/20/24 07:49	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			10/20/24 07:49	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			10/20/24 07:49	1
Dibromomethane	<0.330		1.00	0.330	ug/L			10/20/24 07:49	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			10/26/24 03:21	1
Iodomethane	<7.00		10.0	7.00	ug/L			10/20/24 07:49	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			10/26/24 03:21	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			10/20/24 07:49	1
o-Xylene	<0.400		1.00	0.400	ug/L			10/26/24 03:21	1
Styrene	<0.370		1.00	0.370	ug/L			10/20/24 07:49	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			10/20/24 07:49	1
Toluene	<0.430		1.00	0.430	ug/L			10/20/24 07:49	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			10/20/24 07:49	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			10/20/24 07:49	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			10/20/24 07:49	1
Trichloroethene	<0.430		1.00	0.430	ug/L			10/20/24 07:49	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			10/20/24 07:49	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			10/20/24 07:49	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			10/20/24 07:49	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			10/26/24 03:21	1

Client: AECOM
Job ID: 310-292919-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: MW-319B
Lab Sample ID: 310-292919-1
Date Collected: 10/15/24 10:15
Matrix: Water
Date Received: 10/16/24 11:25

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*100*		*73 - 130*		*10/20/24 07:49*	*1*
Dibromofluoromethane (Surr)	*100*		*73 - 130*		*10/26/24 03:21*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*10/20/24 07:49*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*10/26/24 03:21*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*10/20/24 07:49*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*10/26/24 03:21*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		10/18/24 09:30	10/21/24 13:13	1
Arsenic	**1.11**	**J**	2.00	0.530	ug/L		10/18/24 09:30	10/21/24 13:13	1
Barium	**211**		2.00	0.660	ug/L		10/18/24 09:30	10/21/24 13:13	1
Beryllium	<0.330		1.00	0.330	ug/L		10/18/24 09:30	10/29/24 18:45	1
Cadmium	<0.100	^3+	0.200	0.100	ug/L		10/18/24 09:30	10/22/24 20:26	1
Chromium	**15.2**		5.00	1.20	ug/L		10/18/24 09:30	10/21/24 13:13	1
Cobalt	**0.296**	**J**	0.500	0.170	ug/L		10/18/24 09:30	10/21/24 13:13	1
Copper	<1.80		5.00	1.80	ug/L		10/18/24 09:30	10/21/24 13:13	1
Lead	**0.278**	**J**	0.500	0.260	ug/L		10/18/24 09:30	10/21/24 13:13	1
Nickel	**38.4**		5.00	2.10	ug/L		10/18/24 09:30	10/29/24 18:45	1
Selenium	**2.61**	**J**	5.00	1.40	ug/L		10/18/24 09:30	10/21/24 13:13	1
Silver	<0.500		1.00	0.500	ug/L		10/18/24 09:30	10/21/24 13:13	1
Thallium	<0.570		1.00	0.570	ug/L		10/18/24 09:30	10/30/24 16:00	1
Vanadium	**1.27**	**J**	5.00	1.10	ug/L		10/18/24 09:30	10/21/24 13:13	1
Zinc	<9.70		20.0	9.70	ug/L		10/18/24 09:30	10/21/24 13:13	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**1.50**	**J**	1.88	1.39	mg/L			10/18/24 07:11	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**1.94**				NTU			10/15/24 10:15	1

Client: AECOM
Job ID: 310-292919-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: MW-320B
Lab Sample ID: 310-292919-2
Date Collected: 10/15/24 10:45
Matrix: Water
Date Received: 10/16/24 11:25

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			10/20/24 08:12	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			10/20/24 08:12	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			10/20/24 08:12	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			10/20/24 08:12	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			10/20/24 08:12	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			10/20/24 08:12	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			10/20/24 08:12	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			10/20/24 08:12	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			10/20/24 08:12	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			10/20/24 08:12	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			10/20/24 08:12	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			10/20/24 08:12	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			10/20/24 08:12	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			10/20/24 08:12	1
2-Hexanone	<2.00		10.0	2.00	ug/L			10/20/24 08:12	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			10/20/24 08:12	1
Acetone	<3.10		10.0	3.10	ug/L			10/20/24 08:12	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			10/20/24 08:12	1
Benzene	<0.220		0.500	0.220	ug/L			10/20/24 08:12	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			10/20/24 08:12	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			10/20/24 08:12	1
Bromoform	<0.780		5.00	0.780	ug/L			10/20/24 08:12	1
Bromomethane	<1.10		4.00	1.10	ug/L			10/20/24 08:12	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			10/20/24 08:12	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			10/20/24 08:12	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			10/20/24 08:12	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			10/20/24 08:12	1
Chloroethane	<0.790		4.00	0.790	ug/L			10/20/24 08:12	1
Chloroform	<1.30		3.00	1.30	ug/L			10/20/24 08:12	1
Chloromethane	<0.610		3.00	0.610	ug/L			10/20/24 08:12	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			10/20/24 08:12	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			10/20/24 08:12	1
Dibromomethane	<0.330		1.00	0.330	ug/L			10/20/24 08:12	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			10/20/24 08:12	1
Iodomethane	<7.00		10.0	7.00	ug/L			10/20/24 08:12	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			10/26/24 03:43	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			10/20/24 08:12	1
o-Xylene	<0.400		1.00	0.400	ug/L			10/26/24 03:43	1
Styrene	<0.370		1.00	0.370	ug/L			10/20/24 08:12	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			10/20/24 08:12	1
Toluene	<0.430		1.00	0.430	ug/L			10/20/24 08:12	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			10/20/24 08:12	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			10/20/24 08:12	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			10/20/24 08:12	1
Trichloroethene	<0.430		1.00	0.430	ug/L			10/20/24 08:12	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			10/20/24 08:12	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			10/20/24 08:12	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			10/20/24 08:12	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			10/26/24 03:43	1

Client: AECOM
Job ID: 310-292919-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: MW-320B
Lab Sample ID: 310-292919-2

Date Collected: 10/15/24 10:45
Matrix: Water

Date Received: 10/16/24 11:25

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*100*		*73 - 130*		*10/20/24 08:12*	*1*
Dibromofluoromethane (Surr)	*100*		*73 - 130*		*10/26/24 03:43*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*10/20/24 08:12*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*10/26/24 03:43*	*1*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*		*10/20/24 08:12*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*		*10/26/24 03:43*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		10/18/24 09:30	10/21/24 13:17	1
Arsenic	**0.570**	**J**	2.00	0.530	ug/L		10/18/24 09:30	10/21/24 13:17	1
Barium	**244**		2.00	0.660	ug/L		10/18/24 09:30	10/21/24 13:17	1
Beryllium	<0.330		1.00	0.330	ug/L		10/18/24 09:30	10/29/24 18:49	1
Cadmium	<0.100		0.200	0.100	ug/L		10/18/24 09:30	10/21/24 13:17	1
Chromium	**27.7**		5.00	1.20	ug/L		10/18/24 09:30	10/21/24 13:17	1
Cobalt	**0.630**		0.500	0.170	ug/L		10/18/24 09:30	10/21/24 13:17	1
Copper	**1.98**	**J**	5.00	1.80	ug/L		10/18/24 09:30	10/21/24 13:17	1
Lead	<0.260		0.500	0.260	ug/L		10/18/24 09:30	10/21/24 13:17	1
Nickel	**19.7**		5.00	2.10	ug/L		10/18/24 09:30	10/29/24 18:49	1
Selenium	<1.40		5.00	1.40	ug/L		10/18/24 09:30	10/21/24 13:17	1
Silver	<0.500		1.00	0.500	ug/L		10/18/24 09:30	10/21/24 13:17	1
Thallium	<0.570		1.00	0.570	ug/L		10/18/24 09:30	10/30/24 16:03	1
Vanadium	**1.38**	**J**	5.00	1.10	ug/L		10/18/24 09:30	10/21/24 13:17	1
Zinc	<9.70		20.0	9.70	ug/L		10/18/24 09:30	10/21/24 13:17	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**3.38**		1.88	1.39	mg/L			10/17/24 11:55	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**10.84**				NTU			10/15/24 10:45	1

Client: AECOM
Job ID: 310-292919-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Trip Blank
Lab Sample ID: 310-292919-3
Date Collected: 10/15/24 06:00
Matrix: Water
Date Received: 10/16/24 11:25

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			10/20/24 03:38	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			10/20/24 03:38	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			10/20/24 03:38	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			10/20/24 03:38	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			10/20/24 03:38	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			10/20/24 03:38	1
1,1-Dichloropropene	<0.430		1.00	0.430	ug/L			10/20/24 03:38	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			10/20/24 03:38	1
1,2,4-Trichlorobenzene	<0.750		5.00	0.750	ug/L			10/20/24 03:38	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			10/20/24 03:38	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			10/20/24 03:38	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			10/20/24 03:38	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			10/20/24 03:38	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			10/20/24 03:38	1
1,3-Dichlorobenzene	<0.300		1.00	0.300	ug/L			10/20/24 03:38	1
1,3-Dichloropropane	<0.400		1.00	0.400	ug/L			10/20/24 03:38	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			10/20/24 03:38	1
2,2-Dichloropropane	<0.690		4.00	0.690	ug/L			10/20/24 03:38	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			10/20/24 03:38	1
2-Hexanone	<2.00		10.0	2.00	ug/L			10/20/24 03:38	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			10/20/24 03:38	1
Acetone	<3.10		10.0	3.10	ug/L			10/20/24 03:38	1
Acrolein	<3.60		10.0	3.60	ug/L			10/20/24 03:38	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			10/20/24 03:38	1
Allyl chloride	<0.700		2.00	0.700	ug/L			10/20/24 03:38	1
Benzene	<0.220		0.500	0.220	ug/L			10/20/24 03:38	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			10/20/24 03:38	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			10/20/24 03:38	1
Bromoform	<0.780		5.00	0.780	ug/L			10/20/24 03:38	1
Bromomethane	<1.10		4.00	1.10	ug/L			10/20/24 03:38	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			10/20/24 03:38	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			10/20/24 03:38	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			10/20/24 03:38	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			10/20/24 03:38	1
Chloroethane	<0.790		4.00	0.790	ug/L			10/20/24 03:38	1
Chloroform	<1.30		3.00	1.30	ug/L			10/20/24 03:38	1
Chloromethane	<0.610		3.00	0.610	ug/L			10/20/24 03:38	1
Chloroprene	<0.230		1.00	0.230	ug/L			10/20/24 03:38	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			10/20/24 03:38	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			10/20/24 03:38	1
Dibromomethane	<0.330		1.00	0.330	ug/L			10/20/24 03:38	1
Dichlorodifluoromethane	<0.250		3.00	0.250	ug/L			10/20/24 03:38	1
Ethyl methacrylate	<0.680		2.00	0.680	ug/L			10/20/24 03:38	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			10/20/24 03:38	1
Iodomethane	<7.00		10.0	7.00	ug/L			10/20/24 03:38	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			10/20/24 03:38	1
Methacrylonitrile	<3.30		10.0	3.30	ug/L			10/20/24 03:38	1
Methyl methacrylate	<0.760		2.00	0.760	ug/L			10/20/24 03:38	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			10/20/24 03:38	1

Client: AECOM
Job ID: 310-292919-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Trip Blank
Lab Sample ID: 310-292919-3
Date Collected: 10/15/24 06:00
Matrix: Water
Date Received: 10/16/24 11:25

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<3.00		5.00	3.00	ug/L			10/20/24 03:38	1
o-Xylene	<0.400		1.00	0.400	ug/L			10/20/24 03:38	1
Propionitrile	<3.40		10.0	3.40	ug/L			10/20/24 03:38	1
Styrene	<0.370		1.00	0.370	ug/L			10/20/24 03:38	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			10/20/24 03:38	1
Toluene	<0.430		1.00	0.430	ug/L			10/20/24 03:38	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			10/20/24 03:38	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			10/20/24 03:38	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			10/20/24 03:38	1
Trichloroethene	<0.430		1.00	0.430	ug/L			10/20/24 03:38	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			10/20/24 03:38	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			10/20/24 03:38	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			10/20/24 03:38	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			10/20/24 03:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*101*		*73 - 130*		*10/20/24 03:38*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*10/20/24 03:38*	*1*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*		*10/20/24 03:38*	*1*

Client: AECOM
Job ID: 310-292919-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-401B
Lab Sample ID: 310-292919-4
Date Collected: 10/15/24 14:00
Matrix: Water
Date Received: 10/16/24 11:25

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			10/20/24 08:35	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			10/20/24 08:35	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			10/20/24 08:35	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			10/20/24 08:35	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			10/20/24 08:35	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			10/20/24 08:35	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			10/20/24 08:35	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			10/20/24 08:35	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			10/20/24 08:35	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			10/20/24 08:35	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			10/20/24 08:35	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			10/20/24 08:35	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			10/20/24 08:35	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			10/20/24 08:35	1
2-Hexanone	<2.00		10.0	2.00	ug/L			10/20/24 08:35	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			10/20/24 08:35	1
Acetone	**8.80**	**J**	10.0	3.10	ug/L			10/26/24 04:06	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			10/20/24 08:35	1
Benzene	**3.46**		0.500	0.220	ug/L			10/26/24 04:06	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			10/20/24 08:35	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			10/20/24 08:35	1
Bromoform	<0.780		5.00	0.780	ug/L			10/20/24 08:35	1
Bromomethane	<1.10		4.00	1.10	ug/L			10/20/24 08:35	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			10/20/24 08:35	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			10/20/24 08:35	1
Chlorobenzene	**0.450**	**J**	1.00	0.400	ug/L			10/26/24 04:06	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			10/20/24 08:35	1
Chloroethane	<0.790		4.00	0.790	ug/L			10/26/24 04:06	1
Chloroform	<1.30		3.00	1.30	ug/L			10/20/24 08:35	1
Chloromethane	<0.610		3.00	0.610	ug/L			10/20/24 08:35	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			10/20/24 08:35	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			10/20/24 08:35	1
Dibromomethane	<0.330		1.00	0.330	ug/L			10/20/24 08:35	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			10/20/24 08:35	1
Iodomethane	<7.00		10.0	7.00	ug/L			10/20/24 08:35	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			10/26/24 04:06	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			10/20/24 08:35	1
o-Xylene	<0.400		1.00	0.400	ug/L			10/20/24 08:35	1
Styrene	<0.370		1.00	0.370	ug/L			10/20/24 08:35	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			10/20/24 08:35	1
Toluene	<0.430		1.00	0.430	ug/L			10/20/24 08:35	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			10/20/24 08:35	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			10/20/24 08:35	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			10/20/24 08:35	1
Trichloroethene	<0.430		1.00	0.430	ug/L			10/20/24 08:35	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			10/20/24 08:35	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			10/20/24 08:35	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			10/20/24 08:35	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			10/26/24 04:06	1

Client Sample ID: OW-401B
Lab Sample ID: 310-292919-4
Date Collected: 10/15/24 14:00
Matrix: Water
Date Received: 10/16/24 11:25

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	*101*		*73 - 130*		*10/20/24 08:35*	*1*
Dibromofluoromethane (Surr)	*100*		*73 - 130*		*10/26/24 04:06*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*10/20/24 08:35*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*10/26/24 04:06*	*1*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*		*10/20/24 08:35*	*1*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*		*10/26/24 04:06*	*1*

Method: SW846 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
beta-BHC	<0.0407		0.0970	0.0407	ug/L		10/18/24 10:02	10/21/24 11:41	1
delta-BHC	<0.0310		0.0970	0.0310	ug/L		10/18/24 10:02	10/21/24 11:41	1
Endosulfan sulfate	<0.0175		0.0970	0.0175	ug/L		10/18/24 10:02	10/21/24 11:41	1
Endrin aldehyde	<0.0262		0.0970	0.0262	ug/L		10/18/24 10:02	10/21/24 11:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl (Surr)	*80*		*10 - 136*	*10/18/24 10:02*	*10/21/24 11:41*	*1*
Tetrachloro-m-xylene (Surr)	*59*		*10 - 130*	*10/18/24 10:02*	*10/21/24 11:41*	*1*

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	<2.39		5.73	2.39	ug/L		10/20/24 20:03	10/22/24 14:08	10
Silvex (2,4,5-TP)	<0.210		0.478	0.210	ug/L		10/20/24 20:03	10/22/24 14:08	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	*121*		*34 - 142*	*10/20/24 20:03*	*10/22/24 14:08*	*10*
DCAA	*126*		*34 - 142*	*10/20/24 20:03*	*10/22/24 14:08*	*10*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		10/18/24 09:30	10/21/24 13:21	1
Arsenic	**8.77**		2.00	0.530	ug/L		10/18/24 09:30	10/21/24 13:21	1
Barium	**1760**		2.00	0.660	ug/L		10/18/24 09:30	10/21/24 13:21	1
Beryllium	<0.330		1.00	0.330	ug/L		10/18/24 09:30	10/29/24 18:52	1
Cadmium	<0.100		0.200	0.100	ug/L		10/18/24 09:30	10/21/24 13:21	1
Chromium	**2.24**	**J**	5.00	1.20	ug/L		10/18/24 09:30	10/21/24 13:21	1
Cobalt	**2.87**		0.500	0.170	ug/L		10/18/24 09:30	10/21/24 13:21	1
Copper	<1.80		5.00	1.80	ug/L		10/18/24 09:30	10/21/24 13:21	1
Lead	**0.312**	**J**	0.500	0.260	ug/L		10/18/24 09:30	10/21/24 13:21	1
Nickel	**38.3**		5.00	2.10	ug/L		10/18/24 09:30	10/29/24 18:52	1
Selenium	<1.40		5.00	1.40	ug/L		10/18/24 09:30	10/21/24 13:21	1
Silver	<0.500		1.00	0.500	ug/L		10/18/24 09:30	10/21/24 13:21	1
Thallium	<0.570		1.00	0.570	ug/L		10/18/24 09:30	10/30/24 16:06	1
Vanadium	**3.15**	**J**	5.00	1.10	ug/L		10/18/24 09:30	10/21/24 13:21	1
Zinc	<9.70		20.0	9.70	ug/L		10/18/24 09:30	10/21/24 13:21	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide (SW846 9034)	<1.41		3.00	1.41	mg/L		10/18/24 10:08	10/18/24 11:49	1
Total Suspended Solids (USGS I-3765-85)	**77.0**		15.0	11.1	mg/L			10/17/24 11:55	1

Client Sample Results

Client: AECOM
Job ID: 310-292919-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-401B
Lab Sample ID: 310-292919-4
Date Collected: 10/15/24 14:00
Matrix: Water
Date Received: 10/16/24 11:25

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	8.38				NTU			10/15/24 14:00	1

Client: AECOM
Job ID: 310-292919-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Duplicate #3
Lab Sample ID: 310-292919-5
Date Collected: 10/15/24 00:00
Matrix: Water
Date Received: 10/16/24 11:25

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			10/20/24 08:58	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			10/20/24 08:58	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			10/20/24 08:58	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			10/20/24 08:58	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			10/20/24 08:58	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			10/20/24 08:58	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			10/20/24 08:58	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			10/20/24 08:58	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			10/20/24 08:58	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			10/20/24 08:58	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			10/20/24 08:58	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			10/20/24 08:58	1
1,4-Dichlorobenzene	**1.09**		1.00	0.230	ug/L			10/20/24 08:58	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			10/20/24 08:58	1
2-Hexanone	<2.00		10.0	2.00	ug/L			10/20/24 08:58	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			10/20/24 08:58	1
Acetone	**9.16**	**J**	10.0	3.10	ug/L			10/26/24 04:29	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			10/20/24 08:58	1
Benzene	**3.39**		0.500	0.220	ug/L			10/26/24 04:29	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			10/20/24 08:58	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			10/20/24 08:58	1
Bromoform	<0.780		5.00	0.780	ug/L			10/20/24 08:58	1
Bromomethane	<1.10		4.00	1.10	ug/L			10/20/24 08:58	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			10/20/24 08:58	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			10/20/24 08:58	1
Chlorobenzene	**0.447**	**J**	1.00	0.400	ug/L			10/26/24 04:29	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			10/20/24 08:58	1
Chloroethane	**0.905**	**J**	4.00	0.790	ug/L			10/26/24 04:29	1
Chloroform	<1.30		3.00	1.30	ug/L			10/20/24 08:58	1
Chloromethane	<0.610		3.00	0.610	ug/L			10/20/24 08:58	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			10/20/24 08:58	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			10/20/24 08:58	1
Dibromomethane	<0.330		1.00	0.330	ug/L			10/20/24 08:58	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			10/20/24 08:58	1
Iodomethane	<7.00		10.0	7.00	ug/L			10/20/24 08:58	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			10/26/24 04:29	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			10/20/24 08:58	1
o-Xylene	<0.400		1.00	0.400	ug/L			10/26/24 04:29	1
Styrene	<0.370		1.00	0.370	ug/L			10/20/24 08:58	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			10/20/24 08:58	1
Toluene	<0.430		1.00	0.430	ug/L			10/20/24 08:58	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			10/20/24 08:58	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			10/20/24 08:58	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			10/20/24 08:58	1
Trichloroethene	<0.430		1.00	0.430	ug/L			10/20/24 08:58	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			10/20/24 08:58	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			10/20/24 08:58	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			10/20/24 08:58	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			10/26/24 04:29	1

Client: AECOM
Job ID: 310-292919-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Duplicate #3
Lab Sample ID: 310-292919-5

Date Collected: 10/15/24 00:00
Matrix: Water

Date Received: 10/16/24 11:25

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*100*		*73 - 130*		*10/20/24 08:58*	*1*
Dibromofluoromethane (Surr)	*100*		*73 - 130*		*10/26/24 04:29*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*10/20/24 08:58*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*10/26/24 04:29*	*1*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*10/20/24 08:58*	*1*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*		*10/26/24 04:29*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		10/18/24 09:30	10/21/24 13:39	1
Arsenic	**8.88**		2.00	0.530	ug/L		10/18/24 09:30	10/21/24 13:39	1
Barium	**1700**		2.00	0.660	ug/L		10/18/24 09:30	10/21/24 13:39	1
Beryllium	<0.330		1.00	0.330	ug/L		10/18/24 09:30	10/29/24 18:56	1
Cadmium	<0.100		0.200	0.100	ug/L		10/18/24 09:30	10/21/24 13:39	1
Chromium	**2.10**	**J**	5.00	1.20	ug/L		10/18/24 09:30	10/21/24 13:39	1
Cobalt	**2.88**		0.500	0.170	ug/L		10/18/24 09:30	10/21/24 13:39	1
Copper	<1.80		5.00	1.80	ug/L		10/18/24 09:30	10/21/24 13:39	1
Lead	**0.335**	**J**	0.500	0.260	ug/L		10/18/24 09:30	10/21/24 13:39	1
Nickel	**39.3**		5.00	2.10	ug/L		10/18/24 09:30	10/29/24 18:56	1
Selenium	<1.40		5.00	1.40	ug/L		10/18/24 09:30	10/21/24 13:39	1
Silver	<0.500		1.00	0.500	ug/L		10/18/24 09:30	10/29/24 18:56	1
Thallium	<0.570		1.00	0.570	ug/L		10/18/24 09:30	10/30/24 16:09	1
Vanadium	**2.89**	**J**	5.00	1.10	ug/L		10/18/24 09:30	10/21/24 13:39	1
Zinc	<9.70		20.0	9.70	ug/L		10/18/24 09:30	10/21/24 13:39	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**61.0**		15.0	11.1	mg/L			10/18/24 07:11	1

Definitions/Glossary

Client: AECOM
Job ID: 310-292919-1
Project/Site: Black Hawk County Landfill (IDNR)

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
^3+	Reporting Limit Check Standard is outside acceptance limits, high biased
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Surrogate Summary

Client: AECOM
Job ID: 310-292919-1
Project/Site: Black Hawk County Landfill (IDNR)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-292919-1	MW-319B	100	99	101
310-292919-1	MW-319B	100	99	101
310-292919-2	MW-320B	100	98	100
310-292919-2	MW-320B	100	98	102
310-292919-3	Trip Blank	101	98	100
310-292919-4	OW-401B	101	99	100
310-292919-4	OW-401B	100	99	100
310-292919-5	Duplicate #3	100	99	99
310-292919-5	Duplicate #3	100	99	100
LCS 310-436774/6	Lab Control Sample	101	100	98
LCS 310-436774/7	Lab Control Sample	102	98	100
LCS 310-437419/6	Lab Control Sample	99	99	99
LCS 310-437419/7	Lab Control Sample	101	98	101
MB 310-436774/5	Method Blank	100	98	100
MB 310-437419/5	Method Blank	100	98	101

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		DCB1	TCX1
Lab Sample ID	Client Sample ID	(10-136)	(10-130)
310-292919-4	OW-401B	80	59

Surrogate Legend

DCB = DCB Decachlorobiphenyl (Surr)
TCX = Tetrachloro-m-xylene (Surr)

Method: 8151A - Herbicides (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		DCPAA1	DCPAA2
Lab Sample ID	Client Sample ID	(34-142)	(34-142)
310-292919-4	OW-401B	121	126
LCS 410-565451/2-A	Lab Control Sample	96	92
LCSD 410-565451/3-A	Lab Control Sample Dup	93	90
MB 410-565451/1-A	Method Blank	86	81

Surrogate Legend

DCPAA = DCAA

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 310-436774/5
Matrix: Water
Analysis Batch: 436774

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			10/20/24 00:37	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			10/20/24 00:37	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			10/20/24 00:37	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			10/20/24 00:37	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			10/20/24 00:37	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			10/20/24 00:37	1
1,1-Dichloropropene	<0.430		1.00	0.430	ug/L			10/20/24 00:37	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			10/20/24 00:37	1
1,2,4-Trichlorobenzene	<0.750		5.00	0.750	ug/L			10/20/24 00:37	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			10/20/24 00:37	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			10/20/24 00:37	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			10/20/24 00:37	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			10/20/24 00:37	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			10/20/24 00:37	1
1,3-Dichlorobenzene	<0.300		1.00	0.300	ug/L			10/20/24 00:37	1
1,3-Dichloropropane	<0.400		1.00	0.400	ug/L			10/20/24 00:37	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			10/20/24 00:37	1
2,2-Dichloropropane	<0.690		4.00	0.690	ug/L			10/20/24 00:37	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			10/20/24 00:37	1
2-Hexanone	<2.00		10.0	2.00	ug/L			10/20/24 00:37	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			10/20/24 00:37	1
Acetone	<3.10		10.0	3.10	ug/L			10/20/24 00:37	1
Acrolein	<3.60		10.0	3.60	ug/L			10/20/24 00:37	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			10/20/24 00:37	1
Allyl chloride	<0.700		2.00	0.700	ug/L			10/20/24 00:37	1
Benzene	0.2275	J	0.500	0.220	ug/L			10/20/24 00:37	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			10/20/24 00:37	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			10/20/24 00:37	1
Bromoform	<0.780		5.00	0.780	ug/L			10/20/24 00:37	1
Bromomethane	<1.10		4.00	1.10	ug/L			10/20/24 00:37	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			10/20/24 00:37	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			10/20/24 00:37	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			10/20/24 00:37	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			10/20/24 00:37	1
Chloroethane	<0.790		4.00	0.790	ug/L			10/20/24 00:37	1
Chloroform	<1.30		3.00	1.30	ug/L			10/20/24 00:37	1
Chloromethane	<0.610		3.00	0.610	ug/L			10/20/24 00:37	1
Chloroprene	<0.230		1.00	0.230	ug/L			10/20/24 00:37	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			10/20/24 00:37	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			10/20/24 00:37	1
Dibromomethane	<0.330		1.00	0.330	ug/L			10/20/24 00:37	1
Dichlorodifluoromethane	<0.250		3.00	0.250	ug/L			10/20/24 00:37	1
Ethyl methacrylate	<0.680		2.00	0.680	ug/L			10/20/24 00:37	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			10/20/24 00:37	1
Iodomethane	<7.00		10.0	7.00	ug/L			10/20/24 00:37	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			10/20/24 00:37	1
Methacrylonitrile	<3.30		10.0	3.30	ug/L			10/20/24 00:37	1
Methyl methacrylate	<0.760		2.00	0.760	ug/L			10/20/24 00:37	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-436774/5
Matrix: Water
Analysis Batch: 436774

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylene Chloride	<1.70		5.00	1.70	ug/L			10/20/24 00:37	1
Naphthalene	<3.00		5.00	3.00	ug/L			10/20/24 00:37	1
o-Xylene	<0.400		1.00	0.400	ug/L			10/20/24 00:37	1
Propionitrile	<3.40		10.0	3.40	ug/L			10/20/24 00:37	1
Styrene	<0.370		1.00	0.370	ug/L			10/20/24 00:37	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			10/20/24 00:37	1
Toluene	<0.430		1.00	0.430	ug/L			10/20/24 00:37	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			10/20/24 00:37	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			10/20/24 00:37	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			10/20/24 00:37	1
Trichloroethene	<0.430		1.00	0.430	ug/L			10/20/24 00:37	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			10/20/24 00:37	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			10/20/24 00:37	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			10/20/24 00:37	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			10/20/24 00:37	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*100*		*73 - 130*		*10/20/24 00:37*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*10/20/24 00:37*	*1*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*		*10/20/24 00:37*	*1*

Lab Sample ID: LCS 310-436774/6
Matrix: Water
Analysis Batch: 436774

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	20.0	19.54		ug/L		98	71 - 120
1,1,1-Trichloroethane	20.0	20.69		ug/L		103	73 - 129
1,1,2,2-Tetrachloroethane	20.0	19.00		ug/L		95	68 - 124
1,1,2-Trichloroethane	20.0	19.88		ug/L		99	73 - 123
1,1-Dichloroethane	20.0	20.16		ug/L		101	70 - 127
1,1-Dichloroethene	20.0	20.40		ug/L		102	63 - 132
1,1-Dichloropropene	20.0	20.89		ug/L		104	69 - 132
1,2,3-Trichloropropane	20.0	19.33		ug/L		97	65 - 127
1,2,4-Trichlorobenzene	20.0	20.45		ug/L		102	68 - 124
1,2-Dibromo-3-Chloropropane	20.0	18.08		ug/L		90	50 - 150
1,2-Dibromoethane (EDB)	20.0	20.31		ug/L		102	75 - 125
1,2-Dichlorobenzene	20.0	20.33		ug/L		102	74 - 120
1,2-Dichloroethane	20.0	20.11		ug/L		101	71 - 125
1,2-Dichloropropane	20.0	19.75		ug/L		99	73 - 124
1,3-Dichlorobenzene	20.0	20.30		ug/L		101	72 - 120
1,3-Dichloropropane	20.0	20.10		ug/L		101	72 - 125
1,4-Dichlorobenzene	20.0	20.01		ug/L		100	72 - 120
2,2-Dichloropropane	20.0	19.09		ug/L		95	50 - 150
2-Butanone (MEK)	40.0	35.86		ug/L		90	50 - 150
2-Hexanone	40.0	37.17		ug/L		93	60 - 140
4-Methyl-2-pentanone (MIBK)	40.0	37.34		ug/L		93	60 - 139
Acetone	40.0	36.50		ug/L		91	50 - 150

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-436774/6
Matrix: Water
Analysis Batch: 436774

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Acrolein			95.5	82.60		ug/L		86	49 - 150		
Acrylonitrile			200	190.1		ug/L		95	50 - 150		
Allyl chloride			20.0	19.85		ug/L		99	49 - 150		
Benzene			20.0	20.28		ug/L		101	72 - 124		
Bromochloromethane			20.0	20.66		ug/L		103	73 - 130		
Bromodichloromethane			20.0	19.46		ug/L		97	74 - 122		
Bromoform			20.0	17.84		ug/L		89	61 - 122		
Carbon disulfide			20.0	19.97		ug/L		100	59 - 135		
Carbon tetrachloride			20.0	20.50		ug/L		103	67 - 132		
Chlorobenzene			20.0	20.22		ug/L		101	76 - 120		
Chlorodibromomethane			20.0	18.98		ug/L		95	71 - 121		
Chloroform			20.0	19.31		ug/L		97	72 - 125		
Chloroprene			20.0	20.13		ug/L		101	69 - 133		
cis-1,2-Dichloroethene			20.0	20.24		ug/L		101	74 - 123		
cis-1,3-Dichloropropene			20.0	19.62		ug/L		98	71 - 125		
Dibromomethane			20.0	19.72		ug/L		99	74 - 125		
Ethyl methacrylate			20.0	19.91		ug/L		100	70 - 129		
Ethylbenzene			20.0	20.70		ug/L		103	74 - 122		
Iodomethane			20.0	12.99		ug/L		65	10 - 150		
Methacrylonitrile			200	193.8		ug/L		97	69 - 129		
Methyl methacrylate			40.0	40.03		ug/L		100	68 - 131		
Methylene Chloride			20.0	20.31		ug/L		102	50 - 150		
Naphthalene			20.0	20.66		ug/L		103	50 - 150		
Propionitrile			200	188.8		ug/L		94	63 - 135		
Styrene			20.0	21.01		ug/L		105	74 - 121		
Tetrachloroethene			20.0	21.11		ug/L		106	71 - 130		
Toluene			20.0	20.19		ug/L		101	74 - 123		
trans-1,2-Dichloroethene			20.0	20.46		ug/L		102	70 - 126		
trans-1,3-Dichloropropene			20.0	19.28		ug/L		96	69 - 123		
trans-1,4-Dichloro-2-butene			20.0	16.30		ug/L		81	50 - 150		
Trichloroethene			20.0	20.82		ug/L		104	72 - 126		
Vinyl acetate			40.0	36.81		ug/L		92	50 - 150		
Xylenes, Total			40.0	41.76		ug/L		104	73 - 123		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*101*		*73 - 130*
Toluene-d8 (Surr)	*100*		*80 - 120*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*

Lab Sample ID: LCS 310-436774/7
Matrix: Water
Analysis Batch: 436774

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Bromomethane			20.0	14.11		ug/L		71	23 - 150		
Chloroethane			20.0	18.41		ug/L		92	54 - 136		
Chloromethane			20.0	15.86		ug/L		79	38 - 150		
Dichlorodifluoromethane			20.0	14.75		ug/L		74	39 - 150		

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-436774/7
Matrix: Water
Analysis Batch: 436774

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Trichlorofluoromethane			20.0	20.79		ug/L		104	54 - 149		
Vinyl chloride			20.0	17.63		ug/L		88	56 - 140		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*102*		*73 - 130*
Toluene-d8 (Surr)	*98*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*

Lab Sample ID: MB 310-437419/5
Matrix: Water
Analysis Batch: 437419

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			10/25/24 23:10	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			10/25/24 23:10	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			10/25/24 23:10	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			10/25/24 23:10	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			10/25/24 23:10	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			10/25/24 23:10	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			10/25/24 23:10	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			10/25/24 23:10	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			10/25/24 23:10	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			10/25/24 23:10	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			10/25/24 23:10	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			10/25/24 23:10	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			10/25/24 23:10	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			10/25/24 23:10	1
2-Hexanone	<2.00		10.0	2.00	ug/L			10/25/24 23:10	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			10/25/24 23:10	1
Acetone	<3.10		10.0	3.10	ug/L			10/25/24 23:10	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			10/25/24 23:10	1
Benzene	<0.220		0.500	0.220	ug/L			10/25/24 23:10	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			10/25/24 23:10	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			10/25/24 23:10	1
Bromoform	<0.780		5.00	0.780	ug/L			10/25/24 23:10	1
Bromomethane	<1.10		4.00	1.10	ug/L			10/25/24 23:10	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			10/25/24 23:10	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			10/25/24 23:10	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			10/25/24 23:10	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			10/25/24 23:10	1
Chloroethane	<0.790		4.00	0.790	ug/L			10/25/24 23:10	1
Chloroform	<1.30		3.00	1.30	ug/L			10/25/24 23:10	1
Chloromethane	<0.610		3.00	0.610	ug/L			10/25/24 23:10	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			10/25/24 23:10	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			10/25/24 23:10	1
Dibromomethane	<0.330		1.00	0.330	ug/L			10/25/24 23:10	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			10/25/24 23:10	1
Iodomethane	<7.00		10.0	7.00	ug/L			10/25/24 23:10	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-437419/5
Matrix: Water
Analysis Batch: 437419

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
m,p-Xylene	<0.380		2.00	0.380	ug/L			10/25/24 23:10	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			10/25/24 23:10	1
o-Xylene	<0.400		1.00	0.400	ug/L			10/25/24 23:10	1
Styrene	<0.370		1.00	0.370	ug/L			10/25/24 23:10	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			10/25/24 23:10	1
Toluene	<0.430		1.00	0.430	ug/L			10/25/24 23:10	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			10/25/24 23:10	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			10/25/24 23:10	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			10/25/24 23:10	1
Trichloroethene	<0.430		1.00	0.430	ug/L			10/25/24 23:10	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			10/25/24 23:10	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			10/25/24 23:10	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			10/25/24 23:10	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			10/25/24 23:10	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*100*		*73 - 130*		*10/25/24 23:10*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*10/25/24 23:10*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*10/25/24 23:10*	*1*

Lab Sample ID: LCS 310-437419/6
Matrix: Water
Analysis Batch: 437419

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	20.0	21.20		ug/L		106	71 - 120
1,1,1-Trichloroethane	20.0	21.86		ug/L		109	73 - 129
1,1,2,2-Tetrachloroethane	20.0	20.32		ug/L		102	68 - 124
1,1,2-Trichloroethane	20.0	20.91		ug/L		105	73 - 123
1,1-Dichloroethane	20.0	22.00		ug/L		110	70 - 127
1,1-Dichloroethene	20.0	22.77		ug/L		114	63 - 132
1,2,3-Trichloropropane	20.0	20.45		ug/L		102	65 - 127
1,2-Dibromo-3-Chloropropane	20.0	19.59		ug/L		98	50 - 150
1,2-Dibromoethane (EDB)	20.0	21.10		ug/L		105	75 - 125
1,2-Dichlorobenzene	20.0	21.39		ug/L		107	74 - 120
1,2-Dichloroethane	20.0	19.54		ug/L		98	71 - 125
1,2-Dichloropropane	20.0	21.68		ug/L		108	73 - 124
1,4-Dichlorobenzene	20.0	21.08		ug/L		105	72 - 120
2-Butanone (MEK)	40.0	37.29		ug/L		93	50 - 150
2-Hexanone	40.0	37.70		ug/L		94	60 - 140
4-Methyl-2-pentanone (MIBK)	40.0	39.03		ug/L		98	60 - 139
Acetone	40.0	37.84		ug/L		95	50 - 150
Acrylonitrile	200	209.9		ug/L		105	50 - 150
Benzene	20.0	22.19		ug/L		111	72 - 124
Bromochloromethane	20.0	21.70		ug/L		109	73 - 130
Bromodichloromethane	20.0	21.34		ug/L		107	74 - 122
Bromoform	20.0	20.14		ug/L		101	61 - 122
Carbon disulfide	20.0	22.49		ug/L		112	59 - 135

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-437419/6
Matrix: Water
Analysis Batch: 437419

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Carbon tetrachloride	20.0	22.21		ug/L		111	67 - 132
Chlorobenzene	20.0	21.83		ug/L		109	76 - 120
Chlorodibromomethane	20.0	20.63		ug/L		103	71 - 121
Chloroform	20.0	24.18		ug/L		121	72 - 125
cis-1,2-Dichloroethene	20.0	21.86		ug/L		109	74 - 123
cis-1,3-Dichloropropene	20.0	19.39		ug/L		97	71 - 125
Dibromomethane	20.0	20.78		ug/L		104	74 - 125
Ethylbenzene	20.0	22.25		ug/L		111	74 - 122
Iodomethane	20.0	12.38		ug/L		62	10 - 150
Methylene Chloride	20.0	21.55		ug/L		108	50 - 150
Styrene	20.0	22.23		ug/L		111	74 - 121
Tetrachloroethene	20.0	22.25		ug/L		111	71 - 130
Toluene	20.0	21.58		ug/L		108	74 - 123
trans-1,2-Dichloroethene	20.0	22.14		ug/L		111	70 - 126
trans-1,3-Dichloropropene	20.0	18.85		ug/L		94	69 - 123
trans-1,4-Dichloro-2-butene	20.0	15.15		ug/L		76	50 - 150
Trichloroethene	20.0	22.68		ug/L		113	72 - 126
Vinyl acetate	40.0	35.89		ug/L		90	50 - 150
Xylenes, Total	40.0	44.23		ug/L		111	73 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*99*		*73 - 130*
Toluene-d8 (Surr)	*99*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*

Lab Sample ID: LCS 310-437419/7
Matrix: Water
Analysis Batch: 437419

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	16.43		ug/L		82	23 - 150
Chloroethane	20.0	19.33		ug/L		97	54 - 136
Chloromethane	20.0	20.24		ug/L		101	38 - 150
Trichlorofluoromethane	20.0	21.95		ug/L		110	54 - 149
Vinyl chloride	20.0	20.86		ug/L		104	56 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*101*		*73 - 130*
Toluene-d8 (Surr)	*98*		*80 - 120*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*

Method: 8151A - Herbicides (GC)

Lab Sample ID: MB 410-565451/1-A
Matrix: Water
Analysis Batch: 566062

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 565451

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	<0.250		0.600	0.250	ug/L		10/20/24 20:03	10/22/24 11:19	1
Silvex (2,4,5-TP)	<0.0220		0.0500	0.0220	ug/L		10/20/24 20:03	10/22/24 11:19	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*86*		*34 - 142*	*10/20/24 20:03*	*10/22/24 11:19*	*1*
DCAA	*81*		*34 - 142*	*10/20/24 20:03*	*10/22/24 11:19*	*1*

Lab Sample ID: LCS 410-565451/2-A
Matrix: Water
Analysis Batch: 566062

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 565451

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
2,4-D			2.50	2.505		ug/L		100	53 - 159		
Silvex (2,4,5-TP)			0.250	0.2969		ug/L		119	62 - 170		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCAA	*96*		*34 - 142*
DCAA	*92*		*34 - 142*

Lab Sample ID: LCSD 410-565451/3-A
Matrix: Water
Analysis Batch: 566062

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 565451

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,4-D			2.50	2.481		ug/L		99	53 - 159	1	30
Silvex (2,4,5-TP)			0.250	0.2847		ug/L		114	62 - 170	4	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
DCAA	*93*		*34 - 142*
DCAA	*90*		*34 - 142*

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-436655/1-A
Matrix: Water
Analysis Batch: 437042

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 436655

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		10/18/24 09:30	10/21/24 12:47	1
Arsenic	<0.530		2.00	0.530	ug/L		10/18/24 09:30	10/21/24 12:47	1
Barium	<0.660		2.00	0.660	ug/L		10/18/24 09:30	10/21/24 12:47	1
Cadmium	<0.100		0.200	0.100	ug/L		10/18/24 09:30	10/21/24 12:47	1
Chromium	<1.20		5.00	1.20	ug/L		10/18/24 09:30	10/21/24 12:47	1
Cobalt	<0.170		0.500	0.170	ug/L		10/18/24 09:30	10/21/24 12:47	1
Copper	<1.80		5.00	1.80	ug/L		10/18/24 09:30	10/21/24 12:47	1
Lead	<0.260		0.500	0.260	ug/L		10/18/24 09:30	10/21/24 12:47	1
Selenium	<1.40		5.00	1.40	ug/L		10/18/24 09:30	10/21/24 12:47	1
Silver	<0.500		1.00	0.500	ug/L		10/18/24 09:30	10/21/24 12:47	1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 310-436655/1-A
Matrix: Water
Analysis Batch: 437042

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 436655

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vanadium	<1.10		5.00	1.10	ug/L		10/18/24 09:30	10/21/24 12:47	1
Zinc	<9.70		20.0	9.70	ug/L		10/18/24 09:30	10/21/24 12:47	1

Lab Sample ID: MB 310-436655/1-A
Matrix: Water
Analysis Batch: 437173

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 436655

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Thallium	<0.570		1.00	0.570	ug/L		10/18/24 09:30	10/22/24 20:12	1

Lab Sample ID: MB 310-436655/1-A
Matrix: Water
Analysis Batch: 437341

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 436655

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	<0.330		1.00	0.330	ug/L		10/18/24 09:30	10/23/24 12:32	1
Silver	<0.500		1.00	0.500	ug/L		10/18/24 09:30	10/23/24 12:32	1

Lab Sample ID: MB 310-436655/1-A
Matrix: Water
Analysis Batch: 438021

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 436655

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nickel	<2.10		5.00	2.10	ug/L		10/18/24 09:30	10/29/24 18:22	1

Lab Sample ID: LCS 310-436655/2-A
Matrix: Water
Analysis Batch: 437042

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 436655

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	200	197.6		ug/L		99	80 - 120
Arsenic	200	203.8		ug/L		102	80 - 120
Barium	100	97.54		ug/L		98	80 - 120
Cadmium	100	95.01		ug/L		95	80 - 120
Chromium	100	95.61		ug/L		96	80 - 120
Cobalt	100	96.39		ug/L		96	80 - 120
Copper	200	190.8		ug/L		95	80 - 120
Lead	200	194.7		ug/L		97	80 - 120
Selenium	400	356.1		ug/L		89	80 - 120
Silver	100	102.6		ug/L		103	80 - 120
Vanadium	100	92.98		ug/L		93	80 - 120
Zinc	200	189.7		ug/L		95	80 - 120

Lab Sample ID: LCS 310-436655/2-A
Matrix: Water
Analysis Batch: 437173

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 436655

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Thallium	100	83.66		ug/L		84	80 - 120

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 310-436655/2-A
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 437341
Prep Batch: 436655

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Beryllium	100	94.12		ug/L		94	80 - 120

Lab Sample ID: LCS 310-436655/2-A
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 438021
Prep Batch: 436655

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nickel	200	192.2		ug/L		96	80 - 120

Method: 9034 - Sulfide, Acid soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 240-631459/1-A
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 631483
Prep Batch: 631459

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.41		3.00	1.41	mg/L		10/18/24 10:08	10/18/24 11:49	1

Lab Sample ID: LCS 240-631459/2-A
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 631483
Prep Batch: 631459

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfide	6.80	5.333		mg/L		78	70 - 120

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: MB 310-436606/1
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 436606

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<3.70		5.00	3.70	mg/L			10/17/24 11:55	1

Lab Sample ID: LCS 310-436606/2
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 436606

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	108.0		mg/L		108	81 - 116

Lab Sample ID: MB 310-436687/1
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 436687

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<3.70		5.00	3.70	mg/L			10/18/24 07:11	1

Method: I-3765-85 - Residue, Non-filterable (TSS) (Continued)

Lab Sample ID: LCS 310-436687/2
Matrix: Water
Analysis Batch: 436687

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Suspended Solids			100	101.0		mg/L		101	81 - 116		

Lab Sample ID: 310-292919-5 DU
Matrix: Water
Analysis Batch: 436687

Client Sample ID: Duplicate #3
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Suspended Solids	61.0			59.00		mg/L				3	35

GC/MS VOA

Analysis Batch: 436774

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292919-1	MW-319B	Total/NA	Water	8260D	
310-292919-2	MW-320B	Total/NA	Water	8260D	
310-292919-3	Trip Blank	Total/NA	Water	8260D	
310-292919-4	OW-401B	Total/NA	Water	8260D	
310-292919-5	Duplicate #3	Total/NA	Water	8260D	
MB 310-436774/5	Method Blank	Total/NA	Water	8260D	
LCS 310-436774/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-436774/7	Lab Control Sample	Total/NA	Water	8260D	

Analysis Batch: 437419

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292919-1	MW-319B	Total/NA	Water	8260D	
310-292919-2	MW-320B	Total/NA	Water	8260D	
310-292919-4	OW-401B	Total/NA	Water	8260D	
310-292919-5	Duplicate #3	Total/NA	Water	8260D	
MB 310-437419/5	Method Blank	Total/NA	Water	8260D	
LCS 310-437419/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-437419/7	Lab Control Sample	Total/NA	Water	8260D	

GC Semi VOA

Prep Batch: 436739

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292919-4	OW-401B	Total/NA	Water	3511	

Analysis Batch: 436901

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292919-4	OW-401B	Total/NA	Water	8081B	436739

Prep Batch: 565451

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292919-4	OW-401B	Total/NA	Water	8151A	
MB 410-565451/1-A	Method Blank	Total/NA	Water	8151A	
LCS 410-565451/2-A	Lab Control Sample	Total/NA	Water	8151A	
LCSD 410-565451/3-A	Lab Control Sample Dup	Total/NA	Water	8151A	

Analysis Batch: 566062

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292919-4	OW-401B	Total/NA	Water	8151A	565451
MB 410-565451/1-A	Method Blank	Total/NA	Water	8151A	565451
LCS 410-565451/2-A	Lab Control Sample	Total/NA	Water	8151A	565451
LCSD 410-565451/3-A	Lab Control Sample Dup	Total/NA	Water	8151A	565451

Metals

Prep Batch: 436655

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292919-1	MW-319B	Total/NA	Water	3005A	
310-292919-2	MW-320B	Total/NA	Water	3005A	
310-292919-4	OW-401B	Total/NA	Water	3005A	
310-292919-5	Duplicate #3	Total/NA	Water	3005A	
MB 310-436655/1-A	Method Blank	Total/NA	Water	3005A	

Metals (Continued)

Prep Batch: 436655 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 310-436655/2-A	Lab Control Sample	Total/NA	Water	3005A	

Analysis Batch: 437042

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292919-1	MW-319B	Total/NA	Water	6020B	436655
310-292919-2	MW-320B	Total/NA	Water	6020B	436655
310-292919-4	OW-401B	Total/NA	Water	6020B	436655
310-292919-5	Duplicate #3	Total/NA	Water	6020B	436655
MB 310-436655/1-A	Method Blank	Total/NA	Water	6020B	436655
LCS 310-436655/2-A	Lab Control Sample	Total/NA	Water	6020B	436655

Analysis Batch: 437173

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292919-1	MW-319B	Total/NA	Water	6020B	436655
MB 310-436655/1-A	Method Blank	Total/NA	Water	6020B	436655
LCS 310-436655/2-A	Lab Control Sample	Total/NA	Water	6020B	436655

Analysis Batch: 437341

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 310-436655/1-A	Method Blank	Total/NA	Water	6020B	436655
LCS 310-436655/2-A	Lab Control Sample	Total/NA	Water	6020B	436655

Analysis Batch: 438021

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292919-1	MW-319B	Total/NA	Water	6020B	436655
310-292919-2	MW-320B	Total/NA	Water	6020B	436655
310-292919-4	OW-401B	Total/NA	Water	6020B	436655
310-292919-5	Duplicate #3	Total/NA	Water	6020B	436655
MB 310-436655/1-A	Method Blank	Total/NA	Water	6020B	436655
LCS 310-436655/2-A	Lab Control Sample	Total/NA	Water	6020B	436655

Analysis Batch: 438161

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292919-1	MW-319B	Total/NA	Water	6020B	436655
310-292919-2	MW-320B	Total/NA	Water	6020B	436655
310-292919-4	OW-401B	Total/NA	Water	6020B	436655
310-292919-5	Duplicate #3	Total/NA	Water	6020B	436655

General Chemistry

Analysis Batch: 436606

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292919-2	MW-320B	Total/NA	Water	I-3765-85	
310-292919-4	OW-401B	Total/NA	Water	I-3765-85	
MB 310-436606/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-436606/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Analysis Batch: 436687

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292919-1	MW-319B	Total/NA	Water	I-3765-85	
310-292919-5	Duplicate #3	Total/NA	Water	I-3765-85	

General Chemistry (Continued)

Analysis Batch: 436687 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 310-436687/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-436687/2	Lab Control Sample	Total/NA	Water	I-3765-85	
310-292919-5 DU	Duplicate #3	Total/NA	Water	I-3765-85	

Prep Batch: 631459

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292919-4	OW-401B	Total/NA	Water	9030B	
MB 240-631459/1-A	Method Blank	Total/NA	Water	9030B	
LCS 240-631459/2-A	Lab Control Sample	Total/NA	Water	9030B	

Analysis Batch: 631483

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292919-4	OW-401B	Total/NA	Water	9034	631459
MB 240-631459/1-A	Method Blank	Total/NA	Water	9034	631459
LCS 240-631459/2-A	Lab Control Sample	Total/NA	Water	9034	631459

Field Service / Mobile Lab

Analysis Batch: 436597

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292919-1	MW-319B	Total/NA	Water	Field Sampling	
310-292919-2	MW-320B	Total/NA	Water	Field Sampling	
310-292919-4	OW-401B	Total/NA	Water	Field Sampling	

Lab Chronicle

Client: AECOM
Job ID: 310-292919-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: MW-319B
Lab Sample ID: 310-292919-1
Date Collected: 10/15/24 10:15
Matrix: Water
Date Received: 10/16/24 11:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	436774	FE5V	EET CF	10/20/24 07:49
Total/NA	Analysis	8260D		1	437419	FE5V	EET CF	10/26/24 03:21
Total/NA	Prep	3005A			436655	F5MW	EET CF	10/18/24 09:30
Total/NA	Analysis	6020B		1	437042	A6US	EET CF	10/21/24 13:13
Total/NA	Prep	3005A			436655	F5MW	EET CF	10/18/24 09:30
Total/NA	Analysis	6020B		1	438021	NFT2	EET CF	10/29/24 18:45
Total/NA	Prep	3005A			436655	F5MW	EET CF	10/18/24 09:30
Total/NA	Analysis	6020B		1	437173	A6US	EET CF	10/22/24 20:26
Total/NA	Prep	3005A			436655	F5MW	EET CF	10/18/24 09:30
Total/NA	Analysis	6020B		1	438161	A6US	EET CF	10/30/24 16:00
Total/NA	Analysis	I-3765-85		1	436687	DGU1	EET CF	10/18/24 07:11
Total/NA	Analysis	Field Sampling		1	436597	BJ0R	EET CF	10/15/24 10:15

Client Sample ID: MW-320B
Lab Sample ID: 310-292919-2
Date Collected: 10/15/24 10:45
Matrix: Water
Date Received: 10/16/24 11:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	436774	FE5V	EET CF	10/20/24 08:12
Total/NA	Analysis	8260D		1	437419	FE5V	EET CF	10/26/24 03:43
Total/NA	Prep	3005A			436655	F5MW	EET CF	10/18/24 09:30
Total/NA	Analysis	6020B		1	437042	A6US	EET CF	10/21/24 13:17
Total/NA	Prep	3005A			436655	F5MW	EET CF	10/18/24 09:30
Total/NA	Analysis	6020B		1	438021	NFT2	EET CF	10/29/24 18:49
Total/NA	Prep	3005A			436655	F5MW	EET CF	10/18/24 09:30
Total/NA	Analysis	6020B		1	438161	A6US	EET CF	10/30/24 16:03
Total/NA	Analysis	I-3765-85		1	436606	DGU1	EET CF	10/17/24 11:55
Total/NA	Analysis	Field Sampling		1	436597	BJ0R	EET CF	10/15/24 10:45

Client Sample ID: Trip Blank
Lab Sample ID: 310-292919-3
Date Collected: 10/15/24 06:00
Matrix: Water
Date Received: 10/16/24 11:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	436774	FE5V	EET CF	10/20/24 03:38

Client Sample ID: OW-401B
Lab Sample ID: 310-292919-4
Date Collected: 10/15/24 14:00
Matrix: Water
Date Received: 10/16/24 11:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	436774	FE5V	EET CF	10/20/24 08:35
Total/NA	Analysis	8260D		1	437419	FE5V	EET CF	10/26/24 04:06

Lab Chronicle

Client: AECOM
Job ID: 310-292919-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-401B
Lab Sample ID: 310-292919-4
Date Collected: 10/15/24 14:00
Matrix: Water
Date Received: 10/16/24 11:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3511			436739	BW2O	EET CF	10/18/24 10:02
Total/NA	Analysis	8081B		1	436901	BW2O	EET CF	10/21/24 11:41
Total/NA	Prep	8151A			565451	UKL2	ELLE	10/20/24 20:03
Total/NA	Analysis	8151A		10	566062	UAMZ	ELLE	10/22/24 14:08
Total/NA	Prep	3005A			436655	F5MW	EET CF	10/18/24 09:30
Total/NA	Analysis	6020B		1	437042	A6US	EET CF	10/21/24 13:21
Total/NA	Prep	3005A			436655	F5MW	EET CF	10/18/24 09:30
Total/NA	Analysis	6020B		1	438021	NFT2	EET CF	10/29/24 18:52
Total/NA	Prep	3005A			436655	F5MW	EET CF	10/18/24 09:30
Total/NA	Analysis	6020B		1	438161	A6US	EET CF	10/30/24 16:06
Total/NA	Prep	9030B			631459	PQD2	EET CLE	10/18/24 10:08
Total/NA	Analysis	9034		1	631483	PQD2	EET CLE	10/18/24 11:49
Total/NA	Analysis	I-3765-85		1	436606	DGU1	EET CF	10/17/24 11:55
Total/NA	Analysis	Field Sampling		1	436597	BJ0R	EET CF	10/15/24 14:00

Client Sample ID: Duplicate #3
Lab Sample ID: 310-292919-5
Date Collected: 10/15/24 00:00
Matrix: Water
Date Received: 10/16/24 11:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	436774	FE5V	EET CF	10/20/24 08:58
Total/NA	Analysis	8260D		1	437419	FE5V	EET CF	10/26/24 04:29
Total/NA	Prep	3005A			436655	F5MW	EET CF	10/18/24 09:30
Total/NA	Analysis	6020B		1	437042	A6US	EET CF	10/21/24 13:39
Total/NA	Prep	3005A			436655	F5MW	EET CF	10/18/24 09:30
Total/NA	Analysis	6020B		1	438021	NFT2	EET CF	10/29/24 18:56
Total/NA	Prep	3005A			436655	F5MW	EET CF	10/18/24 09:30
Total/NA	Analysis	6020B		1	438161	A6US	EET CF	10/30/24 16:09
Total/NA	Analysis	I-3765-85		1	436687	DGU1	EET CF	10/18/24 07:11

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: AECOM
Job ID: 310-292919-1
Project/Site: Black Hawk County Landfill (IDNR)

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8260D		Water	1,2,4-Trichlorobenzene
8260D		Water	Allyl chloride
8260D		Water	Ethyl methacrylate
8260D		Water	m,p-Xylene
8260D		Water	o-Xylene
Field Sampling		Water	Field Turbidity

Laboratory: Eurofins Cleveland

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Iowa	State	421	06-01-25

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Iowa	State	361	03-01-26

Method Summary

Client: AECOM
Job ID: 310-292919-1
Project/Site: Black Hawk County Landfill (IDNR)

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CF
8081B	Organochlorine Pesticides (GC)	SW846	EET CF
8151A	Herbicides (GC)	SW846	ELLE
6020B	Metals (ICP/MS)	SW846	EET CF
9034	Sulfide, Acid soluble and Insoluble (Titrimetric)	SW846	EET CLE
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
Field Sampling	Field Sampling	EPA	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
3511	Microextraction of Organic Compounds	SW846	EET CF
5030B	Purge and Trap	SW846	EET CF
8151A	Extraction (Herbicides)	SW846	ELLE
9030B	Sulfide, Distillation (Acid Soluble and Insoluble)	SW846	EET CLE

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

eurofins | Environment Testing America

310-292919 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: AECOM

City/State: CITY Waterloo | STATE IA | Project:

Receipt Information

Date/Time Received: DATE 10/16/24 | TIME 1125 | Received By: PH

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☐ Lab Courier ☐ Lab Field Services ☑ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☑ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☐ Yes ☑ No *If yes:* Cooler # _____ of _____

Cooler Custody Seals Present? ☐ Yes ☑ No *If yes:* Cooler custody seals intact? ☐ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☑ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☑ Yes ☐ No *If yes:* Which VOA samples are in cooler? ↓

All

Temperature Record

Coolant: ☑ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: P | Correction Factor (°C): 0

• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 2.1 | Corrected Temp (°C): 2.1

• Sample Container Temperature

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

Eurofins Cedar Falls
3019 Venture Way

Cedar Falls, IA 50613
phone 319.277.2401 fax 319.277 2425

Chain of Custody Record

eurofins Environment Testing America

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other IDNR

Eurofins Environment Testing America

Client Contact	**Project Manager: Chris Oelkers**	COC No
AECOM	Email Christopher Oelkers@aecom.com	**Site Contact:** / **Date:** 10-16-24	1 of 2 COCs
501 Sycamore Street, Suite 222	**Tel/Fax:319-296-6878**	**Lab Contact:** / **Carrier:**	TALS Project #
Waterloo, IA 50703	**Analysis Turnaround Time** ☑ CALENDAR DAYS ☐ WORKING DAYS		Sampler
(319) 232-6531 Phone	TAT if different from Below ☑ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day		**For Lab Use Only:** Walk-in Client / Lab Sampling
(xxx) xxx-xxxx FAX			
Project Name Black Hawk Co IDNR			Job / SDG No
Site Black Hawk County Landfill			
P O #			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Appendix I, TSS	Appendix II, TSS	2,4-D	4,4'-DDD	beta-BHC	delta BHC	Endosulfan I	Endosulfan sulfate	Endrin aldehyde	Silvex	Sulfide	Sample Specific Notes
OW-220B			G	GW		N		X		X							X		
OW-221B			G	GW		N		X											
OW-222B			G	GW		N		X											
OW-223B			G	GW		N		X											
OW-223B-FD			G	GW		N		X											
OW-224B			G	GW		N			X										
OW-225B			G	GW		N			X										
OW-226B			G	GW		N			X										
OW-227B			G	GW		N			X										
MW-319B	10-15-24	1015	G	GW	5	N		X											Turbidity - 1.94 NTU
MW-320B	10-15-24	1045	G	GW	5	N		X											Turbidity - 10.84 NTU
Equipment Blank-1			G	GW		N		X											
Trip Blank	10-15-24	0600	G	W	3	N		X											

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No | Cooler Temp (°C) Obs'd. _____ Corr'd _____ Therm ID No. _____

Relinquished by: Ben Porter	Company: Aecom	Date/Time 10-16-24	Received by:	Company:	Date/Time 10/16/24 1125
Relinquished by:	Company:	Date/Time	Received by:	Company:	Date/Time
Relinquished by:	Company:	Date/Time	Received in Laboratory by:	Company:	Date/Time

Eurofins Cedar Falls
3019 Venture Way

Cedar Falls, IA 50613
phone 319.277.2401 fax 319.277 2425

Chain of Custody Record

eurofins Environment Testing America

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other IDNR

Eurofins Environment Testing America

Client Contact	Project Manager: Chris Oelkers	Site Contact:	Date: 10-16-24	COC No
AECOM	Email Christopher Oelkers@aecom.com	Lab Contact:	Carrier:	2 of 2 COCs
501 Sycamore Street, Suite 222	Tel/Fax:319-296-6878			TALS Project #
Waterloo, IA 50703	Analysis Turnaround Time			Sampler
(319) 232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(xxx) xxx-xxxx FAX	TAT if different from Below			Walk-in Client.
Project Name Black Hawk Co IDNR	☑ 2 weeks			Lab Sampling
Site Black Hawk County Landfill	☐ 1 week			Job / SDG No
P O #	☐ 2 days ☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Appendix I, TSS	Appendix II, TSS	2,4-D	4,4'-DDD	beta-BHC	delta BHC	Endosulfan I	Endosulfan sulfate	Endrin aldehyde	Silvex	Sulfide	2,4,5-T	Bis(2-ethylhexyl)phthalate					Sample Specific Notes
OW-401B	10-15-24	1400	G	GW	10	N		X		X		X	X		X	X	X	X							Turbidity - 8.38 NTU
OW-402B			G	GW		N		X		X		X			X		X	X	X	X					
MW-409B			G	GW		N		X																	
MW-409B-FD			G	GW		N		X																	
OW-413B			G	GW		N		X																	
MW-501B			G	GW		N		X																	
MW-602B			G	GW		N		X																	
Duplicate #3	10-15-24	—	G	GW	5	N		X																	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No	Cooler Temp (°C) Obs'd._____ Corr'd._____ Therm ID No._____			
Relinquished by: Ben Porter	Company: Aecom	Date/Time: 10-16-24	Received by:	Company:	Date/Time: 10/16/24 1125
Relinquished by:	Company:	Date/Time	Received by:	Company:	Date/Time
Relinquished by:	Company:	Date/Time	Received in Laboratory by:	Company:	Date/Time

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone: 319-277-2401 Fax: 319-277-2425

Chain of Custody Record

5.1/5.1

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Bindert, Zach T	Carrier Tracking No(s):	COC No: 310-77408.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Zach.Bindert@et.eurofinsus.com	State of Origin: Iowa	Page: Page 1 of 1
Company: Eurofins Environment Testing North Centr		Accreditations Required (See note): State - Iowa; State Program - Iowa		Job #: 310-292919-1
Address: 180 S. Van Buren Avenue, ,	Due Date Requested: 10/29/2024			
City: Barberton	TAT Requested (days):			
State, Zip: OH, 44203				
Phone: 330-497-9396(Tel) 330-497-0772(Fax)	PO #:			
Email:	WO #:			
Project Name: Black Hawk County Landfill (IDNR)	Project #: 31017149			
Site: 310 - Black Hawk County (IDNR)	SSOW#:			

Analysis Requested

Preservation Codes: -

Other:

G109

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9034_Calc/9030B Sulfide	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
OW-401B (310-292919-4)	10/15/24	14:00 Central	G	Water			X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing North Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing North Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing North Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing North Central, LLC.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	10/16/24 1745		JMOROSKO	10/17/24 1000	TAL
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ∆ Yes ∆ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Eurofins – Cleveland Sample Receipt Form/Narrative Login # :
Barberton Facility

Client Eurofins Cedar Falls Site Name

Cooler unpacked by: JMOROSKO

Cooler Received on 10/17/24 Opened on 10/17/24

FedEx: 1st Grd (Exp) UPS FAS Waypoint Client Drop Off Eurofins Courier Other

Receipt After-hours Drop-off Date/Time Storage Location

Eurofins Cooler # FC Foam Box Client Cooler Box Other

Packing material used. (Bubble Wrap) Foam Plastic Bag None Other

COOLANT: (Wet Ice) Blue Ice Dry Ice Water None

1 Cooler temperature upon receipt ☐ See Multiple Cooler Form

IR GUN # 24 (CF +0.0 °C) Observed Cooler Temp. 5.5 °C Corrected Cooler Temp 5.1 °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1	(Yes)	No
-Were the seals on the outside of the cooler(s) signed & dated?	(Yes)	No NA
-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)?	Yes	(No)
-Were tamper/custody seals intact and uncompromised?	(Yes)	No NA
3 Shippers' packing slip attached to the cooler(s)?	(Yes)	No
4. Did custody papers accompany the sample(s)?	(Yes)	No
5 Were the custody papers relinquished & signed in the appropriate place?	(Yes)	No
6. Was/were the person(s) who collected the samples clearly identified on the COC? JMO 10/17	Yes	(No)
7 Did all bottles arrive in good condition (Unbroken)?	(Yes)	No
8 Could all bottle labels (ID/Date/Time) be reconciled with the COC?	(Yes)	No
9 For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)?	(Y)	(Y) (Y)
10 Were correct bottle(s) used for the test(s) indicated?	(Yes)	No
11 Sufficient quantity received to perform indicated analyses?	(Yes)	No
12. Are these work share samples and all listed on the COC?	(Yes)	No
If yes, Questions 13-17 have been checked at the originating laboratory		
13 Were all preserved sample(s) at the correct pH upon receipt?	Yes	No NA pH Strip Lot# ~~HC447997~~
14 Were VOAs on the COC?	Yes	(No)
15 Were air bubbles >6 mm in any VOA vials? ● ⬅ Larger than this.	Yes	(No) NA
16 Was a VOA trip blank present in the cooler(s)? Trip Blank Lot #	Yes	(No)
17 Was a LL Hg or Me Hg trip blank present?	Yes	(No)

Tests that are not checked for pH by Receiving:
VOAs
Oil and Grease
TOC

Contacted PM Date by via Verbal Voice Mail Other

Concerning

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES ☐ additional next page

Samples processed by:

19. SAMPLE CONDITION

Sample(s) were received after the recommended holding time had expired

Sample(s) were received in a broken container

Sample(s) were received with bubble >6 mm in diameter (Notify PM)

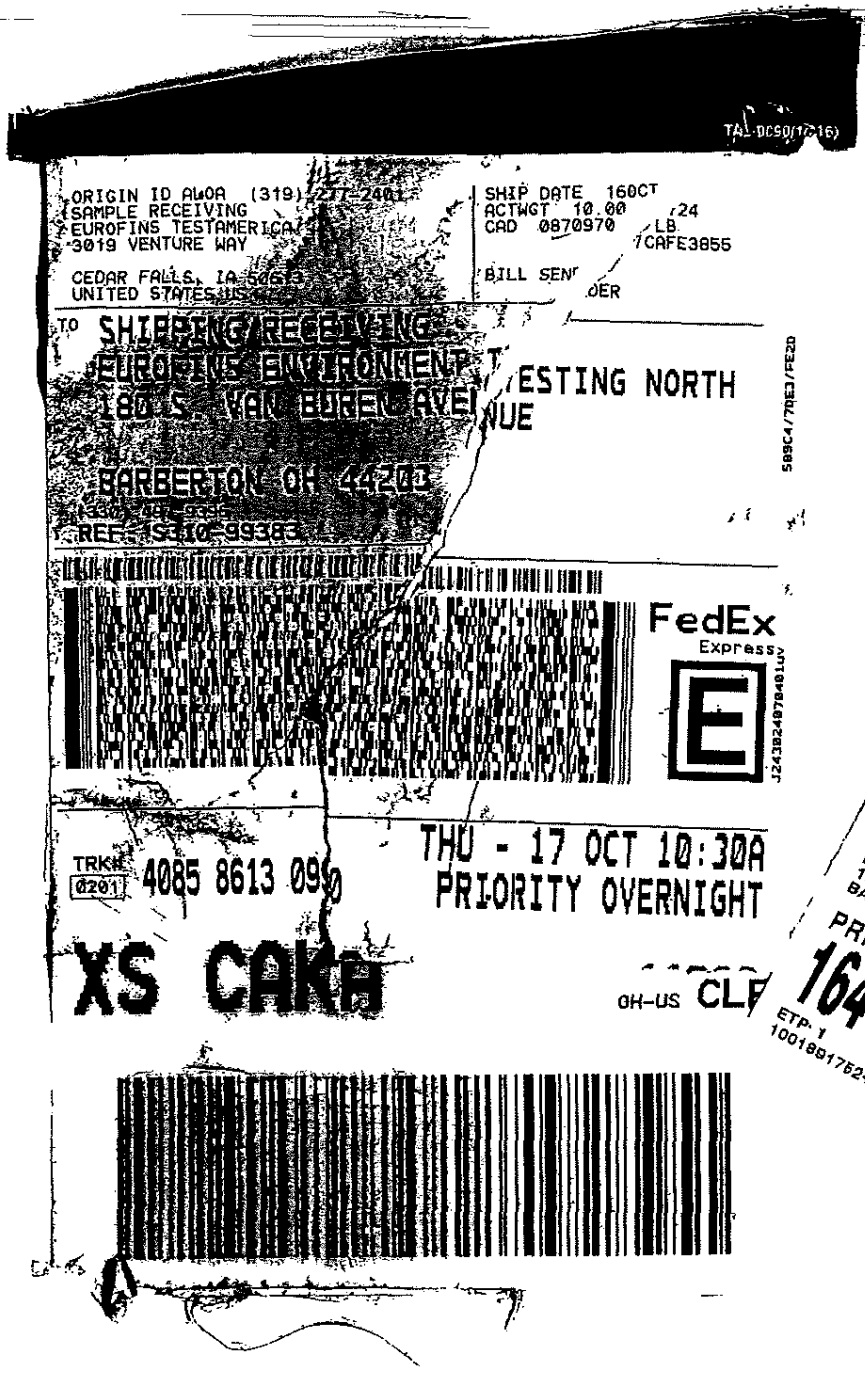
20. SAMPLE PRESERVATION

Sample(s) were further preserved in the laboratory

Time preserved. Preservative(s) added/Lot number(s)

VOA Sample Preservation - Date/Time VOAs Frozen.

TAL-DC90(1/16)



ORIGIN ID AWOA (319) 277-2401
SAMPLE RECEIVING
EUROFINS TESTAMERICA
3019 VENTURE WAY

CEDAR FALLS, IA 50613
UNITED STATES US

SHIP DATE 16OCT
ACTWGT 10.00 /24
CAD 0870970 LB
7CAFE3855

BILL SEN DER

TO SHIPPING/RECEIVING
EUROFINS ENVIRONMENT T ESTING NORTH
180 S. VAN BUREN AVE NUE

BARBERTON OH 44203
(330) 497-9396
REF: S310-99383

589C4/70E3/FE2D

FedEx
Express

E

J243024078401UV

TRK# 0201 4085 8613 090

THU - 17 OCT 10:30A
PRIORITY OVERNIGHT

XS CAKA

OH-US CLE

4450 THU 10/17 08:53 327750
EUROFINS ENVIRONMENT TESTING NORTH
180 S VAN BUREN AVE
BARBERTON OH 44203-3543-80
PRIORITY OVERNIGHT
164-7022
ETP: 1
SP:PD:100:Y
1001891752410004420300408586130990

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone: 319-277-2401 Fax: 319-277-2425

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Bindert, Zach T	Carrier Tracking No(s):	COC No: 310-77403.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Zach.Bindert@et.eurofinsus.com	State of Origin: Iowa	Page: Page 1 of 1
Company: Eurofins Lancaster Laboratories Environm		Accreditations Required (See note): State - Iowa; State Program - Iowa		Job #: 310-292919-1
Address: 2425 New Holland Pike, ,	Due Date Requested: 10/29/2024			
City: Lancaster	TAT Requested (days):			
State, Zip: PA, 17601				
Phone: 717-656-2300(Tel)	PO #:			
Email:	WO #:			
Project Name: Black Hawk County Landfill (IDNR)	Project #: 31017149			
Site: 310 - Black Hawk County (IDNR)	SSOW#:			

Analysis Requested

Preservation Codes:

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8151A/8151A_AP 2,4-D and Silvex	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
OW-401B (310-292919-4)	10/15/24	14:00 Central	G	Water			X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing North Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing North Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing North Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing North Central, LLC.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1		10/16/24 1255				
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by: Debra A. Beyer	Date/Time: 10-17-24 10:30	Company: ELLET

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 2: 1.6 C: 1.4

HM

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-292919-1

Login Number: 292919

List Number: 1

Creator: Hirsch, Preston

List Source: Eurofins Cedar Falls

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-292919-1

Login Number: 292919
List Number: 2
Creator: Arroyo, Haley

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC
List Creation: 10/17/24 11:41 AM

Question	Answer	Comment
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature acceptable,where thermal pres is required(</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV:Container Temp acceptable,where thermal pres is required (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
Sample custody seals are intact.	N/A	
VOA sample vials do not have headspace >6mm in diameter (none, if from WV)?	N/A	

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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

ANALYTICAL REPORT

PREPARED FOR

Attn: Chris Oelkers
AECOM
501 Sycamore Street
Suite #222
Waterloo, Iowa 50703

Generated 11/4/2024 2:55:42 PM

JOB DESCRIPTION

Black Hawk County Landfill (IDNR)
Fall 2024

JOB NUMBER

310-293059-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

my EOL

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



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Authorized for release by
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Job ID: 310-293059-1 — Eurofins Cedar Falls

Job Narrative
310-293059-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 10/17/2024 1:05 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.6°C.

GC/MS VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC/MS Semi VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Herbicides
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Pesticides
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Field Service / Mobile Lab
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Sample Summary

Client: AECOM
Job ID: 310-293059-1
Project/Site: Black Hawk County Landfill (IDNR)

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-293059-1	OW-402B	Water	10/16/24 09:30	10/17/24 13:05
310-293059-2	OW-413B	Water	10/16/24 12:00	10/17/24 13:05
310-293059-3	Trip Blanks	Water	10/16/24 06:00	10/17/24 13:05

Detection Summary

Client: AECOM
Job ID: 310-293059-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-402B — Lab Sample ID: 310-293059-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	0.425	J	1.00	0.220	ug/L	1		8260D	Total/NA
1,2-Dichloropropane	0.296	J	1.00	0.270	ug/L	1		8260D	Total/NA
1,4-Dichlorobenzene	0.591	J	1.00	0.230	ug/L	1		8260D	Total/NA
Benzene	0.947		0.500	0.220	ug/L	1		8260D	Total/NA
Chloroethane	0.809	J	4.00	0.790	ug/L	1		8260D	Total/NA
cis-1,2-Dichloroethene	10.4		1.00	0.210	ug/L	1		8260D	Total/NA
trans-1,2-Dichloroethene	0.605	J	1.00	0.270	ug/L	1		8260D	Total/NA
Vinyl chloride	1.55		1.00	0.180	ug/L	1		8260D	Total/NA
Bis(2-ethylhexyl) phthalate	6.98	J	10.4	5.73	ug/L	1		8270E	Total/NA
Silvex (2,4,5-TP)	0.889		0.559	0.246	ug/L	10		8151A	Total/NA
Arsenic	0.841	J	2.00	0.530	ug/L	1		6020B	Total/NA
Barium	988		2.00	0.660	ug/L	1		6020B	Total/NA
Cadmium	0.514		0.200	0.100	ug/L	1		6020B	Total/NA
Chromium	8.64		5.00	1.20	ug/L	1		6020B	Total/NA
Cobalt	7.99		0.500	0.170	ug/L	1		6020B	Total/NA
Copper	3.87	J	5.00	1.80	ug/L	1		6020B	Total/NA
Nickel	353		5.00	2.10	ug/L	1		6020B	Total/NA
Silver	0.645	J	1.00	0.500	ug/L	1		6020B	Total/NA
Total Suspended Solids	7.13		1.88	1.39	mg/L	1		I-3765-85	Total/NA
Field Turbidity	0.76				NTU	1		Field Sampling	Total/NA

Client Sample ID: OW-413B — Lab Sample ID: 310-293059-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	0.255	J	1.00	0.220	ug/L	1		8260D	Total/NA
Benzene	1.90		0.500	0.220	ug/L	1		8260D	Total/NA
Chloroethane	0.893	J	4.00	0.790	ug/L	1		8260D	Total/NA
cis-1,2-Dichloroethene	0.755	J	1.00	0.210	ug/L	1		8260D	Total/NA
Arsenic	6.37		2.00	0.530	ug/L	1		6020B	Total/NA
Barium	544		2.00	0.660	ug/L	1		6020B	Total/NA
Chromium	2.65	J	5.00	1.20	ug/L	1		6020B	Total/NA
Cobalt	2.82		0.500	0.170	ug/L	1		6020B	Total/NA
Lead	0.286	J	0.500	0.260	ug/L	1		6020B	Total/NA
Nickel	5.01		5.00	2.10	ug/L	1		6020B	Total/NA
Vanadium	3.51	J	5.00	1.10	ug/L	1		6020B	Total/NA
Total Suspended Solids	75.0		15.0	11.1	mg/L	1		I-3765-85	Total/NA
Field Turbidity	25.27				NTU	1		Field Sampling	Total/NA

Client Sample ID: Trip Blanks — Lab Sample ID: 310-293059-3

No Detections.

This Detection Summary does not include radiochemical test results.

Client: AECOM
Job ID: 310-293059-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-402B
Lab Sample ID: 310-293059-1
Date Collected: 10/16/24 09:30
Matrix: Water
Date Received: 10/17/24 13:05

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			10/23/24 11:19	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			10/23/24 11:19	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			10/23/24 11:19	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			10/23/24 11:19	1
1,1-Dichloroethane	**0.425**	**J**	1.00	0.220	ug/L			10/23/24 11:19	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			10/23/24 11:19	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			10/23/24 11:19	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			10/23/24 11:19	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			10/23/24 11:19	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			10/23/24 11:19	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			10/23/24 11:19	1
1,2-Dichloropropane	**0.296**	**J**	1.00	0.270	ug/L			10/23/24 11:19	1
1,4-Dichlorobenzene	**0.591**	**J**	1.00	0.230	ug/L			10/23/24 11:19	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			10/23/24 11:19	1
2-Hexanone	<2.00		10.0	2.00	ug/L			10/23/24 11:19	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			10/23/24 11:19	1
Acetone	<3.10		10.0	3.10	ug/L			10/23/24 11:19	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			10/23/24 11:19	1
Benzene	**0.947**		0.500	0.220	ug/L			10/23/24 11:19	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			10/23/24 11:19	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			10/23/24 11:19	1
Bromoform	<0.780		5.00	0.780	ug/L			10/23/24 11:19	1
Bromomethane	<1.10		4.00	1.10	ug/L			10/23/24 11:19	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			10/23/24 11:19	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			10/23/24 11:19	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			10/23/24 11:19	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			10/23/24 11:19	1
Chloroethane	**0.809**	**J**	4.00	0.790	ug/L			10/23/24 11:19	1
Chloroform	<1.30		3.00	1.30	ug/L			10/23/24 11:19	1
Chloromethane	<0.610		3.00	0.610	ug/L			10/23/24 11:19	1
cis-1,2-Dichloroethene	**10.4**		1.00	0.210	ug/L			10/23/24 11:19	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			10/23/24 11:19	1
Dibromomethane	<0.330		1.00	0.330	ug/L			10/23/24 11:19	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			10/23/24 11:19	1
Iodomethane	<7.00		10.0	7.00	ug/L			10/23/24 11:19	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			10/23/24 11:19	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			10/23/24 11:19	1
o-Xylene	<0.400		1.00	0.400	ug/L			10/23/24 11:19	1
Styrene	<0.370		1.00	0.370	ug/L			10/23/24 11:19	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			10/23/24 11:19	1
Toluene	<0.430		1.00	0.430	ug/L			10/23/24 11:19	1
trans-1,2-Dichloroethene	**0.605**	**J**	1.00	0.270	ug/L			10/23/24 11:19	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			10/23/24 11:19	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			10/23/24 11:19	1
Trichloroethene	<0.430		1.00	0.430	ug/L			10/23/24 11:19	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			10/23/24 11:19	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			10/23/24 11:19	1
Vinyl chloride	**1.55**		1.00	0.180	ug/L			10/23/24 11:19	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			10/23/24 11:19	1

Client Sample ID: OW-402B
Lab Sample ID: 310-293059-1

Date Collected: 10/16/24 09:30
Matrix: Water

Date Received: 10/17/24 13:05

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*100*		*73 - 130*		*10/23/24 11:19*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*10/23/24 11:19*	*1*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*10/23/24 11:19*	*1*

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	**6.98**	**J**	10.4	5.73	ug/L		10/21/24 10:22	10/23/24 17:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*81*		*39 - 118*	*10/21/24 10:22*	*10/23/24 17:07*	*1*
Nitrobenzene-d5 (Surr)	*82*		*45 - 129*	*10/21/24 10:22*	*10/23/24 17:07*	*1*
Terphenyl-d14 (Surr)	*68*		*12 - 144*	*10/21/24 10:22*	*10/23/24 17:07*	*1*

Method: SW846 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
beta-BHC	<0.0386		0.0919	0.0386	ug/L		10/18/24 10:02	10/21/24 12:52	1
Endosulfan sulfate	<0.0165		0.0919	0.0165	ug/L		10/18/24 10:02	10/21/24 12:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*79*		*10 - 136*	*10/18/24 10:02*	*10/21/24 12:52*	*1*
Tetrachloro-m-xylene (Surr)	*92*		*10 - 130*	*10/18/24 10:02*	*10/21/24 12:52*	*1*

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	<2.79		6.71	2.79	ug/L		10/20/24 20:03	10/22/24 15:05	10
Silvex (2,4,5-TP)	**0.889**		0.559	0.246	ug/L		10/20/24 20:03	10/22/24 15:05	10
2,4,5-T	<0.727		1.68	0.727	ug/L		10/20/24 20:03	10/22/24 15:05	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*144*	*S1+*	*34 - 142*	*10/20/24 20:03*	*10/22/24 15:05*	*10*
DCAA	*110*		*34 - 142*	*10/20/24 20:03*	*10/22/24 15:05*	*10*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		10/22/24 09:30	10/31/24 20:20	1
Arsenic	**0.841**	**J**	2.00	0.530	ug/L		10/22/24 09:30	10/31/24 20:20	1
Barium	**988**		2.00	0.660	ug/L		10/22/24 09:30	10/31/24 20:20	1
Beryllium	<0.330		1.00	0.330	ug/L		10/22/24 09:30	11/01/24 14:20	1
Cadmium	**0.514**		0.200	0.100	ug/L		10/22/24 09:30	10/31/24 20:20	1
Chromium	**8.64**		5.00	1.20	ug/L		10/22/24 09:30	10/31/24 20:20	1
Cobalt	**7.99**		0.500	0.170	ug/L		10/22/24 09:30	10/31/24 20:20	1
Copper	**3.87**	**J**	5.00	1.80	ug/L		10/22/24 09:30	11/01/24 14:20	1
Lead	<0.260		0.500	0.260	ug/L		10/22/24 09:30	10/31/24 20:20	1
Nickel	**353**		5.00	2.10	ug/L		10/22/24 09:30	10/31/24 20:20	1
Selenium	<1.40		5.00	1.40	ug/L		10/22/24 09:30	10/31/24 20:20	1
Silver	**0.645**	**J**	1.00	0.500	ug/L		10/22/24 09:30	11/01/24 14:20	1
Thallium	<0.570		1.00	0.570	ug/L		10/22/24 09:30	10/31/24 20:20	1
Vanadium	<1.10		5.00	1.10	ug/L		10/22/24 09:30	10/31/24 20:20	1
Zinc	<9.70		20.0	9.70	ug/L		10/22/24 09:30	11/01/24 14:20	1

Client: AECOM
Job ID: 310-293059-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-402B
Lab Sample ID: 310-293059-1
Date Collected: 10/16/24 09:30
Matrix: Water
Date Received: 10/17/24 13:05

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide (SW846 9034)	<1.41		3.00	1.41	mg/L		10/21/24 09:24	10/21/24 13:06	1
Total Suspended Solids (USGS I-3765-85)	**7.13**		1.88	1.39	mg/L			10/18/24 14:05	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**0.76**				NTU			10/16/24 09:30	1

Client: AECOM
Job ID: 310-293059-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-413B
Lab Sample ID: 310-293059-2
Date Collected: 10/16/24 12:00
Matrix: Water
Date Received: 10/17/24 13:05

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			10/23/24 11:41	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			10/23/24 11:41	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			10/23/24 11:41	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			10/23/24 11:41	1
1,1-Dichloroethane	**0.255**	**J**	1.00	0.220	ug/L			10/23/24 11:41	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			10/23/24 11:41	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			10/23/24 11:41	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			10/23/24 11:41	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			10/23/24 11:41	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			10/23/24 11:41	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			10/23/24 11:41	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			10/23/24 11:41	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			10/23/24 11:41	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			10/23/24 11:41	1
2-Hexanone	<2.00		10.0	2.00	ug/L			10/23/24 11:41	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			10/23/24 11:41	1
Acetone	<3.10		10.0	3.10	ug/L			10/23/24 11:41	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			10/23/24 11:41	1
Benzene	**1.90**		0.500	0.220	ug/L			10/23/24 11:41	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			10/23/24 11:41	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			10/23/24 11:41	1
Bromoform	<0.780		5.00	0.780	ug/L			10/23/24 11:41	1
Bromomethane	<1.10		4.00	1.10	ug/L			10/23/24 11:41	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			10/23/24 11:41	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			10/23/24 11:41	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			10/23/24 11:41	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			10/23/24 11:41	1
Chloroethane	**0.893**	**J**	4.00	0.790	ug/L			10/23/24 11:41	1
Chloroform	<1.30		3.00	1.30	ug/L			10/23/24 11:41	1
Chloromethane	<0.610		3.00	0.610	ug/L			10/23/24 11:41	1
cis-1,2-Dichloroethene	**0.755**	**J**	1.00	0.210	ug/L			10/23/24 11:41	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			10/23/24 11:41	1
Dibromomethane	<0.330		1.00	0.330	ug/L			10/23/24 11:41	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			10/23/24 11:41	1
Iodomethane	<7.00		10.0	7.00	ug/L			10/23/24 11:41	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			10/23/24 11:41	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			10/23/24 11:41	1
o-Xylene	<0.400		1.00	0.400	ug/L			10/23/24 11:41	1
Styrene	<0.370		1.00	0.370	ug/L			10/23/24 11:41	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			10/23/24 11:41	1
Toluene	<0.430		1.00	0.430	ug/L			10/23/24 11:41	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			10/23/24 11:41	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			10/23/24 11:41	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			10/23/24 11:41	1
Trichloroethene	<0.430		1.00	0.430	ug/L			10/23/24 11:41	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			10/23/24 11:41	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			10/23/24 11:41	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			10/23/24 11:41	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			10/23/24 11:41	1

Client: AECOM
Job ID: 310-293059-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-413B
Lab Sample ID: 310-293059-2

Date Collected: 10/16/24 12:00
Matrix: Water

Date Received: 10/17/24 13:05

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*100*		*73 - 130*		*10/23/24 11:41*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*10/23/24 11:41*	*1*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*		*10/23/24 11:41*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		10/22/24 09:30	10/31/24 20:22	1
Arsenic	**6.37**		2.00	0.530	ug/L		10/22/24 09:30	10/31/24 20:22	1
Barium	**544**		2.00	0.660	ug/L		10/22/24 09:30	10/31/24 20:22	1
Beryllium	<0.330		1.00	0.330	ug/L		10/22/24 09:30	11/01/24 14:38	1
Cadmium	<0.100		0.200	0.100	ug/L		10/22/24 09:30	10/31/24 20:22	1
Chromium	**2.65**	**J**	5.00	1.20	ug/L		10/22/24 09:30	10/31/24 20:22	1
Cobalt	**2.82**		0.500	0.170	ug/L		10/22/24 09:30	10/31/24 20:22	1
Copper	<1.80		5.00	1.80	ug/L		10/22/24 09:30	11/01/24 14:38	1
Lead	**0.286**	**J**	0.500	0.260	ug/L		10/22/24 09:30	10/31/24 20:22	1
Nickel	**5.01**		5.00	2.10	ug/L		10/22/24 09:30	10/31/24 20:22	1
Selenium	<1.40		5.00	1.40	ug/L		10/22/24 09:30	10/31/24 20:22	1
Silver	<0.500		1.00	0.500	ug/L		10/22/24 09:30	11/01/24 14:38	1
Thallium	<0.570		1.00	0.570	ug/L		10/22/24 09:30	10/31/24 20:22	1
Vanadium	**3.51**	**J**	5.00	1.10	ug/L		10/22/24 09:30	10/31/24 20:22	1
Zinc	<9.70		20.0	9.70	ug/L		10/22/24 09:30	11/01/24 14:38	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**75.0**		15.0	11.1	mg/L			10/18/24 14:05	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**25.27**				NTU			10/16/24 12:00	1

Client: AECOM
Job ID: 310-293059-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Trip Blanks
Lab Sample ID: 310-293059-3
Date Collected: 10/16/24 06:00
Matrix: Water
Date Received: 10/17/24 13:05

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			10/23/24 09:47	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			10/23/24 09:47	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			10/23/24 09:47	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			10/23/24 09:47	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			10/23/24 09:47	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			10/23/24 09:47	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			10/23/24 09:47	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			10/23/24 09:47	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			10/23/24 09:47	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			10/23/24 09:47	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			10/23/24 09:47	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			10/23/24 09:47	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			10/23/24 09:47	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			10/23/24 09:47	1
2-Hexanone	<2.00		10.0	2.00	ug/L			10/23/24 09:47	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			10/23/24 09:47	1
Acetone	<3.10		10.0	3.10	ug/L			10/23/24 09:47	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			10/23/24 09:47	1
Benzene	<0.220		0.500	0.220	ug/L			10/23/24 09:47	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			10/23/24 09:47	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			10/23/24 09:47	1
Bromoform	<0.780		5.00	0.780	ug/L			10/23/24 09:47	1
Bromomethane	<1.10		4.00	1.10	ug/L			10/23/24 09:47	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			10/23/24 09:47	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			10/23/24 09:47	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			10/23/24 09:47	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			10/23/24 09:47	1
Chloroethane	<0.790		4.00	0.790	ug/L			10/23/24 09:47	1
Chloroform	<1.30		3.00	1.30	ug/L			10/23/24 09:47	1
Chloromethane	<0.610		3.00	0.610	ug/L			10/23/24 09:47	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			10/23/24 09:47	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			10/23/24 09:47	1
Dibromomethane	<0.330		1.00	0.330	ug/L			10/23/24 09:47	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			10/23/24 09:47	1
Iodomethane	<7.00		10.0	7.00	ug/L			10/23/24 09:47	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			10/23/24 09:47	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			10/23/24 09:47	1
o-Xylene	<0.400		1.00	0.400	ug/L			10/23/24 09:47	1
Styrene	<0.370		1.00	0.370	ug/L			10/23/24 09:47	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			10/23/24 09:47	1
Toluene	<0.430		1.00	0.430	ug/L			10/23/24 09:47	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			10/23/24 09:47	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			10/23/24 09:47	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			10/23/24 09:47	1
Trichloroethene	<0.430		1.00	0.430	ug/L			10/23/24 09:47	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			10/23/24 09:47	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			10/23/24 09:47	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			10/23/24 09:47	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			10/23/24 09:47	1

Client: AECOM
Job ID: 310-293059-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Trip Blanks
Lab Sample ID: 310-293059-3
Date Collected: 10/16/24 06:00
Matrix: Water
Date Received: 10/17/24 13:05

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	100		73 - 130		10/23/24 09:47	1
Toluene-d8 (Surr)	98		80 - 120		10/23/24 09:47	1
4-Bromofluorobenzene (Surr)	100		80 - 120		10/23/24 09:47	1

Definitions/Glossary

Client: AECOM
Job ID: 310-293059-1
Project/Site: Black Hawk County Landfill (IDNR)

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC Semi VOA

Qualifier	Qualifier Description
S1+	Surrogate recovery exceeds control limits, high biased.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Surrogate Summary

Client: AECOM
Job ID: 310-293059-1
Project/Site: Black Hawk County Landfill (IDNR)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-293059-1	OW-402B	100	99	99
310-293059-1 MS	OW-402B	97	101	100
310-293059-1 MSD	OW-402B	99	101	100
310-293059-2	OW-413B	100	98	100
310-293059-3	Trip Blanks	100	98	100
LCS 310-437072/6	Lab Control Sample	99	100	98
LCS 310-437072/7	Lab Control Sample	101	99	100
MB 310-437072/5	Method Blank	100	99	100

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		FBP	NBZ	TPHL
Lab Sample ID	Client Sample ID	(39-118)	(45-129)	(12-144)
310-293059-1	OW-402B	81	82	68
LCS 310-436918/2-A	Lab Control Sample	85	84	110
LCSD 310-436918/3-A	Lab Control Sample Dup	51	53	75
MB 310-436918/1-A	Method Blank	104	108	113

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
NBZ = Nitrobenzene-d5 (Surr)
TPHL = Terphenyl-d14 (Surr)

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		DCB1	TCX1
Lab Sample ID	Client Sample ID	(10-136)	(10-130)
310-293059-1	OW-402B	79	92

Surrogate Legend

DCB = DCB Decachlorobiphenyl (Surr)
TCX = Tetrachloro-m-xylene (Surr)

Method: 8151A - Herbicides (GC)

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		DCPAA1	DCPAA2
Lab Sample ID	Client Sample ID	(34-142)	(34-142)
310-293059-1	OW-402B	144 S1+	110
LCS 410-565451/2-A	Lab Control Sample	96	92
LCSD 410-565451/3-A	Lab Control Sample Dup	93	90
MB 410-565451/1-A	Method Blank	86	81

Surrogate Summary

Client: AECOM
Job ID: 310-293059-1
Project/Site: Black Hawk County Landfill (IDNR)

Surrogate Legend

DCPAA = DCAA

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 310-437072/5
Matrix: Water
Analysis Batch: 437072

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			10/23/24 08:16	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			10/23/24 08:16	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			10/23/24 08:16	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			10/23/24 08:16	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			10/23/24 08:16	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			10/23/24 08:16	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			10/23/24 08:16	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			10/23/24 08:16	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			10/23/24 08:16	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			10/23/24 08:16	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			10/23/24 08:16	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			10/23/24 08:16	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			10/23/24 08:16	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			10/23/24 08:16	1
2-Hexanone	<2.00		10.0	2.00	ug/L			10/23/24 08:16	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			10/23/24 08:16	1
Acetone	<3.10		10.0	3.10	ug/L			10/23/24 08:16	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			10/23/24 08:16	1
Benzene	<0.220		0.500	0.220	ug/L			10/23/24 08:16	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			10/23/24 08:16	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			10/23/24 08:16	1
Bromoform	<0.780		5.00	0.780	ug/L			10/23/24 08:16	1
Bromomethane	<1.10		4.00	1.10	ug/L			10/23/24 08:16	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			10/23/24 08:16	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			10/23/24 08:16	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			10/23/24 08:16	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			10/23/24 08:16	1
Chloroethane	<0.790		4.00	0.790	ug/L			10/23/24 08:16	1
Chloroform	<1.30		3.00	1.30	ug/L			10/23/24 08:16	1
Chloromethane	<0.610		3.00	0.610	ug/L			10/23/24 08:16	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			10/23/24 08:16	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			10/23/24 08:16	1
Dibromomethane	<0.330		1.00	0.330	ug/L			10/23/24 08:16	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			10/23/24 08:16	1
Iodomethane	<7.00		10.0	7.00	ug/L			10/23/24 08:16	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			10/23/24 08:16	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			10/23/24 08:16	1
o-Xylene	<0.400		1.00	0.400	ug/L			10/23/24 08:16	1
Styrene	<0.370		1.00	0.370	ug/L			10/23/24 08:16	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			10/23/24 08:16	1
Toluene	<0.430		1.00	0.430	ug/L			10/23/24 08:16	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			10/23/24 08:16	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			10/23/24 08:16	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			10/23/24 08:16	1
Trichloroethene	<0.430		1.00	0.430	ug/L			10/23/24 08:16	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			10/23/24 08:16	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			10/23/24 08:16	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			10/23/24 08:16	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-437072/5
Matrix: Water
Analysis Batch: 437072

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	<0.400		3.00	0.400	ug/L			10/23/24 08:16	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*100*		*73 - 130*		*10/23/24 08:16*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*10/23/24 08:16*	*1*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*		*10/23/24 08:16*	*1*

Lab Sample ID: LCS 310-437072/6
Matrix: Water
Analysis Batch: 437072

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	20.0	21.03		ug/L		105	71 - 120
1,1,1-Trichloroethane	20.0	21.35		ug/L		107	73 - 129
1,1,2,2-Tetrachloroethane	20.0	20.97		ug/L		105	68 - 124
1,1,2-Trichloroethane	20.0	21.22		ug/L		106	73 - 123
1,1-Dichloroethane	20.0	21.71		ug/L		109	70 - 127
1,1-Dichloroethene	20.0	21.75		ug/L		109	63 - 132
1,2,3-Trichloropropane	20.0	20.71		ug/L		104	65 - 127
1,2-Dibromo-3-Chloropropane	20.0	19.16		ug/L		96	50 - 150
1,2-Dibromoethane (EDB)	20.0	21.30		ug/L		107	75 - 125
1,2-Dichlorobenzene	20.0	21.27		ug/L		106	74 - 120
1,2-Dichloroethane	20.0	20.24		ug/L		101	71 - 125
1,2-Dichloropropane	20.0	21.32		ug/L		107	73 - 124
1,4-Dichlorobenzene	20.0	21.14		ug/L		106	72 - 120
2-Butanone (MEK)	40.0	38.18		ug/L		95	50 - 150
2-Hexanone	40.0	39.49		ug/L		99	60 - 140
4-Methyl-2-pentanone (MIBK)	40.0	40.30		ug/L		101	60 - 139
Acetone	40.0	37.88		ug/L		95	50 - 150
Acrylonitrile	200	210.3		ug/L		105	50 - 150
Benzene	20.0	21.80		ug/L		109	72 - 124
Bromochloromethane	20.0	21.69		ug/L		108	73 - 130
Bromodichloromethane	20.0	20.69		ug/L		103	74 - 122
Bromoform	20.0	19.97		ug/L		100	61 - 122
Carbon disulfide	20.0	21.83		ug/L		109	59 - 135
Carbon tetrachloride	20.0	21.68		ug/L		108	67 - 132
Chlorobenzene	20.0	21.48		ug/L		107	76 - 120
Chlorodibromomethane	20.0	20.72		ug/L		104	71 - 121
Chloroform	20.0	20.40		ug/L		102	72 - 125
cis-1,2-Dichloroethene	20.0	21.48		ug/L		107	74 - 123
cis-1,3-Dichloropropene	20.0	20.42		ug/L		102	71 - 125
Dibromomethane	20.0	20.64		ug/L		103	74 - 125
Ethylbenzene	20.0	22.16		ug/L		111	74 - 122
Iodomethane	20.0	12.45		ug/L		62	10 - 150
Methylene Chloride	20.0	21.33		ug/L		107	50 - 150
Styrene	20.0	22.36		ug/L		112	74 - 121
Tetrachloroethene	20.0	22.01		ug/L		110	71 - 130
Toluene	20.0	21.61		ug/L		108	74 - 123

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-437072/6
Matrix: Water
Analysis Batch: 437072

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
trans-1,2-Dichloroethene	20.0	21.54		ug/L		108	70 - 126
trans-1,3-Dichloropropene	20.0	19.78		ug/L		99	69 - 123
trans-1,4-Dichloro-2-butene	20.0	17.02		ug/L		85	50 - 150
Trichloroethene	20.0	21.80		ug/L		109	72 - 126
Vinyl acetate	40.0	39.01		ug/L		98	50 - 150
Xylenes, Total	40.0	43.73		ug/L		109	73 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*99*		*73 - 130*
Toluene-d8 (Surr)	*100*		*80 - 120*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*

Lab Sample ID: LCS 310-437072/7
Matrix: Water
Analysis Batch: 437072

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	15.84		ug/L		79	23 - 150
Chloroethane	20.0	19.68		ug/L		98	54 - 136
Chloromethane	20.0	21.36		ug/L		107	38 - 150
Trichlorofluoromethane	20.0	21.56		ug/L		108	54 - 149
Vinyl chloride	20.0	21.11		ug/L		106	56 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*101*		*73 - 130*
Toluene-d8 (Surr)	*99*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*

Lab Sample ID: 310-293059-1 MS
Matrix: Water
Analysis Batch: 437072

Client Sample ID: OW-402B
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	<0.380		20.0	17.56		ug/L		88	55 - 130
1,1,1-Trichloroethane	<0.190		20.0	17.58		ug/L		88	52 - 130
1,1,2,2-Tetrachloroethane	<0.470		20.0	18.78		ug/L		94	54 - 130
1,1,2-Trichloroethane	<0.450		20.0	18.66		ug/L		93	58 - 130
1,1-Dichloroethane	0.425	J	20.0	18.90		ug/L		92	49 - 130
1,1-Dichloroethene	<0.560		20.0	18.17		ug/L		91	37 - 132
1,2,3-Trichloropropane	<0.590		20.0	17.89		ug/L		89	49 - 130
1,2-Dibromo-3-Chloropropane	<1.20		20.0	16.77		ug/L		84	38 - 150
1,2-Dibromoethane (EDB)	<0.340		20.0	18.43		ug/L		92	60 - 130
1,2-Dichlorobenzene	<0.370		20.0	17.90		ug/L		90	59 - 130
1,2-Dichloroethane	<0.390		20.0	17.03		ug/L		85	51 - 130
1,2-Dichloropropane	0.296	J	20.0	18.88		ug/L		93	57 - 130
1,4-Dichlorobenzene	0.591	J	20.0	18.37		ug/L		89	57 - 130
2-Butanone (MEK)	<2.10		40.0	36.54		ug/L		91	38 - 150
2-Hexanone	<2.00		40.0	36.89		ug/L		92	46 - 140

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 310-293059-1 MS
Matrix: Water
Analysis Batch: 437072

Client Sample ID: OW-402B
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
4-Methyl-2-pentanone (MIBK)	<2.10		40.0	38.36		ug/L		96	47 - 139
Acetone	<3.10		40.0	38.02		ug/L		95	31 - 150
Acrylonitrile	<2.20		200	190.1		ug/L		95	40 - 150
Benzene	0.947		20.0	19.23		ug/L		91	46 - 130
Bromochloromethane	<0.540		20.0	18.17		ug/L		91	57 - 130
Bromodichloromethane	<0.390		20.0	17.26		ug/L		86	57 - 130
Bromoform	<0.780		20.0	15.95		ug/L		80	44 - 130
Carbon disulfide	<0.450		20.0	19.55		ug/L		98	38 - 135
Carbon tetrachloride	<0.650		20.0	17.34		ug/L		87	45 - 132
Chlorobenzene	<0.400		20.0	18.73		ug/L		94	59 - 130
Chlorodibromomethane	<0.750		20.0	16.65		ug/L		83	54 - 130
Chloroform	<1.30		20.0	17.03		ug/L		85	51 - 130
cis-1,2-Dichloroethene	10.4		20.0	26.82		ug/L		82	45 - 130
cis-1,3-Dichloropropene	<0.250		20.0	16.91		ug/L		85	53 - 130
Dibromomethane	<0.330		20.0	17.79		ug/L		89	59 - 130
Ethylbenzene	<0.310		20.0	19.17		ug/L		96	45 - 130
Iodomethane	<7.00		20.0	11.57		ug/L		58	10 - 150
Methylene Chloride	<1.70		20.0	18.34		ug/L		92	37 - 150
Styrene	<0.370		20.0	18.96		ug/L		95	47 - 130
Tetrachloroethene	<0.480		20.0	17.79		ug/L		89	47 - 130
Toluene	<0.430		20.0	18.30		ug/L		92	51 - 130
trans-1,2-Dichloroethene	0.605	J	20.0	18.47		ug/L		89	48 - 130
trans-1,3-Dichloropropene	<0.560		20.0	16.28		ug/L		81	50 - 130
trans-1,4-Dichloro-2-butene	<1.10		20.0	14.48		ug/L		72	26 - 150
Trichloroethene	<0.430		20.0	17.44		ug/L		87	51 - 130
Vinyl acetate	<2.50		40.0	35.71		ug/L		89	29 - 150
Xylenes, Total	<0.400		40.0	38.30		ug/L		96	43 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*97*		*73 - 130*
Toluene-d8 (Surr)	*101*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*

Lab Sample ID: 310-293059-1 MSD
Matrix: Water
Analysis Batch: 437072

Client Sample ID: OW-402B
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	<0.380		20.0	17.70		ug/L		89	55 - 130	1	20
1,1,1-Trichloroethane	<0.190		20.0	17.65		ug/L		88	52 - 130	0	20
1,1,2,2-Tetrachloroethane	<0.470		20.0	18.80		ug/L		94	54 - 130	0	20
1,1,2-Trichloroethane	<0.450		20.0	18.61		ug/L		93	58 - 130	0	20
1,1-Dichloroethane	0.425	J	20.0	18.98		ug/L		93	49 - 130	0	20
1,1-Dichloroethene	<0.560		20.0	18.26		ug/L		91	37 - 132	0	26
1,2,3-Trichloropropane	<0.590		20.0	17.92		ug/L		90	49 - 130	0	26
1,2-Dibromo-3-Chloropropane	<1.20		20.0	17.11		ug/L		86	38 - 150	2	20
1,2-Dibromoethane (EDB)	<0.340		20.0	18.48		ug/L		92	60 - 130	0	20
1,2-Dichlorobenzene	<0.370		20.0	18.40		ug/L		92	59 - 130	3	20

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 310-293059-1 MSD
Matrix: Water
Analysis Batch: 437072

Client Sample ID: OW-402B
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2-Dichloroethane	<0.390		20.0	17.13		ug/L		86	51 - 130	1	20
1,2-Dichloropropane	0.296	J	20.0	18.88		ug/L		93	57 - 130	0	20
1,4-Dichlorobenzene	0.591	J	20.0	18.64		ug/L		90	57 - 130	1	20
2-Butanone (MEK)	<2.10		40.0	36.21		ug/L		91	38 - 150	1	20
2-Hexanone	<2.00		40.0	36.86		ug/L		92	46 - 140	0	20
4-Methyl-2-pentanone (MIBK)	<2.10		40.0	38.33		ug/L		96	47 - 139	0	20
Acetone	<3.10		40.0	38.27		ug/L		96	31 - 150	1	29
Acrylonitrile	<2.20		200	191.6		ug/L		96	40 - 150	1	20
Benzene	0.947		20.0	19.09		ug/L		91	46 - 130	1	20
Bromochloromethane	<0.540		20.0	18.26		ug/L		91	57 - 130	0	20
Bromodichloromethane	<0.390		20.0	17.48		ug/L		87	57 - 130	1	20
Bromoform	<0.780		20.0	16.07		ug/L		80	44 - 130	1	20
Carbon disulfide	<0.450		20.0	18.69		ug/L		93	38 - 135	5	30
Carbon tetrachloride	<0.650		20.0	17.45		ug/L		87	45 - 132	1	20
Chlorobenzene	<0.400		20.0	18.86		ug/L		94	59 - 130	1	20
Chlorodibromomethane	<0.750		20.0	17.05		ug/L		85	54 - 130	2	20
Chloroform	<1.30		20.0	17.15		ug/L		86	51 - 130	1	20
cis-1,2-Dichloroethene	10.4		20.0	26.71		ug/L		82	45 - 130	0	20
cis-1,3-Dichloropropene	<0.250		20.0	17.06		ug/L		85	53 - 130	1	20
Dibromomethane	<0.330		20.0	17.86		ug/L		89	59 - 130	0	20
Ethylbenzene	<0.310		20.0	19.03		ug/L		95	45 - 130	1	20
Iodomethane	<7.00		20.0	12.20		ug/L		61	10 - 150	5	35
Methylene Chloride	<1.70		20.0	18.16		ug/L		91	37 - 150	1	24
Styrene	<0.370		20.0	19.12		ug/L		96	47 - 130	1	20
Tetrachloroethene	<0.480		20.0	18.11		ug/L		91	47 - 130	2	20
Toluene	<0.430		20.0	18.31		ug/L		92	51 - 130	0	20
trans-1,2-Dichloroethene	0.605	J	20.0	18.37		ug/L		89	48 - 130	1	22
trans-1,3-Dichloropropene	<0.560		20.0	16.51		ug/L		83	50 - 130	1	20
trans-1,4-Dichloro-2-butene	<1.10		20.0	13.01		ug/L		65	26 - 150	11	23
Trichloroethene	<0.430		20.0	17.37		ug/L		87	51 - 130	0	20
Vinyl acetate	<2.50		40.0	35.62		ug/L		89	29 - 150	0	23
Xylenes, Total	<0.400		40.0	37.65		ug/L		94	43 - 130	2	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*99*		*73 - 130*
Toluene-d8 (Surr)	*101*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 310-436918/1-A
Matrix: Water
Analysis Batch: 437236

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 436918

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	<5.50		10.0	5.50	ug/L		10/21/24 10:22	10/23/24 13:55	1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 310-436918/1-A
Matrix: Water
Analysis Batch: 437236

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 436918

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	104		39 - 118	10/21/24 10:22	10/23/24 13:55	1
Nitrobenzene-d5 (Surr)	108		45 - 129	10/21/24 10:22	10/23/24 13:55	1
Terphenyl-d14 (Surr)	113		12 - 144	10/21/24 10:22	10/23/24 13:55	1

Lab Sample ID: LCS 310-436918/2-A
Matrix: Water
Analysis Batch: 437236

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 436918

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Bis(2-ethylhexyl) phthalate			100	98.30		ug/L		98	43 - 143		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Fluorobiphenyl (Surr)	85		39 - 118
Nitrobenzene-d5 (Surr)	84		45 - 129
Terphenyl-d14 (Surr)	110		12 - 144

Lab Sample ID: LCSD 310-436918/3-A
Matrix: Water
Analysis Batch: 437236

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 436918

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Bis(2-ethylhexyl) phthalate			100	85.61		ug/L		86	43 - 143	14	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
2-Fluorobiphenyl (Surr)	51		39 - 118
Nitrobenzene-d5 (Surr)	53		45 - 129
Terphenyl-d14 (Surr)	75		12 - 144

Method: 8151A - Herbicides (GC)

Lab Sample ID: MB 410-565451/1-A
Matrix: Water
Analysis Batch: 566062

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 565451

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	<0.250		0.600	0.250	ug/L		10/20/24 20:03	10/22/24 11:19	1
Silvex (2,4,5-TP)	<0.0220		0.0500	0.0220	ug/L		10/20/24 20:03	10/22/24 11:19	1
2,4,5-T	<0.0650		0.150	0.0650	ug/L		10/20/24 20:03	10/22/24 11:19	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	86		34 - 142	10/20/24 20:03	10/22/24 11:19	1
DCAA	81		34 - 142	10/20/24 20:03	10/22/24 11:19	1

Method: 8151A - Herbicides (GC) (Continued)

Lab Sample ID: LCS 410-565451/2-A
Matrix: Water
Analysis Batch: 566062

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 565451

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
2,4-D			2.50	2.505		ug/L		100	53 - 159		
Silvex (2,4,5-TP)			0.250	0.2969		ug/L		119	62 - 170		
2,4,5-T			0.250	0.2906		ug/L		116	57 - 171		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCAA	*96*		*34 - 142*
DCAA	*92*		*34 - 142*

Lab Sample ID: LCSD 410-565451/3-A
Matrix: Water
Analysis Batch: 566062

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 565451

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,4-D			2.50	2.481		ug/L		99	53 - 159	1	30
Silvex (2,4,5-TP)			0.250	0.2847		ug/L		114	62 - 170	4	30
2,4,5-T			0.250	0.2837		ug/L		113	57 - 171	2	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
DCAA	*93*		*34 - 142*
DCAA	*90*		*34 - 142*

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-437008/1-A
Matrix: Water
Analysis Batch: 438319

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 437008

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		10/22/24 09:30	10/31/24 19:53	1
Arsenic	<0.530		2.00	0.530	ug/L		10/22/24 09:30	10/31/24 19:53	1
Barium	<0.660		2.00	0.660	ug/L		10/22/24 09:30	10/31/24 19:53	1
Cadmium	<0.100		0.200	0.100	ug/L		10/22/24 09:30	10/31/24 19:53	1
Chromium	<1.20		5.00	1.20	ug/L		10/22/24 09:30	10/31/24 19:53	1
Cobalt	<0.170		0.500	0.170	ug/L		10/22/24 09:30	10/31/24 19:53	1
Lead	<0.260		0.500	0.260	ug/L		10/22/24 09:30	10/31/24 19:53	1
Nickel	<2.10		5.00	2.10	ug/L		10/22/24 09:30	10/31/24 19:53	1
Selenium	<1.40		5.00	1.40	ug/L		10/22/24 09:30	10/31/24 19:53	1
Thallium	<0.570		1.00	0.570	ug/L		10/22/24 09:30	10/31/24 19:53	1
Vanadium	<1.10		5.00	1.10	ug/L		10/22/24 09:30	10/31/24 19:53	1

Lab Sample ID: MB 310-437008/1-A
Matrix: Water
Analysis Batch: 438521

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 437008

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	<0.330		1.00	0.330	ug/L		10/22/24 09:30	11/01/24 13:56	1
Copper	<1.80		5.00	1.80	ug/L		10/22/24 09:30	11/01/24 13:56	1
Silver	<0.500		1.00	0.500	ug/L		10/22/24 09:30	11/01/24 13:56	1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 310-437008/1-A
Matrix: Water
Analysis Batch: 438521

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 437008

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	<9.70		20.0	9.70	ug/L		10/22/24 09:30	11/01/24 13:56	1

Lab Sample ID: LCS 310-437008/2-A
Matrix: Water
Analysis Batch: 438319

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 437008

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	200	218.6		ug/L		109	80 - 120
Arsenic	200	200.7		ug/L		100	80 - 120
Barium	100	101.8		ug/L		102	80 - 120
Cadmium	100	96.92		ug/L		97	80 - 120
Chromium	100	100.6		ug/L		101	80 - 120
Cobalt	100	107.0		ug/L		107	80 - 120
Lead	200	212.2		ug/L		106	80 - 120
Nickel	200	192.8		ug/L		96	80 - 120
Selenium	400	379.1		ug/L		95	80 - 120
Thallium	100	80.42		ug/L		80	80 - 120
Vanadium	100	100.3		ug/L		100	80 - 120

Lab Sample ID: LCS 310-437008/2-A
Matrix: Water
Analysis Batch: 438521

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 437008

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Beryllium	100	106.9		ug/L		107	80 - 120
Copper	200	202.7		ug/L		101	80 - 120
Silver	100	106.1		ug/L		106	80 - 120
Zinc	200	189.8		ug/L		95	80 - 120

Method: 9034 - Sulfide, Acid soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 240-631650/1-A
Matrix: Water
Analysis Batch: 631716

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 631650

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.41		3.00	1.41	mg/L		10/21/24 09:24	10/21/24 13:06	1

Lab Sample ID: LCS 240-631650/2-A
Matrix: Water
Analysis Batch: 631716

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 631650

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfide	6.93	5.600		mg/L		81	70 - 120

Client: AECOM
Job ID: 310-293059-1
Project/Site: Black Hawk County Landfill (IDNR)

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: MB 310-436800/1
Matrix: Water
Analysis Batch: 436800

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<3.70		5.00	3.70	mg/L			10/18/24 14:05	1

Lab Sample ID: LCS 310-436800/2
Matrix: Water
Analysis Batch: 436800

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	96.00		mg/L		96	81 - 116

Lab Sample ID: 310-293059-2 DU
Matrix: Water
Analysis Batch: 436800

Client Sample ID: OW-413B
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Suspended Solids	75.0		82.00		mg/L		9	35

QC Association Summary

Client: AECOM
Job ID: 310-293059-1
Project/Site: Black Hawk County Landfill (IDNR)

GC/MS VOA

Analysis Batch: 437072

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-293059-1	OW-402B	Total/NA	Water	8260D	
310-293059-2	OW-413B	Total/NA	Water	8260D	
310-293059-3	Trip Blanks	Total/NA	Water	8260D	
MB 310-437072/5	Method Blank	Total/NA	Water	8260D	
LCS 310-437072/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-437072/7	Lab Control Sample	Total/NA	Water	8260D	
310-293059-1 MS	OW-402B	Total/NA	Water	8260D	
310-293059-1 MSD	OW-402B	Total/NA	Water	8260D	

GC/MS Semi VOA

Prep Batch: 436918

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-293059-1	OW-402B	Total/NA	Water	3510C	
MB 310-436918/1-A	Method Blank	Total/NA	Water	3510C	
LCS 310-436918/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 310-436918/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 437236

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-293059-1	OW-402B	Total/NA	Water	8270E	436918
MB 310-436918/1-A	Method Blank	Total/NA	Water	8270E	436918
LCS 310-436918/2-A	Lab Control Sample	Total/NA	Water	8270E	436918
LCSD 310-436918/3-A	Lab Control Sample Dup	Total/NA	Water	8270E	436918

GC Semi VOA

Prep Batch: 436739

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-293059-1	OW-402B	Total/NA	Water	3511	

Analysis Batch: 436901

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-293059-1	OW-402B	Total/NA	Water	8081B	436739

Prep Batch: 565451

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-293059-1	OW-402B	Total/NA	Water	8151A	
MB 410-565451/1-A	Method Blank	Total/NA	Water	8151A	
LCS 410-565451/2-A	Lab Control Sample	Total/NA	Water	8151A	
LCSD 410-565451/3-A	Lab Control Sample Dup	Total/NA	Water	8151A	

Analysis Batch: 566062

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-293059-1	OW-402B	Total/NA	Water	8151A	565451
MB 410-565451/1-A	Method Blank	Total/NA	Water	8151A	565451
LCS 410-565451/2-A	Lab Control Sample	Total/NA	Water	8151A	565451
LCSD 410-565451/3-A	Lab Control Sample Dup	Total/NA	Water	8151A	565451

Metals

Prep Batch: 437008

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-293059-1	OW-402B	Total/NA	Water	3005A	
310-293059-2	OW-413B	Total/NA	Water	3005A	
MB 310-437008/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-437008/2-A	Lab Control Sample	Total/NA	Water	3005A	

Analysis Batch: 438319

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-293059-1	OW-402B	Total/NA	Water	6020B	437008
310-293059-2	OW-413B	Total/NA	Water	6020B	437008
MB 310-437008/1-A	Method Blank	Total/NA	Water	6020B	437008
LCS 310-437008/2-A	Lab Control Sample	Total/NA	Water	6020B	437008

Analysis Batch: 438521

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-293059-1	OW-402B	Total/NA	Water	6020B	437008
310-293059-2	OW-413B	Total/NA	Water	6020B	437008
MB 310-437008/1-A	Method Blank	Total/NA	Water	6020B	437008
LCS 310-437008/2-A	Lab Control Sample	Total/NA	Water	6020B	437008

General Chemistry

Analysis Batch: 436800

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-293059-1	OW-402B	Total/NA	Water	I-3765-85	
310-293059-2	OW-413B	Total/NA	Water	I-3765-85	
MB 310-436800/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-436800/2	Lab Control Sample	Total/NA	Water	I-3765-85	
310-293059-2 DU	OW-413B	Total/NA	Water	I-3765-85	

Prep Batch: 631650

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-293059-1	OW-402B	Total/NA	Water	9030B	
MB 240-631650/1-A	Method Blank	Total/NA	Water	9030B	
LCS 240-631650/2-A	Lab Control Sample	Total/NA	Water	9030B	

Analysis Batch: 631716

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-293059-1	OW-402B	Total/NA	Water	9034	631650
MB 240-631650/1-A	Method Blank	Total/NA	Water	9034	631650
LCS 240-631650/2-A	Lab Control Sample	Total/NA	Water	9034	631650

Field Service / Mobile Lab

Analysis Batch: 436982

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-293059-1	OW-402B	Total/NA	Water	Field Sampling	
310-293059-2	OW-413B	Total/NA	Water	Field Sampling	

Lab Chronicle

Client: AECOM
Job ID: 310-293059-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-402B
Lab Sample ID: 310-293059-1
Date Collected: 10/16/24 09:30
Matrix: Water
Date Received: 10/17/24 13:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	437072	FE5V	EET CF	10/23/24 11:19
Total/NA	Prep	3510C			436918	AYK7	EET CF	10/21/24 10:22
Total/NA	Analysis	8270E		1	437236	L0FS	EET CF	10/23/24 17:07
Total/NA	Prep	3511			436739	BW2O	EET CF	10/18/24 10:02
Total/NA	Analysis	8081B		1	436901	BW2O	EET CF	10/21/24 12:52
Total/NA	Prep	8151A			565451	UKL2	ELLE	10/20/24 20:03
Total/NA	Analysis	8151A		10	566062	UAMZ	ELLE	10/22/24 15:05
Total/NA	Prep	3005A			437008	F5MW	EET CF	10/22/24 09:30
Total/NA	Analysis	6020B		1	438521	NFT2	EET CF	11/01/24 14:20
Total/NA	Prep	3005A			437008	F5MW	EET CF	10/22/24 09:30
Total/NA	Analysis	6020B		1	438319	A6US	EET CF	10/31/24 20:20
Total/NA	Prep	9030B			631650	C5SV	EET CLE	10/21/24 09:24
Total/NA	Analysis	9034		1	631716	C5SV	EET CLE	10/21/24 13:06
Total/NA	Analysis	I-3765-85		1	436800	DGU1	EET CF	10/18/24 14:05
Total/NA	Analysis	Field Sampling		1	436982	BJ0R	EET CF	10/16/24 09:30

Client Sample ID: OW-413B
Lab Sample ID: 310-293059-2
Date Collected: 10/16/24 12:00
Matrix: Water
Date Received: 10/17/24 13:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	437072	FE5V	EET CF	10/23/24 11:41
Total/NA	Prep	3005A			437008	F5MW	EET CF	10/22/24 09:30
Total/NA	Analysis	6020B		1	438521	NFT2	EET CF	11/01/24 14:38
Total/NA	Prep	3005A			437008	F5MW	EET CF	10/22/24 09:30
Total/NA	Analysis	6020B		1	438319	A6US	EET CF	10/31/24 20:22
Total/NA	Analysis	I-3765-85		1	436800	DGU1	EET CF	10/18/24 14:05
Total/NA	Analysis	Field Sampling		1	436982	BJ0R	EET CF	10/16/24 12:00

Client Sample ID: Trip Blanks
Lab Sample ID: 310-293059-3
Date Collected: 10/16/24 06:00
Matrix: Water
Date Received: 10/17/24 13:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	437072	FE5V	EET CF	10/23/24 09:47

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: AECOM
Job ID: 310-293059-1
Project/Site: Black Hawk County Landfill (IDNR)

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8260D		Water	m,p-Xylene
8260D		Water	o-Xylene
Field Sampling		Water	Field Turbidity

Laboratory: Eurofins Cleveland

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Iowa	State	421	06-01-25

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Iowa	State	361	03-01-26

Method Summary

Client: AECOM
Job ID: 310-293059-1
Project/Site: Black Hawk County Landfill (IDNR)

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CF
8270E	Semivolatile Organic Compounds (GC/MS)	SW846	EET CF
8081B	Organochlorine Pesticides (GC)	SW846	EET CF
8151A	Herbicides (GC)	SW846	ELLE
6020B	Metals (ICP/MS)	SW846	EET CF
9034	Sulfide, Acid soluble and Insoluble (Titrimetric)	SW846	EET CLE
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
Field Sampling	Field Sampling	EPA	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET CF
3511	Microextraction of Organic Compounds	SW846	EET CF
5030B	Purge and Trap	SW846	EET CF
8151A	Extraction (Herbicides)	SW846	ELLE
9030B	Sulfide, Distillation (Acid Soluble and Insoluble)	SW846	EET CLE

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

eurofins | Environment Testing America

310-293059 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: AECOM

City/State: CITY Waterloo | STATE IA | Project: BK HK. co. IDNR

Receipt Information

Date/Time Received: DATE 10/17/24 | TIME 1305 | Received By: JC

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ Lab Field Services ☑ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler?	☑ Yes	☐ No	*If yes:* Cooler ID:
Multiple Coolers?	☐ Yes	☑ No	*If yes:* Cooler # _____ of _____
Cooler Custody Seals Present?	☐ Yes	☑ No	*If yes:* Cooler custody seals intact? ☐ Yes ☐ No
Sample Custody Seals Present?	☐ Yes	☑ No	*If yes:* Sample custody seals intact? ☐ Yes ☐ No
Trip Blank Present?	☐ Yes	☑ No	*If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant. ☑ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: 4 | Correction Factor (°C): 0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 0.6 | Corrected Temp (°C): 0.6

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE: If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

Eurofins Cedar Falls
3019 Venture Way

Cedar Falls, IA 50613
phone 319 277.2401 fax 319 277 2425

Chain of Custody Record

eurofins Environment Testing America

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other IDNR

Eurofins Environment Testing America

Client Contact	**Project Manager: Chris Oelkers**		COC No
AECOM	Email Christopher Oelkers@aecom com	**Site Contact:**	**Date:** 10-17-24	1 of 1 COCs
501 Sycamore Street, Suite 222	**Tel/Fax:319-296-6878**	**Lab Contact:**	**Carrier:**	TALS Project #
Waterloo, IA 50703	**Analysis Turnaround Time** ☑ CALENDAR DAYS ☐ WORKING DAYS			Sampler
(319) 232-6531 Phone	TAT if different from Below ☑ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day			**For Lab Use Only:** Walk-in Client: Lab Sampling
(xxx) xxx-xxxx FAX				
Project Name Black Hawk Co IDNR				Job / SDG No
Site Black Hawk County Landfill				
P O #				

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Appendix I, TSS	Appendix II, TSS	2,4-D	4,4'-DDD	beta-BHC	delta BHC	Endosulfan I	Endosulfan sulfate	Endrin aldehyde	Silvex	Sulfide	2,4,5-T	Bis(2-ethylhexyl)phthalate				Sample Specific Notes
OW-401B			G	GW		N		X		X		X	X		X	X	X	X						
OW-402B	10-16-24	0930	G	GW	12	N		X		X		X			X		X	X	X	X				Turbidity - 0.76 NTU
MW-409B			G	GW		N		X																
MW-409B-FD			G	GW		N		X																
OW-413B	10-16-24	1200	G	GW	5	N		X																Turbidity - 25.27 NTU
MW-501B			G	GW		N		X																
MW-602B			G	GW		N		X																
Trip Blank	10-16-24	0600	G	W	3	N		X																

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No		Cooler Temp (°C) Obs'd._____ Corr'd._____		Therm ID No._____
Relinquished by: Ben Porter	Company: Aecom	Date/Time: 10-17-24	Received by:	Company:	Date/Time: 10/17/24/1305
Relinquished by:	Company:	Date/Time	Received by:	Company:	Date/Time
Relinquished by:	Company:	Date/Time	Received in Laboratory by:	Company:	Date/Time

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11/4/2024

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone: 319-277-2401 Fax: 319-277-2425

Chain of Custody Record

eurofins Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Bindert, Zach T	Carrier Tracking No(s):	COC No: 310-77467 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Zach.Bindert@et.eurofinsus.com	State of Origin: Iowa	Page: Page 1 of 1
Company: Eurofins Environment Testing North Centr		Accreditations Required (See note): State Iowa; State Program Iowa		Job #: 310-293059-1
Address: 180 S. Van Buren Avenue,	Due Date Requested: 10/30/2024	Analysis Requested		Preservation Codes:
City: Barberton	TAT Requested (days):			
State, Zip: OH, 44203				
Phone: 330-497-9396(Tel) 330-497-0772(Fax)	PO #:			
Email:	WO #:			
Project Name: Black Hawk County Landfill (IDNR)	Project #: 31017149			
Site: 310 Black Hawk County (IDNR)	SSOW#:			Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9034_Calc/9030B Sulfide	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
OW-402B (310-293059-1)	10/16/24	09:30 Central	G	Water			X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing North Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing North Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing North Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing North Central, LLC.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested. I, II III IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:
Empty Kit Relinquished by:	Date: Time: Method of Shipment:

	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	10/17/24 1530			10/18/24 930	Euro
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Eurofins – Cleveland Sample Receipt Form/Narrative **Login # :**
Barberton Facility

Client InterVab IA Site Name

Cooler unpacked by: JF

Cooler Received on 10/18/24 Opened on 10/18/24

FedEx: 1st Grd Exp UPS FAS Waypoint Client Drop Off Eurofins Courier Other

Receipt After-hours Drop-off Date/Time Storage Location

Eurofins Cooler # EC Foam Box Client Cooler Box Other

Packing material used. Bubble Wrap Foam Plastic Bag None Other

COOLANT. Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt ☐ See Multiple Cooler Form

IR GUN # 17 (CF +0.1 °C) Observed Cooler Temp. 5.5 °C Corrected Cooler Temp. 5.6 °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity	Yes (No)	
-Were the seals on the outside of the cooler(s) signed & dated?	Yes No (NA)	**Tests that are not checked for pH by Receiving:**
-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)?	Yes (No)	**VOAs**
-Were tamper/custody seals intact and uncompromised?	Yes No (NA)	**Oil and Grease**
3 Shippers' packing slip attached to the cooler(s)?	(Yes) No	**TOC**
4. Did custody papers accompany the sample(s)?	(Yes) No	
5 Were the custody papers relinquished & signed in the appropriate place?	(Yes) No	
6 Was/were the person(s) who collected the samples clearly identified on the COC?	Yes (No)	
7 Did all bottles arrive in good condition (Unbroken)?	(Yes) No	
8 Could all bottle labels (ID/Date/Time) be reconciled with the COC?	(Yes) No	
9 For each sample, does the COC specify preservatives (Y(N), # of containers (Y/N), and sample type of grab/comp(Y)N)?		
10 Were correct bottle(s) used for the test(s) indicated?	(Yes) No	
11 Sufficient quantity received to perform indicated analyses?	(Yes) No	
12 Are these work share samples and all listed on the COC?	(Yes) No	
If yes, Questions 13-17 have been checked at the originating laboratory		
13 Were all preserved sample(s) at the correct pH upon receipt?	Yes No NA	pH Strip Lot# HC447997
14. Were VOAs on the COC?	Yes No	
15 Were air bubbles >6 mm in any VOA vials? ● ⬅ Larger than this.	Yes No NA	
16 Was a VOA trip blank present in the cooler(s)? Trip Blank Lot #	Yes No	
17 Was a LL Hg or Me Hg trip blank present?	Yes No	

Contacted PM Date by via Verbal Voice Mail Other

Concerning

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES ☐ additional next page

Samples processed by:

19. SAMPLE CONDITION

Sample(s) were received after the recommended holding time had expired.

Sample(s) were received in a broken container

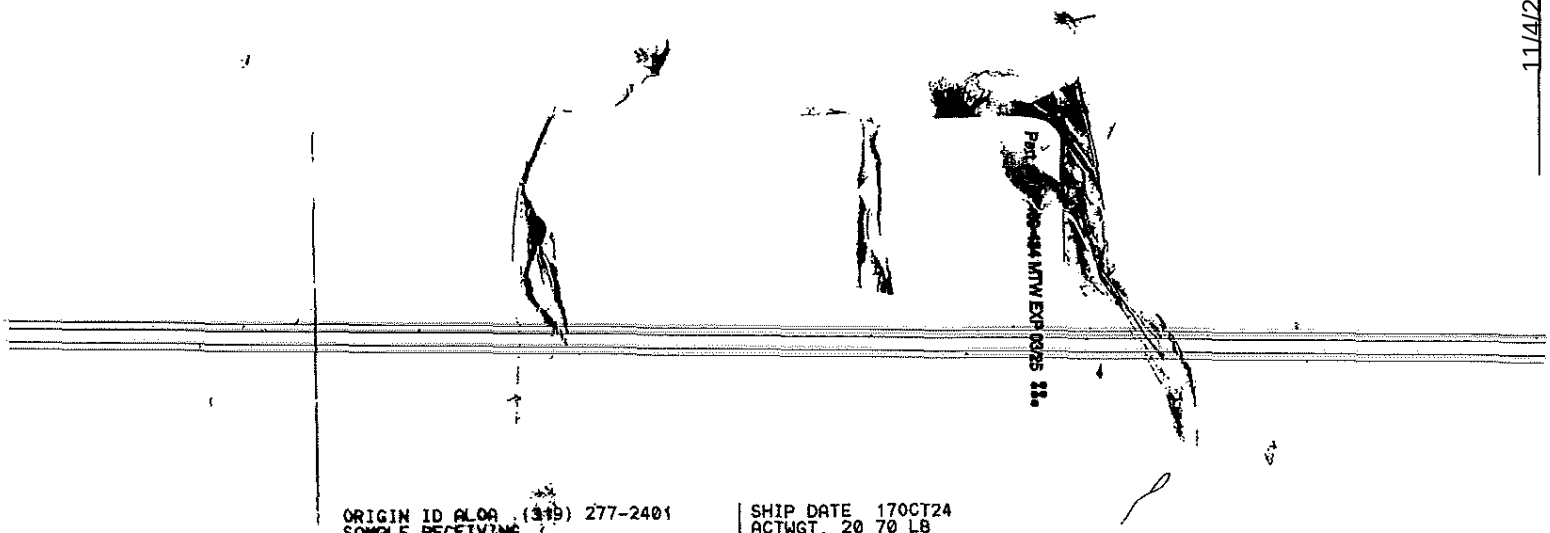
Sample(s) were received with bubble >6 mm in diameter (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) were further preserved in the laboratory

Time preserved. Preservative(s) added/Lot number(s):

VOA Sample Preservation - Date/Time VOAs Frozen.



ORIGIN ID ALOA (319) 277-2401
SAMPLE RECEIVING
EUROFINS TESTAMERICA
3019 VENTURE WAY

CEDAR FALLS, IA 50613
UNITED STATES US

SHIP DATE 17OCT24
ACTWGT 20 70 LB
CAD 0870970/CAFE3855

BILL SENDER

TO SHIPPING/RECEIVING
EUROFINS ENVIRONMENT TESTING NORTH
180 S. VAN BUREN AVENUE

BARBERTON OH 44203
(330) 497-9396
REF S310-99477

FedEx Express

FRI - 18 OCT 10:30A
PRIORITY OVERNIGHT

TRK# 0201 4085 8613 1529

XS CAKA

44203
OH-US CLE

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone: 319-277-2401 Fax: 319-277-2425

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Bindert, Zach T	Carrier Tracking No(s):	COC No: 310-77463.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Zach.Bindert@et.eurofinsus.com	State of Origin: Iowa	Page: Page 1 of 1
Company: Eurofins Lancaster Laboratories Environm		Accreditations Required (See note): State - Iowa; State Program - Iowa		Job #: 310-293059-1
Address: 2425 New Holland Pike, ,	Due Date Requested: 10/30/2024			Preservation Codes: -
City: Lancaster	TAT Requested (days):			
State, Zip: PA, 17601				
Phone: 717-656-2300(Tel)	PO #:			
Email:	WO #:			
Project Name: Black Hawk County Landfill (IDNR)	Project #: 31017149			
Site: 310 - Black Hawk County (IDNR)	SSOW#:			Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8151A/8151A_AP Default List	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
OW-402B (310-293059-1)	10/16/24	09:30 Central	G	Water			X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing North Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing North Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing North Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing North Central, LLC.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		10/17/24 1452				
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 10/18/24 10:00	Company ECCBT

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: R: 2.6 C: 2.2

Ver: 05/06/2024

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-293059-1

Login Number: 293059

List Source: Eurofins Cedar Falls

List Number: 1

Creator: Homolar, Dana J

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-293059-1

Login Number: 293059
List Number: 3
Creator: Santiago, Nathaniel

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC
List Creation: 10/18/24 03:45 PM

Question	Answer	Comment
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature acceptable,where thermal pres is required(</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV:Container Temp acceptable,where thermal pres is required (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
Sample custody seals are intact.	N/A	
VOA sample vials do not have headspace >6mm in diameter (none, if from WV)?	N/A	

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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

ANALYTICAL REPORT

PREPARED FOR

Attn: Chris Oelkers
AECOM
501 Sycamore Street
Suite #222
Waterloo, Iowa 50703

Generated 11/5/2024 12:58:27 PM

JOB DESCRIPTION

Black Hawk County Landfill (IDNR)
Fall 2024

JOB NUMBER

310-293338-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

myEOL

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



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11/5/2024 12:58:27 PM

Authorized for release by
Zach Bindert, Senior Project Manager
Zach.Bindert@et.eurofinsus.com
(319)595-2016

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Job ID: 310-293338-1 — Eurofins Cedar Falls

Job Narrative
310-293338-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 10/22/2024 11:45 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.5°C.

GC/MS VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Field Service / Mobile Lab
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Sample Summary

Client: AECOM
Job ID: 310-293338-1
Project/Site: Black Hawk County Landfill (IDNR)

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-293338-1	MW-603B	Water	10/21/24 11:45	10/22/24 11:45
310-293338-2	MW-604B	Water	10/21/24 14:00	10/22/24 11:45
310-293338-3	Trip Blank	Water	10/21/24 06:00	10/22/24 11:45
310-293338-4	MW-501B	Water	10/21/24 10:00	10/22/24 11:45
310-293338-5	MW-602B	Water	10/21/24 11:00	10/22/24 11:45

Detection Summary

Client: AECOM
Job ID: 310-293338-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: MW-603B — Lab Sample ID: 310-293338-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.742	J	2.00	0.530	ug/L	1		6020B	Total/NA
Barium	34.3		2.00	0.660	ug/L	1		6020B	Total/NA
Field Turbidity	1.01				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-604B — Lab Sample ID: 310-293338-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	77.5		2.00	0.660	ug/L	1		6020B	Total/NA
Chromium	3.42	J	5.00	1.20	ug/L	1		6020B	Total/NA
Cobalt	0.485	J	0.500	0.170	ug/L	1		6020B	Total/NA
Nickel	5.50		5.00	2.10	ug/L	1		6020B	Total/NA
Total Suspended Solids	2.38		1.88	1.39	mg/L	1		I-3765-85	Total/NA
Field Turbidity	1.80				NTU	1		Field Sampling	Total/NA

Client Sample ID: Trip Blank — Lab Sample ID: 310-293338-3

No Detections.

Client Sample ID: MW-501B — Lab Sample ID: 310-293338-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	128		2.00	0.660	ug/L	1		6020B	Total/NA
Chromium	4.04	J	5.00	1.20	ug/L	1		6020B	Total/NA
Cobalt	0.411	J	0.500	0.170	ug/L	1		6020B	Total/NA
Copper	2.50	J	5.00	1.80	ug/L	1		6020B	Total/NA
Nickel	14.0		5.00	2.10	ug/L	1		6020B	Total/NA
Total Suspended Solids	1.63	J	1.88	1.39	mg/L	1		I-3765-85	Total/NA
Field Turbidity	5.83				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-602B — Lab Sample ID: 310-293338-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	109		2.00	0.660	ug/L	1		6020B	Total/NA
Cadmium	0.175	J	0.200	0.100	ug/L	1		6020B	Total/NA
Chromium	3.31	J	5.00	1.20	ug/L	1		6020B	Total/NA
Cobalt	1.99		0.500	0.170	ug/L	1		6020B	Total/NA
Nickel	27.5		5.00	2.10	ug/L	1		6020B	Total/NA
Vanadium	1.76	J	5.00	1.10	ug/L	1		6020B	Total/NA
Total Suspended Solids	1.50	J	1.88	1.39	mg/L	1		I-3765-85	Total/NA
Field Turbidity	2.51				NTU	1		Field Sampling	Total/NA

This Detection Summary does not include radiochemical test results.

Client: AECOM
Job ID: 310-293338-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: MW-603B
Lab Sample ID: 310-293338-1
Date Collected: 10/21/24 11:45
Matrix: Water
Date Received: 10/22/24 11:45

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			10/24/24 19:43	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			10/24/24 19:43	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			10/24/24 19:43	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			10/24/24 19:43	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			10/24/24 19:43	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			10/24/24 19:43	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			10/24/24 19:43	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			10/24/24 19:43	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			10/24/24 19:43	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			10/24/24 19:43	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			10/24/24 19:43	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			10/24/24 19:43	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			10/24/24 19:43	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			10/24/24 19:43	1
2-Hexanone	<2.00		10.0	2.00	ug/L			10/24/24 19:43	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			10/24/24 19:43	1
Acetone	<3.10		10.0	3.10	ug/L			10/24/24 19:43	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			10/24/24 19:43	1
Benzene	<0.220		0.500	0.220	ug/L			10/24/24 19:43	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			10/24/24 19:43	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			10/24/24 19:43	1
Bromoform	<0.780		5.00	0.780	ug/L			10/24/24 19:43	1
Bromomethane	<1.10		4.00	1.10	ug/L			10/24/24 19:43	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			10/24/24 19:43	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			10/24/24 19:43	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			10/24/24 19:43	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			10/24/24 19:43	1
Chloroethane	<0.790		4.00	0.790	ug/L			10/24/24 19:43	1
Chloroform	<1.30		3.00	1.30	ug/L			10/24/24 19:43	1
Chloromethane	<0.610		3.00	0.610	ug/L			10/24/24 19:43	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			10/24/24 19:43	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			10/24/24 19:43	1
Dibromomethane	<0.330		1.00	0.330	ug/L			10/24/24 19:43	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			10/24/24 19:43	1
Iodomethane	<7.00		10.0	7.00	ug/L			10/24/24 19:43	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			10/24/24 19:43	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			10/24/24 19:43	1
o-Xylene	<0.400		1.00	0.400	ug/L			10/24/24 19:43	1
Styrene	<0.370		1.00	0.370	ug/L			10/24/24 19:43	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			10/24/24 19:43	1
Toluene	<0.430		1.00	0.430	ug/L			10/24/24 19:43	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			10/24/24 19:43	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			10/24/24 19:43	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			10/24/24 19:43	1
Trichloroethene	<0.430		1.00	0.430	ug/L			10/24/24 19:43	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			10/24/24 19:43	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			10/24/24 19:43	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			10/24/24 19:43	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			10/24/24 19:43	1

Client: AECOM
Job ID: 310-293338-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: MW-603B
Lab Sample ID: 310-293338-1
Date Collected: 10/21/24 11:45
Matrix: Water
Date Received: 10/22/24 11:45

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*117*		*73 - 130*		*10/24/24 19:43*	*1*
Toluene-d8 (Surr)	*95*		*80 - 120*		*10/24/24 19:43*	*1*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*		*10/24/24 19:43*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		10/24/24 09:30	11/01/24 21:36	1
Arsenic	**0.742**	**J**	2.00	0.530	ug/L		10/24/24 09:30	11/04/24 17:29	1
Barium	**34.3**		2.00	0.660	ug/L		10/24/24 09:30	11/01/24 21:36	1
Beryllium	<0.330		1.00	0.330	ug/L		10/24/24 09:30	11/01/24 21:36	1
Cadmium	<0.100		0.200	0.100	ug/L		10/24/24 09:30	11/01/24 21:36	1
Chromium	<1.20		5.00	1.20	ug/L		10/24/24 09:30	11/01/24 21:36	1
Cobalt	<0.170		0.500	0.170	ug/L		10/24/24 09:30	11/01/24 21:36	1
Copper	<1.80		5.00	1.80	ug/L		10/24/24 09:30	11/01/24 21:36	1
Lead	<0.260		0.500	0.260	ug/L		10/24/24 09:30	11/01/24 21:36	1
Nickel	<2.10		5.00	2.10	ug/L		10/24/24 09:30	11/01/24 21:36	1
Selenium	<1.40		5.00	1.40	ug/L		10/24/24 09:30	11/01/24 21:36	1
Silver	<0.500		1.00	0.500	ug/L		10/24/24 09:30	11/01/24 21:36	1
Thallium	<0.570		1.00	0.570	ug/L		10/24/24 09:30	11/01/24 21:36	1
Vanadium	<1.10		5.00	1.10	ug/L		10/24/24 09:30	11/01/24 21:36	1
Zinc	<9.70		20.0	9.70	ug/L		10/24/24 09:30	11/01/24 21:36	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	<1.39		1.88	1.39	mg/L			10/23/24 12:52	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**1.01**				NTU			10/21/24 11:45	1

Client: AECOM
Job ID: 310-293338-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: MW-604B
Lab Sample ID: 310-293338-2
Date Collected: 10/21/24 14:00
Matrix: Water
Date Received: 10/22/24 11:45

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			10/24/24 20:05	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			10/24/24 20:05	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			10/24/24 20:05	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			10/24/24 20:05	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			10/24/24 20:05	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			10/24/24 20:05	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			10/24/24 20:05	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			10/24/24 20:05	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			10/24/24 20:05	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			10/24/24 20:05	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			10/24/24 20:05	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			10/24/24 20:05	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			10/24/24 20:05	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			10/24/24 20:05	1
2-Hexanone	<2.00		10.0	2.00	ug/L			10/24/24 20:05	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			10/24/24 20:05	1
Acetone	<3.10		10.0	3.10	ug/L			10/24/24 20:05	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			10/24/24 20:05	1
Benzene	<0.220		0.500	0.220	ug/L			10/24/24 20:05	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			10/24/24 20:05	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			10/24/24 20:05	1
Bromoform	<0.780		5.00	0.780	ug/L			10/24/24 20:05	1
Bromomethane	<1.10		4.00	1.10	ug/L			10/24/24 20:05	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			10/24/24 20:05	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			10/24/24 20:05	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			10/24/24 20:05	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			10/24/24 20:05	1
Chloroethane	<0.790		4.00	0.790	ug/L			10/24/24 20:05	1
Chloroform	<1.30		3.00	1.30	ug/L			10/24/24 20:05	1
Chloromethane	<0.610		3.00	0.610	ug/L			10/24/24 20:05	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			10/24/24 20:05	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			10/24/24 20:05	1
Dibromomethane	<0.330		1.00	0.330	ug/L			10/24/24 20:05	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			10/24/24 20:05	1
Iodomethane	<7.00		10.0	7.00	ug/L			10/24/24 20:05	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			10/24/24 20:05	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			10/24/24 20:05	1
o-Xylene	<0.400		1.00	0.400	ug/L			10/24/24 20:05	1
Styrene	<0.370		1.00	0.370	ug/L			10/24/24 20:05	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			10/24/24 20:05	1
Toluene	<0.430		1.00	0.430	ug/L			10/24/24 20:05	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			10/24/24 20:05	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			10/24/24 20:05	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			10/24/24 20:05	1
Trichloroethene	<0.430		1.00	0.430	ug/L			10/24/24 20:05	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			10/24/24 20:05	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			10/24/24 20:05	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			10/24/24 20:05	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			10/24/24 20:05	1

Client: AECOM
Job ID: 310-293338-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: MW-604B
Lab Sample ID: 310-293338-2

Date Collected: 10/21/24 14:00
Matrix: Water

Date Received: 10/22/24 11:45

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*111*		*73 - 130*		*10/24/24 20:05*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*10/24/24 20:05*	*1*
4-Bromofluorobenzene (Surr)	*106*		*80 - 120*		*10/24/24 20:05*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		10/24/24 09:30	11/01/24 21:51	1
Arsenic	<0.530		2.00	0.530	ug/L		10/24/24 09:30	11/04/24 17:31	1
Barium	**77.5**		2.00	0.660	ug/L		10/24/24 09:30	11/01/24 21:51	1
Beryllium	<0.330		1.00	0.330	ug/L		10/24/24 09:30	11/01/24 21:51	1
Cadmium	<0.100		0.200	0.100	ug/L		10/24/24 09:30	11/01/24 21:51	1
Chromium	**3.42**	**J**	5.00	1.20	ug/L		10/24/24 09:30	11/01/24 21:51	1
Cobalt	**0.485**	**J**	0.500	0.170	ug/L		10/24/24 09:30	11/01/24 21:51	1
Copper	<1.80		5.00	1.80	ug/L		10/24/24 09:30	11/01/24 21:51	1
Lead	<0.260		0.500	0.260	ug/L		10/24/24 09:30	11/04/24 17:31	1
Nickel	**5.50**		5.00	2.10	ug/L		10/24/24 09:30	11/01/24 21:51	1
Selenium	<1.40		5.00	1.40	ug/L		10/24/24 09:30	11/01/24 21:51	1
Silver	<0.500		1.00	0.500	ug/L		10/24/24 09:30	11/01/24 21:51	1
Thallium	<0.570		1.00	0.570	ug/L		10/24/24 09:30	11/01/24 21:51	1
Vanadium	<1.10		5.00	1.10	ug/L		10/24/24 09:30	11/01/24 21:51	1
Zinc	<9.70		20.0	9.70	ug/L		10/24/24 09:30	11/04/24 17:31	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**2.38**		1.88	1.39	mg/L			10/23/24 12:52	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**1.80**				NTU			10/21/24 14:00	1

Client: AECOM
Job ID: 310-293338-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Trip Blank
Lab Sample ID: 310-293338-3
Date Collected: 10/21/24 06:00
Matrix: Water
Date Received: 10/22/24 11:45

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			10/24/24 19:00	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			10/24/24 19:00	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			10/24/24 19:00	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			10/24/24 19:00	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			10/24/24 19:00	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			10/24/24 19:00	1
1,1-Dichloropropene	<0.430		1.00	0.430	ug/L			10/24/24 19:00	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			10/24/24 19:00	1
1,2,4-Trichlorobenzene	<0.750		5.00	0.750	ug/L			10/24/24 19:00	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			10/24/24 19:00	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			10/24/24 19:00	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			10/24/24 19:00	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			10/24/24 19:00	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			10/24/24 19:00	1
1,3-Dichlorobenzene	<0.300		1.00	0.300	ug/L			10/24/24 19:00	1
1,3-Dichloropropane	<0.400		1.00	0.400	ug/L			10/24/24 19:00	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			10/24/24 19:00	1
2,2-Dichloropropane	<0.690		4.00	0.690	ug/L			10/24/24 19:00	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			10/24/24 19:00	1
2-Hexanone	<2.00		10.0	2.00	ug/L			10/24/24 19:00	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			10/24/24 19:00	1
Acetone	<3.10		10.0	3.10	ug/L			10/24/24 19:00	1
Acrolein	<3.60		10.0	3.60	ug/L			10/24/24 19:00	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			10/24/24 19:00	1
Allyl chloride	<0.700		2.00	0.700	ug/L			10/24/24 19:00	1
Benzene	<0.220		0.500	0.220	ug/L			10/24/24 19:00	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			10/24/24 19:00	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			10/24/24 19:00	1
Bromoform	<0.780		5.00	0.780	ug/L			10/24/24 19:00	1
Bromomethane	<1.10		4.00	1.10	ug/L			10/24/24 19:00	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			10/24/24 19:00	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			10/24/24 19:00	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			10/24/24 19:00	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			10/24/24 19:00	1
Chloroethane	<0.790		4.00	0.790	ug/L			10/24/24 19:00	1
Chloroform	<1.30		3.00	1.30	ug/L			10/24/24 19:00	1
Chloromethane	<0.610		3.00	0.610	ug/L			10/24/24 19:00	1
Chloroprene	<0.230		1.00	0.230	ug/L			10/24/24 19:00	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			10/24/24 19:00	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			10/24/24 19:00	1
Dibromomethane	<0.330		1.00	0.330	ug/L			10/24/24 19:00	1
Dichlorodifluoromethane	<0.250		3.00	0.250	ug/L			10/24/24 19:00	1
Ethyl methacrylate	<0.680		2.00	0.680	ug/L			10/24/24 19:00	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			10/24/24 19:00	1
Iodomethane	<7.00		10.0	7.00	ug/L			10/24/24 19:00	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			10/24/24 19:00	1
Methacrylonitrile	<3.30		10.0	3.30	ug/L			10/24/24 19:00	1
Methyl methacrylate	<0.760		2.00	0.760	ug/L			10/24/24 19:00	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			10/24/24 19:00	1

Client: AECOM
Job ID: 310-293338-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Trip Blank
Lab Sample ID: 310-293338-3
Date Collected: 10/21/24 06:00
Matrix: Water
Date Received: 10/22/24 11:45

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<3.00		5.00	3.00	ug/L			10/24/24 19:00	1
o-Xylene	<0.400		1.00	0.400	ug/L			10/24/24 19:00	1
Propionitrile	<3.40		10.0	3.40	ug/L			10/24/24 19:00	1
Styrene	<0.370		1.00	0.370	ug/L			10/24/24 19:00	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			10/24/24 19:00	1
Toluene	<0.430		1.00	0.430	ug/L			10/24/24 19:00	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			10/24/24 19:00	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			10/24/24 19:00	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			10/24/24 19:00	1
Trichloroethene	<0.430		1.00	0.430	ug/L			10/24/24 19:00	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			10/24/24 19:00	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			10/24/24 19:00	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			10/24/24 19:00	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			10/24/24 19:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*111*		*73 - 130*		*10/24/24 19:00*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*10/24/24 19:00*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*		*10/24/24 19:00*	*1*

Client: AECOM
Job ID: 310-293338-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: MW-501B
Lab Sample ID: 310-293338-4
Date Collected: 10/21/24 10:00
Matrix: Water
Date Received: 10/22/24 11:45

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			10/24/24 20:26	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			10/24/24 20:26	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			10/24/24 20:26	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			10/24/24 20:26	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			10/24/24 20:26	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			10/24/24 20:26	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			10/24/24 20:26	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			10/24/24 20:26	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			10/24/24 20:26	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			10/24/24 20:26	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			10/24/24 20:26	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			10/24/24 20:26	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			10/24/24 20:26	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			10/24/24 20:26	1
2-Hexanone	<2.00		10.0	2.00	ug/L			10/24/24 20:26	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			10/24/24 20:26	1
Acetone	<3.10		10.0	3.10	ug/L			10/24/24 20:26	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			10/24/24 20:26	1
Benzene	<0.220		0.500	0.220	ug/L			10/24/24 20:26	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			10/24/24 20:26	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			10/24/24 20:26	1
Bromoform	<0.780		5.00	0.780	ug/L			10/24/24 20:26	1
Bromomethane	<1.10		4.00	1.10	ug/L			10/24/24 20:26	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			10/24/24 20:26	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			10/24/24 20:26	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			10/24/24 20:26	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			10/24/24 20:26	1
Chloroethane	<0.790		4.00	0.790	ug/L			10/24/24 20:26	1
Chloroform	<1.30		3.00	1.30	ug/L			10/24/24 20:26	1
Chloromethane	<0.610		3.00	0.610	ug/L			10/24/24 20:26	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			10/24/24 20:26	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			10/24/24 20:26	1
Dibromomethane	<0.330		1.00	0.330	ug/L			10/24/24 20:26	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			10/24/24 20:26	1
Iodomethane	<7.00		10.0	7.00	ug/L			10/24/24 20:26	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			10/24/24 20:26	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			10/24/24 20:26	1
o-Xylene	<0.400		1.00	0.400	ug/L			10/24/24 20:26	1
Styrene	<0.370		1.00	0.370	ug/L			10/24/24 20:26	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			10/24/24 20:26	1
Toluene	<0.430		1.00	0.430	ug/L			10/24/24 20:26	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			10/24/24 20:26	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			10/24/24 20:26	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			10/24/24 20:26	1
Trichloroethene	<0.430		1.00	0.430	ug/L			10/24/24 20:26	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			10/24/24 20:26	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			10/24/24 20:26	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			10/24/24 20:26	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			10/24/24 20:26	1

Client: AECOM
Job ID: 310-293338-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: MW-501B
Lab Sample ID: 310-293338-4

Date Collected: 10/21/24 10:00
Matrix: Water

Date Received: 10/22/24 11:45

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*108*		*73 - 130*		*10/24/24 20:26*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*10/24/24 20:26*	*1*
4-Bromofluorobenzene (Surr)	*106*		*80 - 120*		*10/24/24 20:26*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		10/24/24 09:30	11/01/24 21:56	1
Arsenic	<0.530		2.00	0.530	ug/L		10/24/24 09:30	11/04/24 17:44	1
Barium	**128**		2.00	0.660	ug/L		10/24/24 09:30	11/01/24 21:56	1
Beryllium	<0.330		1.00	0.330	ug/L		10/24/24 09:30	11/01/24 21:56	1
Cadmium	<0.100		0.200	0.100	ug/L		10/24/24 09:30	11/01/24 21:56	1
Chromium	**4.04**	**J**	5.00	1.20	ug/L		10/24/24 09:30	11/01/24 21:56	1
Cobalt	**0.411**	**J**	0.500	0.170	ug/L		10/24/24 09:30	11/01/24 21:56	1
Copper	**2.50**	**J**	5.00	1.80	ug/L		10/24/24 09:30	11/01/24 21:56	1
Lead	<0.260		0.500	0.260	ug/L		10/24/24 09:30	11/04/24 17:44	1
Nickel	**14.0**		5.00	2.10	ug/L		10/24/24 09:30	11/01/24 21:56	1
Selenium	<1.40		5.00	1.40	ug/L		10/24/24 09:30	11/01/24 21:56	1
Silver	<0.500		1.00	0.500	ug/L		10/24/24 09:30	11/01/24 21:56	1
Thallium	<0.570		1.00	0.570	ug/L		10/24/24 09:30	11/01/24 21:56	1
Vanadium	<1.10		5.00	1.10	ug/L		10/24/24 09:30	11/01/24 21:56	1
Zinc	<9.70		20.0	9.70	ug/L		10/24/24 09:30	11/04/24 17:44	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**1.63**	**J**	1.88	1.39	mg/L			10/24/24 07:42	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**5.83**				NTU			10/21/24 10:00	1

Client: AECOM
Job ID: 310-293338-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: MW-602B
Lab Sample ID: 310-293338-5
Date Collected: 10/21/24 11:00
Matrix: Water
Date Received: 10/22/24 11:45

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			10/24/24 20:48	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			10/24/24 20:48	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			10/24/24 20:48	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			10/24/24 20:48	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			10/24/24 20:48	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			10/24/24 20:48	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			10/24/24 20:48	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			10/24/24 20:48	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			10/24/24 20:48	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			10/24/24 20:48	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			10/24/24 20:48	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			10/24/24 20:48	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			10/24/24 20:48	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			10/24/24 20:48	1
2-Hexanone	<2.00		10.0	2.00	ug/L			10/24/24 20:48	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			10/24/24 20:48	1
Acetone	<3.10		10.0	3.10	ug/L			10/24/24 20:48	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			10/24/24 20:48	1
Benzene	<0.220		0.500	0.220	ug/L			10/24/24 20:48	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			10/24/24 20:48	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			10/24/24 20:48	1
Bromoform	<0.780		5.00	0.780	ug/L			10/24/24 20:48	1
Bromomethane	<1.10		4.00	1.10	ug/L			10/24/24 20:48	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			10/24/24 20:48	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			10/24/24 20:48	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			10/24/24 20:48	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			10/24/24 20:48	1
Chloroethane	<0.790		4.00	0.790	ug/L			10/24/24 20:48	1
Chloroform	<1.30		3.00	1.30	ug/L			10/24/24 20:48	1
Chloromethane	<0.610		3.00	0.610	ug/L			10/24/24 20:48	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			10/24/24 20:48	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			10/24/24 20:48	1
Dibromomethane	<0.330		1.00	0.330	ug/L			10/24/24 20:48	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			10/24/24 20:48	1
Iodomethane	<7.00		10.0	7.00	ug/L			10/24/24 20:48	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			10/24/24 20:48	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			10/24/24 20:48	1
o-Xylene	<0.400		1.00	0.400	ug/L			10/24/24 20:48	1
Styrene	<0.370		1.00	0.370	ug/L			10/24/24 20:48	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			10/24/24 20:48	1
Toluene	<0.430		1.00	0.430	ug/L			10/24/24 20:48	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			10/24/24 20:48	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			10/24/24 20:48	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			10/24/24 20:48	1
Trichloroethene	<0.430		1.00	0.430	ug/L			10/24/24 20:48	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			10/24/24 20:48	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			10/24/24 20:48	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			10/24/24 20:48	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			10/24/24 20:48	1

Client: AECOM
Job ID: 310-293338-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: MW-602B
Lab Sample ID: 310-293338-5
Date Collected: 10/21/24 11:00
Matrix: Water
Date Received: 10/22/24 11:45

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*108*		*73 - 130*		*10/24/24 20:48*	*1*
Toluene-d8 (Surr)	*95*		*80 - 120*		*10/24/24 20:48*	*1*
4-Bromofluorobenzene (Surr)	*106*		*80 - 120*		*10/24/24 20:48*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		10/24/24 09:30	11/01/24 21:54	1
Arsenic	<0.530		2.00	0.530	ug/L		10/24/24 09:30	11/04/24 17:34	1
Barium	**109**		2.00	0.660	ug/L		10/24/24 09:30	11/01/24 21:54	1
Beryllium	<0.330		1.00	0.330	ug/L		10/24/24 09:30	11/01/24 21:54	1
Cadmium	**0.175**	**J**	0.200	0.100	ug/L		10/24/24 09:30	11/01/24 21:54	1
Chromium	**3.31**	**J**	5.00	1.20	ug/L		10/24/24 09:30	11/01/24 21:54	1
Cobalt	**1.99**		0.500	0.170	ug/L		10/24/24 09:30	11/01/24 21:54	1
Copper	<1.80		5.00	1.80	ug/L		10/24/24 09:30	11/01/24 21:54	1
Lead	<0.260		0.500	0.260	ug/L		10/24/24 09:30	11/04/24 17:34	1
Nickel	**27.5**		5.00	2.10	ug/L		10/24/24 09:30	11/01/24 21:54	1
Selenium	<1.40		5.00	1.40	ug/L		10/24/24 09:30	11/01/24 21:54	1
Silver	<0.500		1.00	0.500	ug/L		10/24/24 09:30	11/01/24 21:54	1
Thallium	<0.570		1.00	0.570	ug/L		10/24/24 09:30	11/01/24 21:54	1
Vanadium	**1.76**	**J**	5.00	1.10	ug/L		10/24/24 09:30	11/01/24 21:54	1
Zinc	<9.70		20.0	9.70	ug/L		10/24/24 09:30	11/04/24 17:34	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**1.50**	**J**	1.88	1.39	mg/L			10/24/24 07:42	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**2.51**				NTU			10/21/24 11:00	1

Definitions/Glossary

Client: AECOM
Job ID: 310-293338-1
Project/Site: Black Hawk County Landfill (IDNR)

Qualifiers

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Surrogate Summary

Client: AECOM
Job ID: 310-293338-1
Project/Site: Black Hawk County Landfill (IDNR)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-293338-1	MW-603B	117	95	104
310-293338-1 MS	MW-603B	101	98	102
310-293338-1 MSD	MW-603B	100	100	105
310-293338-2	MW-604B	111	98	106
310-293338-3	Trip Blank	111	96	102
310-293338-4	MW-501B	108	96	106
310-293338-5	MW-602B	108	95	106
LCS 310-437403/6	Lab Control Sample	97	99	102
LCS 310-437403/7	Lab Control Sample	110	98	104
MB 310-437403/5	Method Blank	112	96	105

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 310-437403/5
Matrix: Water
Analysis Batch: 437403

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			10/24/24 17:54	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			10/24/24 17:54	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			10/24/24 17:54	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			10/24/24 17:54	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			10/24/24 17:54	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			10/24/24 17:54	1
1,1-Dichloropropene	<0.430		1.00	0.430	ug/L			10/24/24 17:54	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			10/24/24 17:54	1
1,2,4-Trichlorobenzene	<0.750		5.00	0.750	ug/L			10/24/24 17:54	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			10/24/24 17:54	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			10/24/24 17:54	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			10/24/24 17:54	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			10/24/24 17:54	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			10/24/24 17:54	1
1,3-Dichlorobenzene	<0.300		1.00	0.300	ug/L			10/24/24 17:54	1
1,3-Dichloropropane	<0.400		1.00	0.400	ug/L			10/24/24 17:54	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			10/24/24 17:54	1
2,2-Dichloropropane	<0.690		4.00	0.690	ug/L			10/24/24 17:54	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			10/24/24 17:54	1
2-Hexanone	<2.00		10.0	2.00	ug/L			10/24/24 17:54	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			10/24/24 17:54	1
Acetone	<3.10		10.0	3.10	ug/L			10/24/24 17:54	1
Acrolein	<3.60		10.0	3.60	ug/L			10/24/24 17:54	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			10/24/24 17:54	1
Allyl chloride	<0.700		2.00	0.700	ug/L			10/24/24 17:54	1
Benzene	<0.220		0.500	0.220	ug/L			10/24/24 17:54	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			10/24/24 17:54	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			10/24/24 17:54	1
Bromoform	<0.780		5.00	0.780	ug/L			10/24/24 17:54	1
Bromomethane	<1.10		4.00	1.10	ug/L			10/24/24 17:54	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			10/24/24 17:54	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			10/24/24 17:54	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			10/24/24 17:54	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			10/24/24 17:54	1
Chloroethane	<0.790		4.00	0.790	ug/L			10/24/24 17:54	1
Chloroform	<1.30		3.00	1.30	ug/L			10/24/24 17:54	1
Chloromethane	<0.610		3.00	0.610	ug/L			10/24/24 17:54	1
Chloroprene	<0.230		1.00	0.230	ug/L			10/24/24 17:54	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			10/24/24 17:54	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			10/24/24 17:54	1
Dibromomethane	<0.330		1.00	0.330	ug/L			10/24/24 17:54	1
Dichlorodifluoromethane	<0.250		3.00	0.250	ug/L			10/24/24 17:54	1
Ethyl methacrylate	<0.680		2.00	0.680	ug/L			10/24/24 17:54	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			10/24/24 17:54	1
Iodomethane	<7.00		10.0	7.00	ug/L			10/24/24 17:54	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			10/24/24 17:54	1
Methacrylonitrile	<3.30		10.0	3.30	ug/L			10/24/24 17:54	1
Methyl methacrylate	<0.760		2.00	0.760	ug/L			10/24/24 17:54	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-437403/5
Matrix: Water
Analysis Batch: 437403

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylene Chloride	<1.70		5.00	1.70	ug/L			10/24/24 17:54	1
Naphthalene	<3.00		5.00	3.00	ug/L			10/24/24 17:54	1
o-Xylene	<0.400		1.00	0.400	ug/L			10/24/24 17:54	1
Propionitrile	<3.40		10.0	3.40	ug/L			10/24/24 17:54	1
Styrene	<0.370		1.00	0.370	ug/L			10/24/24 17:54	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			10/24/24 17:54	1
Toluene	<0.430		1.00	0.430	ug/L			10/24/24 17:54	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			10/24/24 17:54	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			10/24/24 17:54	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			10/24/24 17:54	1
Trichloroethene	<0.430		1.00	0.430	ug/L			10/24/24 17:54	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			10/24/24 17:54	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			10/24/24 17:54	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			10/24/24 17:54	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			10/24/24 17:54	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*112*		*73 - 130*		*10/24/24 17:54*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*10/24/24 17:54*	*1*
4-Bromofluorobenzene (Surr)	*105*		*80 - 120*		*10/24/24 17:54*	*1*

Lab Sample ID: LCS 310-437403/6
Matrix: Water
Analysis Batch: 437403

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	20.0	17.30		ug/L		87	71 - 120
1,1,1-Trichloroethane	20.0	18.77		ug/L		94	73 - 129
1,1,2,2-Tetrachloroethane	20.0	18.06		ug/L		90	68 - 124
1,1,2-Trichloroethane	20.0	19.62		ug/L		98	73 - 123
1,1-Dichloroethane	20.0	17.95		ug/L		90	70 - 127
1,1-Dichloroethene	20.0	18.18		ug/L		91	63 - 132
1,1-Dichloropropene	20.0	18.55		ug/L		93	69 - 132
1,2,3-Trichloropropane	20.0	17.98		ug/L		90	65 - 127
1,2,4-Trichlorobenzene	20.0	18.83		ug/L		94	68 - 124
1,2-Dibromo-3-Chloropropane	20.0	17.58		ug/L		88	50 - 150
1,2-Dibromoethane (EDB)	20.0	19.55		ug/L		98	75 - 125
1,2-Dichlorobenzene	20.0	18.21		ug/L		91	74 - 120
1,2-Dichloroethane	20.0	19.11		ug/L		96	71 - 125
1,2-Dichloropropane	20.0	20.37		ug/L		102	73 - 124
1,3-Dichlorobenzene	20.0	17.35		ug/L		87	72 - 120
1,3-Dichloropropane	20.0	19.93		ug/L		100	72 - 125
1,4-Dichlorobenzene	20.0	17.71		ug/L		89	72 - 120
2,2-Dichloropropane	20.0	16.75		ug/L		84	50 - 150
2-Butanone (MEK)	40.0	32.71		ug/L		82	50 - 150
2-Hexanone	40.0	38.63		ug/L		97	60 - 140
4-Methyl-2-pentanone (MIBK)	40.0	38.42		ug/L		96	60 - 139
Acetone	40.0	35.90		ug/L		90	50 - 150

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-437403/6
Matrix: Water
Analysis Batch: 437403

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Acrolein			95.5	87.84		ug/L		92	49 - 150		
Acrylonitrile			200	186.0		ug/L		93	50 - 150		
Allyl chloride			20.0	18.91		ug/L		95	49 - 150		
Benzene			20.0	18.31		ug/L		92	72 - 124		
Bromochloromethane			20.0	19.41		ug/L		97	73 - 130		
Bromodichloromethane			20.0	19.10		ug/L		95	74 - 122		
Bromoform			20.0	18.22		ug/L		91	61 - 122		
Carbon disulfide			20.0	17.72		ug/L		89	59 - 135		
Carbon tetrachloride			20.0	19.57		ug/L		98	67 - 132		
Chlorobenzene			20.0	18.11		ug/L		91	76 - 120		
Chlorodibromomethane			20.0	19.43		ug/L		97	71 - 121		
Chloroform			20.0	18.93		ug/L		95	72 - 125		
Chloroprene			20.0	17.72		ug/L		89	69 - 133		
cis-1,2-Dichloroethene			20.0	18.98		ug/L		95	74 - 123		
cis-1,3-Dichloropropene			20.0	18.71		ug/L		94	71 - 125		
Dibromomethane			20.0	19.31		ug/L		97	74 - 125		
Ethyl methacrylate			20.0	19.89		ug/L		99	70 - 129		
Ethylbenzene			20.0	18.29		ug/L		91	74 - 122		
Iodomethane			20.0	13.17		ug/L		66	10 - 150		
Methacrylonitrile			200	185.0		ug/L		92	69 - 129		
Methyl methacrylate			40.0	38.55		ug/L		96	68 - 131		
Methylene Chloride			20.0	19.41		ug/L		97	50 - 150		
Naphthalene			20.0	19.03		ug/L		95	50 - 150		
Propionitrile			200	198.9		ug/L		99	63 - 135		
Styrene			20.0	17.93		ug/L		90	74 - 121		
Tetrachloroethene			20.0	18.53		ug/L		93	71 - 130		
Toluene			20.0	18.09		ug/L		90	74 - 123		
trans-1,2-Dichloroethene			20.0	18.57		ug/L		93	70 - 126		
trans-1,3-Dichloropropene			20.0	16.62		ug/L		83	69 - 123		
trans-1,4-Dichloro-2-butene			20.0	16.08		ug/L		80	50 - 150		
Trichloroethene			20.0	18.86		ug/L		94	72 - 126		
Vinyl acetate			40.0	30.72		ug/L		77	50 - 150		
Xylenes, Total			40.0	35.87		ug/L		90	73 - 123		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*97*		*73 - 130*
Toluene-d8 (Surr)	*99*		*80 - 120*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*

Lab Sample ID: LCS 310-437403/7
Matrix: Water
Analysis Batch: 437403

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Bromomethane			20.0	15.74		ug/L		79	23 - 150		
Chloroethane			20.0	18.25		ug/L		91	54 - 136		
Chloromethane			20.0	17.26		ug/L		86	38 - 150		
Dichlorodifluoromethane			20.0	16.22		ug/L		81	39 - 150		

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-437403/7
Matrix: Water
Analysis Batch: 437403

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Trichlorofluoromethane			20.0	19.91		ug/L		100	54 - 149		
Vinyl chloride			20.0	18.77		ug/L		94	56 - 140		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*110*		*73 - 130*
Toluene-d8 (Surr)	*98*		*80 - 120*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*

Lab Sample ID: 310-293338-1 MS
Matrix: Water
Analysis Batch: 437403

Client Sample ID: MW-603B
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
1,1,1,2-Tetrachloroethane	<0.380		25.0	19.07		ug/L		76	55 - 130		
1,1,1-Trichloroethane	<0.190		25.0	20.40		ug/L		82	52 - 130		
1,1,2,2-Tetrachloroethane	<0.470		25.0	21.59		ug/L		86	54 - 130		
1,1,2-Trichloroethane	<0.450		25.0	20.63		ug/L		83	58 - 130		
1,1-Dichloroethane	<0.220		25.0	19.25		ug/L		77	49 - 130		
1,1-Dichloroethene	<0.560		25.0	19.64		ug/L		79	37 - 132		
1,1-Dichloropropene	<0.430		25.0	20.67		ug/L		83	50 - 132		
1,2,3-Trichloropropane	<0.590		25.0	22.07		ug/L		88	49 - 130		
1,2,4-Trichlorobenzene	<0.750		25.0	22.54		ug/L		90	55 - 130		
1,2-Dibromo-3-Chloropropane	<1.20		25.0	21.91		ug/L		88	38 - 150		
1,2-Dibromoethane (EDB)	<0.340		25.0	20.77		ug/L		83	60 - 130		
1,2-Dichlorobenzene	<0.370		25.0	21.25		ug/L		85	59 - 130		
1,2-Dichloroethane	<0.390		25.0	20.53		ug/L		82	51 - 130		
1,2-Dichloropropane	<0.270		25.0	20.84		ug/L		83	57 - 130		
1,3-Dichlorobenzene	<0.300		25.0	19.66		ug/L		79	57 - 130		
1,3-Dichloropropane	<0.400		25.0	20.94		ug/L		84	56 - 130		
1,4-Dichlorobenzene	<0.230		25.0	20.29		ug/L		81	57 - 130		
2,2-Dichloropropane	<0.690		25.0	16.17		ug/L		65	25 - 150		
2-Butanone (MEK)	<2.10		50.0	34.49		ug/L		69	38 - 150		
2-Hexanone	<2.00		50.0	45.87		ug/L		92	46 - 140		
4-Methyl-2-pentanone (MIBK)	<2.10		50.0	44.06		ug/L		88	47 - 139		
Acetone	<3.10		50.0	38.39		ug/L		77	31 - 150		
Acrolein	<3.60		119	76.91		ug/L		64	25 - 150		
Acrylonitrile	<2.20		250	198.7		ug/L		79	40 - 150		
Allyl chloride	<0.700		25.0	19.58		ug/L		78	28 - 150		
Benzene	<0.220		25.0	19.67		ug/L		79	46 - 130		
Bromochloromethane	<0.540		25.0	20.58		ug/L		82	57 - 130		
Bromodichloromethane	<0.390		25.0	20.88		ug/L		84	57 - 130		
Bromoform	<0.780		25.0	21.03		ug/L		84	44 - 130		
Carbon disulfide	<0.450		25.0	19.71		ug/L		79	38 - 135		
Carbon tetrachloride	<0.650		25.0	20.52		ug/L		82	45 - 132		
Chlorobenzene	<0.400		25.0	19.55		ug/L		78	59 - 130		
Chlorodibromomethane	<0.750		25.0	20.35		ug/L		81	54 - 130		
Chloroform	<1.30		25.0	19.86		ug/L		79	51 - 130		
Chloroprene	<0.230		25.0	12.00		ug/L		48	43 - 133		

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 310-293338-1 MS
Matrix: Water
Analysis Batch: 437403

Client Sample ID: MW-603B
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
cis-1,2-Dichloroethene	<0.210		25.0	20.66		ug/L		83	45 - 130
cis-1,3-Dichloropropene	<0.250		25.0	18.74		ug/L		75	53 - 130
Dibromomethane	<0.330		25.0	20.61		ug/L		82	59 - 130
Ethyl methacrylate	<0.680		25.0	21.94		ug/L		88	54 - 130
Ethylbenzene	<0.310		25.0	19.31		ug/L		77	45 - 130
Iodomethane	<7.00		25.0	15.35		ug/L		61	10 - 150
Methacrylonitrile	<3.30		250	197.1		ug/L		79	55 - 130
Methyl methacrylate	<0.760		50.0	42.27		ug/L		85	44 - 139
Methylene Chloride	<1.70		25.0	20.91		ug/L		84	37 - 150
Naphthalene	<3.00		25.0	23.03		ug/L		92	40 - 150
Propionitrile	<3.40		250	211.0		ug/L		84	49 - 135
Styrene	<0.370		25.0	19.16		ug/L		77	47 - 130
Tetrachloroethene	<0.480		25.0	20.05		ug/L		80	47 - 130
Toluene	<0.430		25.0	19.68		ug/L		79	51 - 130
trans-1,2-Dichloroethene	<0.270		25.0	20.42		ug/L		82	48 - 130
trans-1,3-Dichloropropene	<0.560		25.0	16.89		ug/L		68	50 - 130
trans-1,4-Dichloro-2-butene	<1.10		25.0	16.34		ug/L		65	26 - 150
Trichloroethene	<0.430		25.0	20.61		ug/L		82	51 - 130
Vinyl acetate	<2.50		50.0	33.61		ug/L		67	29 - 150
Xylenes, Total	<0.400		50.0	38.56		ug/L		77	43 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*101*		*73 - 130*
Toluene-d8 (Surr)	*98*		*80 - 120*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*

Lab Sample ID: 310-293338-1 MSD
Matrix: Water
Analysis Batch: 437403

Client Sample ID: MW-603B
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	<0.380		25.0	18.92		ug/L		76	55 - 130	1	20
1,1,1-Trichloroethane	<0.190		25.0	19.33		ug/L		77	52 - 130	5	20
1,1,2,2-Tetrachloroethane	<0.470		25.0	21.67		ug/L		87	54 - 130	0	20
1,1,2-Trichloroethane	<0.450		25.0	20.03		ug/L		80	58 - 130	3	20
1,1-Dichloroethane	<0.220		25.0	18.09		ug/L		72	49 - 130	6	20
1,1-Dichloroethene	<0.560		25.0	17.51		ug/L		70	37 - 132	11	26
1,1-Dichloropropene	<0.430		25.0	19.70		ug/L		79	50 - 132	5	20
1,2,3-Trichloropropane	<0.590		25.0	20.89		ug/L		84	49 - 130	5	26
1,2,4-Trichlorobenzene	<0.750		25.0	22.36		ug/L		89	55 - 130	1	20
1,2-Dibromo-3-Chloropropane	<1.20		25.0	22.38		ug/L		90	38 - 150	2	20
1,2-Dibromoethane (EDB)	<0.340		25.0	20.46		ug/L		82	60 - 130	1	20
1,2-Dichlorobenzene	<0.370		25.0	20.97		ug/L		84	59 - 130	1	20
1,2-Dichloroethane	<0.390		25.0	19.16		ug/L		77	51 - 130	7	20
1,2-Dichloropropane	<0.270		25.0	20.48		ug/L		82	57 - 130	2	20
1,3-Dichlorobenzene	<0.300		25.0	19.67		ug/L		79	57 - 130	0	20
1,3-Dichloropropane	<0.400		25.0	20.52		ug/L		82	56 - 130	2	20
1,4-Dichlorobenzene	<0.230		25.0	20.18		ug/L		81	57 - 130	1	20

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 310-293338-1 MSD
Matrix: Water
Analysis Batch: 437403

Client Sample ID: MW-603B
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,2-Dichloropropane	<0.690		25.0	15.33		ug/L		61	25 - 150	5	25
2-Butanone (MEK)	<2.10		50.0	36.05		ug/L		72	38 - 150	4	20
2-Hexanone	<2.00		50.0	47.82		ug/L		96	46 - 140	4	20
4-Methyl-2-pentanone (MIBK)	<2.10		50.0	43.87		ug/L		88	47 - 139	0	20
Acetone	<3.10		50.0	38.36		ug/L		77	31 - 150	0	29
Acrolein	<3.60		119	74.70		ug/L		63	25 - 150	3	31
Acrylonitrile	<2.20		250	198.5		ug/L		79	40 - 150	0	20
Allyl chloride	<0.700		25.0	20.02		ug/L		80	28 - 150	2	35
Benzene	<0.220		25.0	18.78		ug/L		75	46 - 130	5	20
Bromochloromethane	<0.540		25.0	19.32		ug/L		77	57 - 130	6	20
Bromodichloromethane	<0.390		25.0	19.52		ug/L		78	57 - 130	7	20
Bromoform	<0.780		25.0	20.89		ug/L		84	44 - 130	1	20
Carbon disulfide	<0.450		25.0	17.87		ug/L		71	38 - 135	10	30
Carbon tetrachloride	<0.650		25.0	19.49		ug/L		78	45 - 132	5	20
Chlorobenzene	<0.400		25.0	18.93		ug/L		76	59 - 130	3	20
Chlorodibromomethane	<0.750		25.0	20.56		ug/L		82	54 - 130	1	20
Chloroform	<1.30		25.0	18.72		ug/L		75	51 - 130	6	20
Chloroprene	<0.230		25.0	12.45		ug/L		50	43 - 133	4	20
cis-1,2-Dichloroethene	<0.210		25.0	18.65		ug/L		75	45 - 130	10	20
cis-1,3-Dichloropropene	<0.250		25.0	18.35		ug/L		73	53 - 130	2	20
Dibromomethane	<0.330		25.0	20.44		ug/L		82	59 - 130	1	20
Ethyl methacrylate	<0.680		25.0	21.50		ug/L		86	54 - 130	2	20
Ethylbenzene	<0.310		25.0	18.75		ug/L		75	45 - 130	3	20
Iodomethane	<7.00		25.0	17.50		ug/L		70	10 - 150	13	35
Methacrylonitrile	<3.30		250	198.8		ug/L		80	55 - 130	1	20
Methyl methacrylate	<0.760		50.0	41.74		ug/L		83	44 - 139	1	20
Methylene Chloride	<1.70		25.0	19.90		ug/L		80	37 - 150	5	24
Naphthalene	<3.00		25.0	24.28		ug/L		97	40 - 150	5	30
Propionitrile	<3.40		250	212.9		ug/L		85	49 - 135	1	20
Styrene	<0.370		25.0	18.41		ug/L		74	47 - 130	4	20
Tetrachloroethene	<0.480		25.0	18.92		ug/L		76	47 - 130	6	20
Toluene	<0.430		25.0	18.73		ug/L		75	51 - 130	5	20
trans-1,2-Dichloroethene	<0.270		25.0	18.42		ug/L		74	48 - 130	10	22
trans-1,3-Dichloropropene	<0.560		25.0	16.56		ug/L		66	50 - 130	2	20
trans-1,4-Dichloro-2-butene	<1.10		25.0	15.42		ug/L		62	26 - 150	6	23
Trichloroethene	<0.430		25.0	18.88		ug/L		76	51 - 130	9	20
Vinyl acetate	<2.50		50.0	30.19		ug/L		60	29 - 150	11	23
Xylenes, Total	<0.400		50.0	37.56		ug/L		75	43 - 130	3	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*100*		*73 - 130*
Toluene-d8 (Surr)	*100*		*80 - 120*
4-Bromofluorobenzene (Surr)	*105*		*80 - 120*

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-437300/1-A
Matrix: Water
Analysis Batch: 438523

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 437300

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		10/24/24 09:30	11/01/24 20:37	1
Barium	<0.660		2.00	0.660	ug/L		10/24/24 09:30	11/01/24 20:37	1
Beryllium	<0.330		1.00	0.330	ug/L		10/24/24 09:30	11/01/24 20:37	1
Cadmium	<0.100		0.200	0.100	ug/L		10/24/24 09:30	11/01/24 20:37	1
Chromium	<1.20		5.00	1.20	ug/L		10/24/24 09:30	11/01/24 20:37	1
Cobalt	<0.170		0.500	0.170	ug/L		10/24/24 09:30	11/01/24 20:37	1
Copper	<1.80		5.00	1.80	ug/L		10/24/24 09:30	11/01/24 20:37	1
Lead	<0.260		0.500	0.260	ug/L		10/24/24 09:30	11/01/24 20:37	1
Nickel	<2.10		5.00	2.10	ug/L		10/24/24 09:30	11/01/24 20:37	1
Selenium	<1.40		5.00	1.40	ug/L		10/24/24 09:30	11/01/24 20:37	1
Silver	<0.500		1.00	0.500	ug/L		10/24/24 09:30	11/01/24 20:37	1
Thallium	<0.570		1.00	0.570	ug/L		10/24/24 09:30	11/01/24 20:37	1
Vanadium	<1.10		5.00	1.10	ug/L		10/24/24 09:30	11/01/24 20:37	1
Zinc	<9.70		20.0	9.70	ug/L		10/24/24 09:30	11/01/24 20:37	1

Lab Sample ID: MB 310-437300/1-A
Matrix: Water
Analysis Batch: 438660

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 437300

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.530		2.00	0.530	ug/L		10/24/24 09:30	11/04/24 16:57	1

Lab Sample ID: LCS 310-437300/2-A
Matrix: Water
Analysis Batch: 438523

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 437300

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	200	197.9		ug/L		99	80 - 120
Barium	100	102.0		ug/L		102	80 - 120
Beryllium	100	103.8		ug/L		104	80 - 120
Cadmium	100	96.06		ug/L		96	80 - 120
Chromium	100	102.3		ug/L		102	80 - 120
Cobalt	100	99.39		ug/L		99	80 - 120
Copper	200	216.1		ug/L		108	80 - 120
Lead	200	201.1		ug/L		101	80 - 120
Nickel	200	205.4		ug/L		103	80 - 120
Selenium	400	405.7		ug/L		101	80 - 120
Silver	100	115.2		ug/L		115	80 - 120
Thallium	100	110.3		ug/L		110	80 - 120
Vanadium	100	103.1		ug/L		103	80 - 120
Zinc	200	177.2		ug/L		89	80 - 120

Lab Sample ID: LCS 310-437300/2-A
Matrix: Water
Analysis Batch: 438660

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 437300

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	200	218.3		ug/L		109	80 - 120

Client: AECOM
Job ID: 310-293338-1
Project/Site: Black Hawk County Landfill (IDNR)

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: MB 310-437259/1
Matrix: Water
Analysis Batch: 437259

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<3.70		5.00	3.70	mg/L			10/23/24 12:52	1

Lab Sample ID: LCS 310-437259/2
Matrix: Water
Analysis Batch: 437259

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	101.0		mg/L		101	81 - 116

Lab Sample ID: MB 310-437333/1
Matrix: Water
Analysis Batch: 437333

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<3.70		5.00	3.70	mg/L			10/24/24 07:42	1

Lab Sample ID: LCS 310-437333/2
Matrix: Water
Analysis Batch: 437333

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	94.00		mg/L		94	81 - 116

GC/MS VOA

Analysis Batch: 437403

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-293338-1	MW-603B	Total/NA	Water	8260D	
310-293338-2	MW-604B	Total/NA	Water	8260D	
310-293338-3	Trip Blank	Total/NA	Water	8260D	
310-293338-4	MW-501B	Total/NA	Water	8260D	
310-293338-5	MW-602B	Total/NA	Water	8260D	
MB 310-437403/5	Method Blank	Total/NA	Water	8260D	
LCS 310-437403/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-437403/7	Lab Control Sample	Total/NA	Water	8260D	
310-293338-1 MS	MW-603B	Total/NA	Water	8260D	
310-293338-1 MSD	MW-603B	Total/NA	Water	8260D	

Metals

Prep Batch: 437300

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-293338-1	MW-603B	Total/NA	Water	3005A	
310-293338-2	MW-604B	Total/NA	Water	3005A	
310-293338-4	MW-501B	Total/NA	Water	3005A	
310-293338-5	MW-602B	Total/NA	Water	3005A	
MB 310-437300/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-437300/2-A	Lab Control Sample	Total/NA	Water	3005A	

Analysis Batch: 438523

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-293338-1	MW-603B	Total/NA	Water	6020B	437300
310-293338-2	MW-604B	Total/NA	Water	6020B	437300
310-293338-4	MW-501B	Total/NA	Water	6020B	437300
310-293338-5	MW-602B	Total/NA	Water	6020B	437300
MB 310-437300/1-A	Method Blank	Total/NA	Water	6020B	437300
LCS 310-437300/2-A	Lab Control Sample	Total/NA	Water	6020B	437300

Analysis Batch: 438660

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-293338-1	MW-603B	Total/NA	Water	6020B	437300
310-293338-2	MW-604B	Total/NA	Water	6020B	437300
310-293338-4	MW-501B	Total/NA	Water	6020B	437300
310-293338-5	MW-602B	Total/NA	Water	6020B	437300
MB 310-437300/1-A	Method Blank	Total/NA	Water	6020B	437300
LCS 310-437300/2-A	Lab Control Sample	Total/NA	Water	6020B	437300

General Chemistry

Analysis Batch: 437259

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-293338-1	MW-603B	Total/NA	Water	I-3765-85	
310-293338-2	MW-604B	Total/NA	Water	I-3765-85	
MB 310-437259/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-437259/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Analysis Batch: 437333

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-293338-4	MW-501B	Total/NA	Water	I-3765-85	

General Chemistry (Continued)

Analysis Batch: 437333 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-293338-5	MW-602B	Total/NA	Water	I-3765-85	
MB 310-437333/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-437333/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Field Service / Mobile Lab

Analysis Batch: 437790

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-293338-1	MW-603B	Total/NA	Water	Field Sampling	
310-293338-2	MW-604B	Total/NA	Water	Field Sampling	
310-293338-4	MW-501B	Total/NA	Water	Field Sampling	
310-293338-5	MW-602B	Total/NA	Water	Field Sampling	

Lab Chronicle

Client: AECOM
Job ID: 310-293338-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: MW-603B
Lab Sample ID: 310-293338-1
Date Collected: 10/21/24 11:45
Matrix: Water
Date Received: 10/22/24 11:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	437403	WSE8	EET CF	10/24/24 19:43
Total/NA	Prep	3005A			437300	QTZ5	EET CF	10/24/24 09:30
Total/NA	Analysis	6020B		1	438660	NFT2	EET CF	11/04/24 17:29
Total/NA	Prep	3005A			437300	QTZ5	EET CF	10/24/24 09:30
Total/NA	Analysis	6020B		1	438523	A6US	EET CF	11/01/24 21:36
Total/NA	Analysis	I-3765-85		1	437259	DGU1	EET CF	10/23/24 12:52
Total/NA	Analysis	Field Sampling		1	437790	BJ0R	EET CF	10/21/24 11:45

Client Sample ID: MW-604B
Lab Sample ID: 310-293338-2
Date Collected: 10/21/24 14:00
Matrix: Water
Date Received: 10/22/24 11:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	437403	WSE8	EET CF	10/24/24 20:05
Total/NA	Prep	3005A			437300	QTZ5	EET CF	10/24/24 09:30
Total/NA	Analysis	6020B		1	438660	NFT2	EET CF	11/04/24 17:31
Total/NA	Prep	3005A			437300	QTZ5	EET CF	10/24/24 09:30
Total/NA	Analysis	6020B		1	438523	A6US	EET CF	11/01/24 21:51
Total/NA	Analysis	I-3765-85		1	437259	DGU1	EET CF	10/23/24 12:52
Total/NA	Analysis	Field Sampling		1	437790	BJ0R	EET CF	10/21/24 14:00

Client Sample ID: Trip Blank
Lab Sample ID: 310-293338-3
Date Collected: 10/21/24 06:00
Matrix: Water
Date Received: 10/22/24 11:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	437403	WSE8	EET CF	10/24/24 19:00

Client Sample ID: MW-501B
Lab Sample ID: 310-293338-4
Date Collected: 10/21/24 10:00
Matrix: Water
Date Received: 10/22/24 11:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	437403	WSE8	EET CF	10/24/24 20:26
Total/NA	Prep	3005A			437300	QTZ5	EET CF	10/24/24 09:30
Total/NA	Analysis	6020B		1	438660	NFT2	EET CF	11/04/24 17:44
Total/NA	Prep	3005A			437300	QTZ5	EET CF	10/24/24 09:30
Total/NA	Analysis	6020B		1	438523	A6US	EET CF	11/01/24 21:56
Total/NA	Analysis	I-3765-85		1	437333	DGU1	EET CF	10/24/24 07:42
Total/NA	Analysis	Field Sampling		1	437790	BJ0R	EET CF	10/21/24 10:00

Lab Chronicle

Client: AECOM
Job ID: 310-293338-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: MW-602B
Lab Sample ID: 310-293338-5

Date Collected: 10/21/24 11:00
Matrix: Water

Date Received: 10/22/24 11:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	437403	WSE8	EET CF	10/24/24 20:48
Total/NA	Prep	3005A			437300	QTZ5	EET CF	10/24/24 09:30
Total/NA	Analysis	6020B		1	438660	NFT2	EET CF	11/04/24 17:34
Total/NA	Prep	3005A			437300	QTZ5	EET CF	10/24/24 09:30
Total/NA	Analysis	6020B		1	438523	A6US	EET CF	11/01/24 21:54
Total/NA	Analysis	I-3765-85		1	437333	DGU1	EET CF	10/24/24 07:42
Total/NA	Analysis	Field Sampling		1	437790	BJ0R	EET CF	10/21/24 11:00

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Accreditation/Certification Summary

Client: AECOM
Job ID: 310-293338-1
Project/Site: Black Hawk County Landfill (IDNR)

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8260D		Water	1,2,4-Trichlorobenzene
8260D		Water	Allyl chloride
8260D		Water	Ethyl methacrylate
8260D		Water	m,p-Xylene
8260D		Water	o-Xylene
Field Sampling		Water	Field Turbidity

Method Summary

Client: AECOM
Job ID: 310-293338-1
Project/Site: Black Hawk County Landfill (IDNR)

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
Field Sampling	Field Sampling	EPA	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
5030B	Purge and Trap	SW846	EET CF

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

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310-293338 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: AECOM

City/State: CITY Waterloo STATE IA | Project: BHC / 95873

Receipt Information

Date/Time Received: DATE 10/22/24 TIME 1145 | Received By: TD

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ Lab Field Services ☑ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler?	☑ Yes	☐ No	*If yes:* Cooler ID:
Multiple Coolers?	☐ Yes	☑ No	*If yes:* Cooler # _____ of _____
Cooler Custody Seals Present?	☐ Yes	☑ No	*If yes:* Cooler custody seals intact? ☐ Yes ☐ No
Sample Custody Seals Present?	☐ Yes	☑ No	*If yes:* Sample custody seals intact? ☐ Yes ☐ No
Trip Blank Present?	☑ Yes	☐ No	*If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☑ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: P | Correction Factor (°C): 0.0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C) 2.5 | Corrected Temp (°C): 2.5

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g , bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE If yes, contact PM before proceeding If no, proceed with login

Additional Comments

Document CED-P-SAM-FRM45521
Revision: 26
Date 27 Jan 2022

Eurofins Cedar Falls

General temperature criteria is 0 to 6°C
Bacteria temperature criteria is 0 to 10°C

Eurofins Cedar Falls
3019 Venture Way

Cedar Falls, IA 50613
phone 319.277.2401 fax 319.277.2425

Chain of Custody Record

eurofins Environment Testing America

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other IDNR

Eurofins Environment Testing America

Client Contact	**Project Manager: Chris Oelkers**	COC No
AECOM	Email Christopher.Oelkers@aecom.com	**Site Contact:**	**Date:** 10-22-24	1 of 2 COCs
501 Sycamore Street, Suite 222	**Tel/Fax:319-296-6878**	**Lab Contact:**	**Carrier:**	TALS Project #
Waterloo, IA 50703	**Analysis Turnaround Time**			Sampler
(319) 232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS			**For Lab Use Only:**
(xxx) xxx-xxxx FAX	TAT if different from Below _____			Walk-in Client:
Project Name Black Hawk Co IDNR	☑ 2 weeks			Lab Sampling
Site Black Hawk County Landfill	☐ 1 week			
P O #	☐ 2 days			Job / SDG No
	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	Appendix I, TSS	Appendix II, TSS	2,4-D	4,4'-DDD	beta-BHC	delta BHC	Endosulfan I	Endosulfan sulfate	Endrin aldehyde	Silvex	Sulfide	Sample Specific Notes
MW-603B	10-21-24	1145	G	GW	5	N		X											Turbidity – 1.01 NTU
MW-604B	10-21-24	1400	G	GW	5	N		X											Turbidity – 1.80 NTU
MW-709B			G	GW		N		X											
MW-710B			G	GW		N		X											
MW-711B			G	GW		N		X											
MW-712B			G	GW		N		X											
GUE-2			G	GW		N		X											
GUW1-1			G	GW		N		X											
GUW1-1-FD			G	GW		N		X											
GUW2-1			G	GW		N		X											
Equipment Blank-2			G	GW		N		X											
Trip Blank	10-21-24	0600	G	W	3	N		X											

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No		Cooler Temp. (°C) Obs'd. _____ Corr'd _____		Therm ID No. _____
Relinquished by: Ben Porter	Company: Aecom	Date/Time: 10-22-24	Received by:	Company:	Date/Time: 10/22/24 1145
Relinquished by:	Company:	Date/Time	Received by:	Company:	Date/Time
Relinquished by:	Company:	Date/Time	Received in Laboratory by:	Company:	Date/Time

Eurofins Cedar Falls
3019 Venture Way

Cedar Falls, IA 50613
phone 319 277.2401 fax 319 277.2425

Chain of Custody Record

eurofins Environment Testing America

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other IDNR

Eurofins Environment Testing America

Client Contact	Project Manager: Chris Oelkers	Site Contact:	Date: 10-22-24	COC No
AECOM	Email Christopher Oelkers@aecom com	Lab Contact:	Carrier:	2 of 2 COCs
501 Sycamore Street, Suite 222	Tel/Fax:319-296-6878			TALS Project #
Waterloo, IA 50703	Analysis Turnaround Time			Sampler
(319) 232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(xxx) xxx-xxxx FAX	TAT if different from Below ____			Walk-in Client:
Project Name Black Hawk Co IDNR	☑ 2 weeks			Lab Sampling
Site Black Hawk County Landfill	☐ 1 week			
P O #	☐ 2 days			Job / SDG No
	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	Appendix I, TSS	Appendix II, TSS	2,4-D	4,4'-DDD	beta-BHC	delta BHC	Endosulfan I	Endosulfan sulfate	Endrin aldehyde	Silvex	Sulfide	2,4,5-T	Bis(2-ethylhexyl)phthalate					Sample Specific Notes
OW-401B			G	GW		N		X		X		X	X		X	X	X	X							
OW-402B			G	GW		N		X		X		X			X		X	X	X	X					
MW-409B			G	GW		N		X																	
MW-409B-FD			G	GW		N		X																	
OW-413B			G	GW		N		X																	
MW-501B	10-21-24	1050	G	GW	5	N		X																	Turbidity - 5.83 NTU
MW-602B	10-21-24	1100	G	GW	5	N		X																	Turbidity - 2.5 NTU

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for ____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No	Cooler Temp. (°C) Obs'd. ____ Corr'd ____	Therm ID No. ____

Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Ben Roder	Aecom				10/22/24 1145
Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Relinquished by	Company	Date/Time	Received in Laboratory by	Company	Date/Time

11/5/2024

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-293338-1

Login Number: 293338

List Number: 1

Creator: Homolar, Dana J

List Source: Eurofins Cedar Falls

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

ANALYTICAL REPORT

PREPARED FOR

Attn: Chris Oelkers
AECOM
501 Sycamore Street
Suite #222
Waterloo, Iowa 50703

Generated 11/6/2024 10:25:11 AM

JOB DESCRIPTION

Black Hawk County Landfill (IDNR)
Fall 2024

JOB NUMBER

310-292343-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

my EOL

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



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11/6/2024 10:25:11 AM

Authorized for release by
Zach Bindert, Senior Project Manager
Zach.Bindert@et.eurofinsus.com
(319)595-2016

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Job Narrative
310-292343-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 10/9/2024 9:30 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice.

GC/MS VOA
Method 8260D: The method requirement for no headspace was not met. The following volatile sample was analyzed with headspace in the sample container(s): Trip Blank (310-292343-5).

Method 8260D: The continuing calibration verification (CCV) associated with batch 310-435986 recovered above the upper control limit for Carbon disulfide(23.5%D). The samples associated with this CCV were non-detects for the affected analyte; therefore, the data have been reported. The associated sample is impacted: (CCV 310-435986/3).

Method 8260D: The initial calibration verification (ICV) result for batch 310-435986 was above the upper control limit. The affected analyte is: Iodomethane. Sample results were non-detects, and have been reported as qualified data.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC/MS Semi VOA
Method 8270E: The continuing calibration verification (CCV) associated with batch 310-436520 recovered above the upper control limit for Pronamide (24.8%D). The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Method 8270E: The continuing calibration verification (CCV) associated with batch 310-436520 recovered above the upper control limit for Diallate Peak 2 (-24.6%D) and Kepone(58.2%D). The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated sample is impacted: (CCV 310-436520/2).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Herbicides
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

PCBs
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Pesticides
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
Method 6020B: The reference method requires samples to be preserved to a pH of <2. The following sample was received with insufficient preservation at a pH of >2: OW-225B (310-292343-3). The sample(s) was preserved to the appropriate pH in the laboratory.

Job ID: 310-292343-1 (Continued) Eurofins Cedar Falls

Method 6020B: The reference method requires samples to be preserved to a pH of <2. The following sample was received with insufficient preservation at a pH of >2: OW-225B (310-292343-3). The sample(s) was preserved to the appropriate pH in the laboratory.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Field Service / Mobile Lab
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Sample Summary

Client: AECOM
Job ID: 310-292343-1
Project/Site: Black Hawk County Landfill (IDNR)

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-292343-1	OW-223B	Water	10/08/24 14:00	10/09/24 09:30
310-292343-2	OW-223B-FD	Ground Water	10/08/24 14:00	10/09/24 09:30
310-292343-3	OW-225B	Water	10/08/24 11:00	10/09/24 09:30
310-292343-4	Equipment Blank-1	Water	10/08/24 14:30	10/09/24 09:30
310-292343-5	Trip Blank	Water	10/08/24 00:00	10/09/24 09:30

Detection Summary

Client: AECOM
Job ID: 310-292343-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-223B — Lab Sample ID: 310-292343-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	88.0		2.00	0.660	ug/L	1		6020B	Total/NA
Chromium	3.76	J B	5.00	1.20	ug/L	1		6020B	Total/NA
Copper	2.54	J	5.00	1.80	ug/L	1		6020B	Total/NA
Thallium	1.42		1.00	0.570	ug/L	1		6020B	Total/NA
Field Turbidity	0.99				NTU	1		Field Sampling	Total/NA

Client Sample ID: OW-223B-FD — Lab Sample ID: 310-292343-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	88.1		2.00	0.660	ug/L	1		6020B	Total/NA
Chromium	4.46	J B	5.00	1.20	ug/L	1		6020B	Total/NA
Copper	2.62	J	5.00	1.80	ug/L	1		6020B	Total/NA
Thallium	0.828	J	1.00	0.570	ug/L	1		6020B	Total/NA

Client Sample ID: OW-225B — Lab Sample ID: 310-292343-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dichlorobenzene	0.738	J	1.00	0.230	ug/L	1		8260D	Total/NA
Acetone	5.10	J	10.0	3.10	ug/L	1		8260D	Total/NA
Benzene	0.983		0.500	0.220	ug/L	1		8260D	Total/NA
cis-1,2-Dichloroethene	0.842	J	1.00	0.210	ug/L	1		8260D	Total/NA
Silvex (2,4,5-TP)	0.341		0.0518	0.0228	ug/L	1		8151A	Total/NA
Arsenic	6.29		2.00	0.530	ug/L	1		6020B	Total/NA
Barium	1380		2.00	0.660	ug/L	1		6020B	Total/NA
Cadmium	0.502		0.200	0.100	ug/L	1		6020B	Total/NA
Chromium	10.4	B	5.00	1.20	ug/L	1		6020B	Total/NA
Cobalt	30.0		0.500	0.170	ug/L	1		6020B	Total/NA
Copper	3.48	J	5.00	1.80	ug/L	1		6020B	Total/NA
Lead	1.55		0.500	0.260	ug/L	1		6020B	Total/NA
Nickel	124		5.00	2.10	ug/L	1		6020B	Total/NA
Vanadium	2.36	J	5.00	1.10	ug/L	1		6020B	Total/NA
Cyanide, Total	4.91	J	10.0	3.50	ug/L	1		9012B	Total/NA
Total Suspended Solids	18.2		3.00	2.22	mg/L	1		I-3765-85	Total/NA
Field Turbidity	19.72				NTU	1		Field Sampling	Total/NA

Client Sample ID: Equipment Blank-1 — Lab Sample ID: 310-292343-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	7.57	J	10.0	3.10	ug/L	1		8260D	Total/NA
Toluene	0.513	J	1.00	0.430	ug/L	1		8260D	Total/NA

Client Sample ID: Trip Blank — Lab Sample ID: 310-292343-5

No Detections.

This Detection Summary does not include radiochemical test results.

Client: AECOM
Job ID: 310-292343-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-223B
Lab Sample ID: 310-292343-1
Date Collected: 10/08/24 14:00
Matrix: Water
Date Received: 10/09/24 09:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			10/11/24 21:48	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			10/11/24 21:48	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			10/11/24 21:48	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			10/11/24 21:48	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			10/11/24 21:48	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			10/11/24 21:48	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			10/11/24 21:48	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			10/11/24 21:48	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			10/11/24 21:48	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			10/11/24 21:48	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			10/11/24 21:48	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			10/11/24 21:48	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			10/11/24 21:48	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			10/11/24 21:48	1
2-Hexanone	<2.00		10.0	2.00	ug/L			10/11/24 21:48	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			10/11/24 21:48	1
Acetone	<3.10		10.0	3.10	ug/L			10/11/24 21:48	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			10/11/24 21:48	1
Benzene	<0.220		0.500	0.220	ug/L			10/11/24 21:48	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			10/11/24 21:48	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			10/11/24 21:48	1
Bromoform	<0.780		5.00	0.780	ug/L			10/11/24 21:48	1
Bromomethane	<1.10		4.00	1.10	ug/L			10/11/24 21:48	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			10/11/24 21:48	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			10/11/24 21:48	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			10/11/24 21:48	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			10/11/24 21:48	1
Chloroethane	<0.790		4.00	0.790	ug/L			10/11/24 21:48	1
Chloroform	<1.30		3.00	1.30	ug/L			10/11/24 21:48	1
Chloromethane	<0.610		3.00	0.610	ug/L			10/11/24 21:48	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			10/11/24 21:48	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			10/11/24 21:48	1
Dibromomethane	<0.330		1.00	0.330	ug/L			10/11/24 21:48	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			10/11/24 21:48	1
Iodomethane	<7.00		10.0	7.00	ug/L			10/11/24 21:48	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			10/11/24 21:48	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			10/11/24 21:48	1
o-Xylene	<0.400		1.00	0.400	ug/L			10/11/24 21:48	1
Styrene	<0.370		1.00	0.370	ug/L			10/11/24 21:48	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			10/11/24 21:48	1
Toluene	<0.430		1.00	0.430	ug/L			10/11/24 21:48	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			10/11/24 21:48	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			10/11/24 21:48	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			10/11/24 21:48	1
Trichloroethene	<0.430		1.00	0.430	ug/L			10/11/24 21:48	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			10/11/24 21:48	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			10/11/24 21:48	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			10/11/24 21:48	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			10/11/24 21:48	1

Client: AECOM
Job ID: 310-292343-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-223B
Lab Sample ID: 310-292343-1
Date Collected: 10/08/24 14:00
Matrix: Water
Date Received: 10/09/24 09:30

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*99*		*73 - 130*		*10/11/24 21:48*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*10/11/24 21:48*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*10/11/24 21:48*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		10/11/24 09:30	10/11/24 23:29	1
Arsenic	<0.530		2.00	0.530	ug/L		10/11/24 09:30	10/11/24 23:29	1
Barium	**88.0**		2.00	0.660	ug/L		10/11/24 09:30	10/11/24 23:29	1
Beryllium	<0.330		1.00	0.330	ug/L		10/11/24 09:30	10/14/24 19:25	1
Cadmium	<0.100		0.200	0.100	ug/L		10/11/24 09:30	10/11/24 23:29	1
Chromium	**3.76**	**J B**	5.00	1.20	ug/L		10/11/24 09:30	10/11/24 23:29	1
Cobalt	<0.170		0.500	0.170	ug/L		10/11/24 09:30	10/11/24 23:29	1
Copper	**2.54**	**J**	5.00	1.80	ug/L		10/11/24 09:30	10/11/24 23:29	1
Lead	<0.260		0.500	0.260	ug/L		10/11/24 09:30	10/11/24 23:29	1
Nickel	<2.10		5.00	2.10	ug/L		10/11/24 09:30	10/11/24 23:29	1
Selenium	<1.40		5.00	1.40	ug/L		10/11/24 09:30	10/11/24 23:29	1
Silver	<0.500		1.00	0.500	ug/L		10/11/24 09:30	10/11/24 23:29	1
Thallium	**1.42**		1.00	0.570	ug/L		10/11/24 09:30	10/22/24 14:58	1
Vanadium	<1.10		5.00	1.10	ug/L		10/11/24 09:30	10/11/24 23:29	1
Zinc	<9.70		20.0	9.70	ug/L		11/01/24 09:30	11/05/24 15:04	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	<1.39		1.88	1.39	mg/L			10/11/24 08:52	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**0.99**				NTU			10/08/24 14:00	1

Client: AECOM
Job ID: 310-292343-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-223B-FD
Lab Sample ID: 310-292343-2
Date Collected: 10/08/24 14:00
Matrix: Ground Water
Date Received: 10/09/24 09:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			10/11/24 22:11	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			10/11/24 22:11	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			10/11/24 22:11	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			10/11/24 22:11	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			10/11/24 22:11	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			10/11/24 22:11	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			10/11/24 22:11	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			10/11/24 22:11	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			10/11/24 22:11	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			10/11/24 22:11	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			10/11/24 22:11	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			10/11/24 22:11	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			10/11/24 22:11	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			10/11/24 22:11	1
2-Hexanone	<2.00		10.0	2.00	ug/L			10/11/24 22:11	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			10/11/24 22:11	1
Acetone	<3.10		10.0	3.10	ug/L			10/11/24 22:11	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			10/11/24 22:11	1
Benzene	<0.220		0.500	0.220	ug/L			10/11/24 22:11	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			10/11/24 22:11	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			10/11/24 22:11	1
Bromoform	<0.780		5.00	0.780	ug/L			10/11/24 22:11	1
Bromomethane	<1.10		4.00	1.10	ug/L			10/11/24 22:11	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			10/11/24 22:11	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			10/11/24 22:11	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			10/11/24 22:11	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			10/11/24 22:11	1
Chloroethane	<0.790		4.00	0.790	ug/L			10/11/24 22:11	1
Chloroform	<1.30		3.00	1.30	ug/L			10/11/24 22:11	1
Chloromethane	<0.610		3.00	0.610	ug/L			10/11/24 22:11	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			10/11/24 22:11	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			10/11/24 22:11	1
Dibromomethane	<0.330		1.00	0.330	ug/L			10/11/24 22:11	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			10/11/24 22:11	1
Iodomethane	<7.00		10.0	7.00	ug/L			10/11/24 22:11	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			10/11/24 22:11	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			10/11/24 22:11	1
o-Xylene	<0.400		1.00	0.400	ug/L			10/11/24 22:11	1
Styrene	<0.370		1.00	0.370	ug/L			10/11/24 22:11	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			10/11/24 22:11	1
Toluene	<0.430		1.00	0.430	ug/L			10/11/24 22:11	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			10/11/24 22:11	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			10/11/24 22:11	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			10/11/24 22:11	1
Trichloroethene	<0.430		1.00	0.430	ug/L			10/11/24 22:11	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			10/11/24 22:11	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			10/11/24 22:11	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			10/11/24 22:11	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			10/11/24 22:11	1

Client: AECOM
Job ID: 310-292343-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-223B-FD
Lab Sample ID: 310-292343-2

Date Collected: 10/08/24 14:00
Matrix: Ground Water

Date Received: 10/09/24 09:30

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*99*		*73 - 130*		*10/11/24 22:11*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*10/11/24 22:11*	*1*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*		*10/11/24 22:11*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		10/11/24 09:30	10/11/24 23:31	1
Arsenic	<0.530		2.00	0.530	ug/L		10/11/24 09:30	10/11/24 23:31	1
Barium	**88.1**		2.00	0.660	ug/L		10/11/24 09:30	10/11/24 23:31	1
Beryllium	<0.330		1.00	0.330	ug/L		10/11/24 09:30	10/14/24 19:29	1
Cadmium	<0.100		0.200	0.100	ug/L		10/11/24 09:30	10/11/24 23:31	1
Chromium	**4.46**	**J B**	5.00	1.20	ug/L		10/11/24 09:30	10/11/24 23:31	1
Cobalt	<0.170		0.500	0.170	ug/L		10/11/24 09:30	10/11/24 23:31	1
Copper	**2.62**	**J**	5.00	1.80	ug/L		10/11/24 09:30	10/11/24 23:31	1
Lead	<0.260		0.500	0.260	ug/L		10/11/24 09:30	10/11/24 23:31	1
Nickel	<2.10		5.00	2.10	ug/L		10/11/24 09:30	10/11/24 23:31	1
Selenium	<1.40		5.00	1.40	ug/L		10/11/24 09:30	10/11/24 23:31	1
Silver	<0.500		1.00	0.500	ug/L		10/11/24 09:30	10/11/24 23:31	1
Thallium	**0.828**	**J**	1.00	0.570	ug/L		10/11/24 09:30	10/22/24 15:00	1
Vanadium	<1.10		5.00	1.10	ug/L		10/11/24 09:30	10/11/24 23:31	1
Zinc	<9.70		20.0	9.70	ug/L		11/01/24 09:30	11/05/24 15:07	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	<1.39		1.88	1.39	mg/L			10/11/24 08:52	1

Client: AECOM
Job ID: 310-292343-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-225B
Lab Sample ID: 310-292343-3
Date Collected: 10/08/24 11:00
Matrix: Water
Date Received: 10/09/24 09:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			10/11/24 22:34	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			10/11/24 22:34	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			10/11/24 22:34	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			10/11/24 22:34	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			10/11/24 22:34	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			10/11/24 22:34	1
1,1-Dichloropropene	<0.430		1.00	0.430	ug/L			10/11/24 22:34	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			10/11/24 22:34	1
1,2,4-Trichlorobenzene	<0.750		5.00	0.750	ug/L			10/11/24 22:34	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			10/11/24 22:34	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			10/11/24 22:34	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			10/11/24 22:34	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			10/11/24 22:34	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			10/11/24 22:34	1
1,3-Dichlorobenzene	<0.300		1.00	0.300	ug/L			10/11/24 22:34	1
1,3-Dichloropropane	<0.400		1.00	0.400	ug/L			10/11/24 22:34	1
1,4-Dichlorobenzene	**0.738**	**J**	1.00	0.230	ug/L			10/11/24 22:34	1
2,2-Dichloropropane	<0.690		4.00	0.690	ug/L			10/11/24 22:34	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			10/11/24 22:34	1
2-Hexanone	<2.00		10.0	2.00	ug/L			10/11/24 22:34	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			10/11/24 22:34	1
Acetone	**5.10**	**J**	10.0	3.10	ug/L			10/11/24 22:34	1
Acrolein	<3.60		10.0	3.60	ug/L			10/11/24 22:34	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			10/11/24 22:34	1
Allyl chloride	<0.700		2.00	0.700	ug/L			10/11/24 22:34	1
Benzene	**0.983**		0.500	0.220	ug/L			10/11/24 22:34	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			10/11/24 22:34	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			10/11/24 22:34	1
Bromoform	<0.780		5.00	0.780	ug/L			10/11/24 22:34	1
Bromomethane	<1.10		4.00	1.10	ug/L			10/11/24 22:34	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			10/11/24 22:34	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			10/11/24 22:34	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			10/11/24 22:34	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			10/11/24 22:34	1
Chloroethane	<0.790		4.00	0.790	ug/L			10/11/24 22:34	1
Chloroform	<1.30		3.00	1.30	ug/L			10/11/24 22:34	1
Chloromethane	<0.610		3.00	0.610	ug/L			10/11/24 22:34	1
Chloroprene	<0.230		1.00	0.230	ug/L			10/11/24 22:34	1
cis-1,2-Dichloroethene	**0.842**	**J**	1.00	0.210	ug/L			10/11/24 22:34	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			10/11/24 22:34	1
Dibromomethane	<0.330		1.00	0.330	ug/L			10/11/24 22:34	1
Dichlorodifluoromethane	<0.250		3.00	0.250	ug/L			10/11/24 22:34	1
Ethyl methacrylate	<0.680		2.00	0.680	ug/L			10/11/24 22:34	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			10/11/24 22:34	1
Iodomethane	<7.00		10.0	7.00	ug/L			10/11/24 22:34	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			10/11/24 22:34	1
Methacrylonitrile	<3.30		10.0	3.30	ug/L			10/11/24 22:34	1
Methyl methacrylate	<0.760		2.00	0.760	ug/L			10/11/24 22:34	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			10/11/24 22:34	1

Client Sample ID: OW-225B
Lab Sample ID: 310-292343-3
Date Collected: 10/08/24 11:00
Matrix: Water
Date Received: 10/09/24 09:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<3.00		5.00	3.00	ug/L			10/11/24 22:34	1
o-Xylene	<0.400		1.00	0.400	ug/L			10/11/24 22:34	1
Propionitrile	<3.40		10.0	3.40	ug/L			10/11/24 22:34	1
Styrene	<0.370		1.00	0.370	ug/L			10/11/24 22:34	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			10/11/24 22:34	1
Toluene	<0.430		1.00	0.430	ug/L			10/11/24 22:34	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			10/11/24 22:34	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			10/11/24 22:34	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			10/11/24 22:34	1
Trichloroethene	<0.430		1.00	0.430	ug/L			10/11/24 22:34	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			10/11/24 22:34	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			10/11/24 22:34	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			10/11/24 22:34	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			10/11/24 22:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*100*		*73 - 130*		*10/11/24 22:34*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*10/11/24 22:34*	*1*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*		*10/11/24 22:34*	*1*

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4,5-Tetrachlorobenzene	<0.563		10.4	0.563	ug/L		10/11/24 06:28	10/17/24 15:45	1
1,3,5-Trinitrobenzene	<2.40		10.4	2.40	ug/L		10/11/24 06:28	10/17/24 15:45	1
1,3-Dinitrobenzene	<3.33		10.4	3.33	ug/L		10/11/24 06:28	10/17/24 15:45	1
1,4-Naphthoquinone	<3.75		10.4	3.75	ug/L		10/11/24 06:28	10/17/24 15:45	1
1,4-phenylenediamine	<1.98		10.4	1.98	ug/L		10/11/24 06:28	10/17/24 15:45	1
1-Naphthylamine	<2.60		10.4	2.60	ug/L		10/11/24 06:28	10/17/24 15:45	1
2,3,4,6-Tetrachlorophenol	<5.52		10.4	5.52	ug/L		10/11/24 06:28	10/17/24 15:45	1
2,4,5-Trichlorophenol	<5.52		10.4	5.52	ug/L		10/11/24 06:28	10/17/24 15:45	1
2,4,6-Trichlorophenol	<5.21		10.4	5.21	ug/L		10/11/24 06:28	10/17/24 15:45	1
2,4-Dichlorophenol	<0.885		10.4	0.885	ug/L		10/11/24 06:28	10/17/24 15:45	1
2,4-Dimethylphenol	<0.604		10.4	0.604	ug/L		10/11/24 06:28	10/17/24 15:45	1
2,4-Dinitrophenol	<13.5		20.8	13.5	ug/L		10/11/24 06:28	10/17/24 15:45	1
2,4-Dinitrotoluene	<6.67		10.4	6.67	ug/L		10/11/24 06:28	10/17/24 15:45	1
2,6-Dichlorophenol	<0.719		10.4	0.719	ug/L		10/11/24 06:28	10/17/24 15:45	1
2,6-Dinitrotoluene	<0.542		10.4	0.542	ug/L		10/11/24 06:28	10/17/24 15:45	1
2-Acetylaminofluorene	<2.81		10.4	2.81	ug/L		10/11/24 06:28	10/17/24 15:45	1
2-Chloronaphthalene	<0.667		10.4	0.667	ug/L		10/11/24 06:28	10/17/24 15:45	1
2-Chlorophenol	<0.563		10.4	0.563	ug/L		10/11/24 06:28	10/17/24 15:45	1
2-Methylnaphthalene	<0.615		10.4	0.615	ug/L		10/11/24 06:28	10/17/24 15:45	1
2-Methylphenol	<0.677		10.4	0.677	ug/L		10/11/24 06:28	10/17/24 15:45	1
2-Naphthylamine	<2.19		10.4	2.19	ug/L		10/11/24 06:28	10/17/24 15:45	1
2-Nitroaniline	<6.15		10.4	6.15	ug/L		10/11/24 06:28	10/17/24 15:45	1
2-Nitrophenol	<7.08		10.4	7.08	ug/L		10/11/24 06:28	10/17/24 15:45	1
3,3'-Dichlorobenzidine	<1.46		10.4	1.46	ug/L		10/11/24 06:28	10/17/24 15:45	1
3,3'-Dimethylbenzidine	<1.56		10.4	1.56	ug/L		10/11/24 06:28	10/17/24 15:45	1
3-Methylcholanthrene	<0.333		10.4	0.333	ug/L		10/11/24 06:28	10/17/24 15:45	1
3-Nitroaniline	<2.81		10.4	2.81	ug/L		10/11/24 06:28	10/17/24 15:45	1
4,6-Dinitro-2-methylphenol	<7.19		10.4	7.19	ug/L		10/11/24 06:28	10/17/24 15:45	1

Client: AECOM
Job ID: 310-292343-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-225B
Lab Sample ID: 310-292343-3
Date Collected: 10/08/24 11:00
Matrix: Water
Date Received: 10/09/24 09:30

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Aminobiphenyl	<2.29		10.4	2.29	ug/L		10/11/24 06:28	10/17/24 15:45	1
4-Bromophenyl phenyl ether	<0.729		10.4	0.729	ug/L		10/11/24 06:28	10/17/24 15:45	1
4-Chloro-3-methylphenol	<0.875		10.4	0.875	ug/L		10/11/24 06:28	10/17/24 15:45	1
4-Chloroaniline	<0.646		10.4	0.646	ug/L		10/11/24 06:28	10/17/24 15:45	1
4-Chlorophenyl phenyl ether	<0.719		10.4	0.719	ug/L		10/11/24 06:28	10/17/24 15:45	1
Methylphenol, 3 & 4	<0.729		10.4	0.729	ug/L		10/11/24 06:28	10/17/24 15:45	1
4-Nitroaniline	<1.35		10.4	1.35	ug/L		10/11/24 06:28	10/17/24 15:45	1
4-Nitrophenol	<7.92		10.4	7.92	ug/L		10/11/24 06:28	10/17/24 15:45	1
5-Nitro-o-toluidine	<2.92		10.4	2.92	ug/L		10/11/24 06:28	10/17/24 15:45	1
7,12-Dimethylbenz(a)anthracene	<1.98		10.4	1.98	ug/L		10/11/24 06:28	10/17/24 15:45	1
Acenaphthene	<0.667		10.4	0.667	ug/L		10/11/24 06:28	10/17/24 15:45	1
Acenaphthylene	<0.750		10.4	0.750	ug/L		10/11/24 06:28	10/17/24 15:45	1
Acetophenone	<0.719		10.4	0.719	ug/L		10/11/24 06:28	10/17/24 15:45	1
Anthracene	<0.906		10.4	0.906	ug/L		10/11/24 06:28	10/17/24 15:45	1
Benzo[a]anthracene	<0.885		10.4	0.885	ug/L		10/11/24 06:28	10/17/24 15:45	1
Benzo[a]pyrene	<8.44		10.4	8.44	ug/L		10/11/24 06:28	10/17/24 15:45	1
Benzo[b]fluoranthene	<5.10		10.4	5.10	ug/L		10/11/24 06:28	10/17/24 15:45	1
Benzo[g,h,i]perylene	<6.56		10.4	6.56	ug/L		10/11/24 06:28	10/17/24 15:45	1
Benzo[k]fluoranthene	<2.29		10.4	2.29	ug/L		10/11/24 06:28	10/17/24 15:45	1
Benzyl alcohol	<1.35		10.4	1.35	ug/L		10/11/24 06:28	10/17/24 15:45	1
Bis(2-chloroethoxy)methane	<0.792		10.4	0.792	ug/L		10/11/24 06:28	10/17/24 15:45	1
Bis(2-chloroethyl)ether	<0.854		10.4	0.854	ug/L		10/11/24 06:28	10/17/24 15:45	1
bis (2-chloroisopropyl) ether	<0.563		10.4	0.563	ug/L		10/11/24 06:28	10/17/24 15:45	1
Bis(2-ethylhexyl) phthalate	<5.73		10.4	5.73	ug/L		10/11/24 06:28	10/17/24 15:45	1
Butyl benzyl phthalate	<5.63		10.4	5.63	ug/L		10/11/24 06:28	10/17/24 15:45	1
Chlorobenzilate	<3.75		10.4	3.75	ug/L		10/11/24 06:28	10/17/24 15:45	1
Chrysene	<0.906		10.4	0.906	ug/L		10/11/24 06:28	10/17/24 15:45	1
Diallate	<4.17		10.4	4.17	ug/L		10/11/24 06:28	10/17/24 15:45	1
Dibenzo(a,h)anthracene	<4.06		10.4	4.06	ug/L		10/11/24 06:28	10/17/24 15:45	1
Dibenzofuran	<0.771		10.4	0.771	ug/L		10/11/24 06:28	10/17/24 15:45	1
Diethyl phthalate	<1.77		10.4	1.77	ug/L		10/11/24 06:28	10/17/24 15:45	1
Dimethoate	<3.75		10.4	3.75	ug/L		10/11/24 06:28	10/17/24 15:45	1
Dimethyl phthalate	<1.04		10.4	1.04	ug/L		10/11/24 06:28	10/17/24 15:45	1
Di-n-butyl phthalate	<5.83		10.4	5.83	ug/L		10/11/24 06:28	10/17/24 15:45	1
Di-n-octyl phthalate	<7.29		20.8	7.29	ug/L		10/11/24 06:28	10/17/24 15:45	1
Dinoseb	<2.50		10.4	2.50	ug/L		10/11/24 06:28	10/17/24 15:45	1
Diphenylamine	<6.25		10.4	6.25	ug/L		10/11/24 06:28	10/17/24 15:45	1
Disulfoton	<2.50		10.4	2.50	ug/L		10/11/24 06:28	10/17/24 15:45	1
Ethyl methanesulfonate	<3.75		10.4	3.75	ug/L		10/11/24 06:28	10/17/24 15:45	1
Ethyl Parathion	<2.29		10.4	2.29	ug/L		10/11/24 06:28	10/17/24 15:45	1
Famphur	<3.96		10.4	3.96	ug/L		10/11/24 06:28	10/17/24 15:45	1
Fluoranthene	<1.77		10.4	1.77	ug/L		10/11/24 06:28	10/17/24 15:45	1
Fluorene	<0.823		10.4	0.823	ug/L		10/11/24 06:28	10/17/24 15:45	1
Hexachlorobenzene	<0.729		10.4	0.729	ug/L		10/11/24 06:28	10/17/24 15:45	1
Hexachlorobutadiene	<0.896		10.4	0.896	ug/L		10/11/24 06:28	10/17/24 15:45	1
Hexachlorocyclopentadiene	<5.31		10.4	5.31	ug/L		10/11/24 06:28	10/17/24 15:45	1
Hexachloroethane	<1.01		10.4	1.01	ug/L		10/11/24 06:28	10/17/24 15:45	1
Hexachloropropene	<2.71		10.4	2.71	ug/L		10/11/24 06:28	10/17/24 15:45	1
Indeno[1,2,3-cd]pyrene	<4.38		10.4	4.38	ug/L		10/11/24 06:28	10/17/24 15:45	1

Client Sample ID: OW-225B
Lab Sample ID: 310-292343-3
Date Collected: 10/08/24 11:00
Matrix: Water
Date Received: 10/09/24 09:30

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Isodrin	<4.90		10.4	4.90	ug/L		10/11/24 06:28	10/17/24 15:45	1
Isophorone	<0.969		10.4	0.969	ug/L		10/11/24 06:28	10/17/24 15:45	1
Isosafrole	<2.40		10.4	2.40	ug/L		10/11/24 06:28	10/17/24 15:45	1
Kepone	<1.04		10.4	1.04	ug/L		10/11/24 06:28	10/17/24 15:45	1
Methapyrilene	<0.792		10.4	0.792	ug/L		10/11/24 06:28	10/17/24 15:45	1
Methyl methanesulfonate	<3.44		10.4	3.44	ug/L		10/11/24 06:28	10/17/24 15:45	1
Methyl parathion	<2.40		10.4	2.40	ug/L		10/11/24 06:28	10/17/24 15:45	1
Nitrobenzene	<0.833		10.4	0.833	ug/L		10/11/24 06:28	10/17/24 15:45	1
N-Nitrosodiethylamine	<3.54		10.4	3.54	ug/L		10/11/24 06:28	10/17/24 15:45	1
N-Nitrosodimethylamine	<0.750		10.4	0.750	ug/L		10/11/24 06:28	10/17/24 15:45	1
N-Nitrosodi-n-butylamine	<4.06		10.4	4.06	ug/L		10/11/24 06:28	10/17/24 15:45	1
N-Nitrosodi-n-propylamine	<0.958		10.4	0.958	ug/L		10/11/24 06:28	10/17/24 15:45	1
N-Nitrosodiphenylamine	<0.781		10.4	0.781	ug/L		10/11/24 06:28	10/17/24 15:45	1
N-Nitrosomethylethylamine	<5.10		10.4	5.10	ug/L		10/11/24 06:28	10/17/24 15:45	1
N-Nitrosopiperidine	<2.81		10.4	2.81	ug/L		10/11/24 06:28	10/17/24 15:45	1
N-Nitrosopyrrolidine	<3.75		10.4	3.75	ug/L		10/11/24 06:28	10/17/24 15:45	1
o,o',o''-Triethylphosphorothioate	<3.33		10.4	3.33	ug/L		10/11/24 06:28	10/17/24 15:45	1
o-Toluidine	<3.02		10.4	3.02	ug/L		10/11/24 06:28	10/17/24 15:45	1
p-Dimethylamino azobenzene	<2.29		10.4	2.29	ug/L		10/11/24 06:28	10/17/24 15:45	1
Pentachlorobenzene	<2.92		10.4	2.92	ug/L		10/11/24 06:28	10/17/24 15:45	1
Pentachloronitrobenzene	<6.04		10.4	6.04	ug/L		10/11/24 06:28	10/17/24 15:45	1
Pentachlorophenol	<10.0		10.4	10.0	ug/L		10/11/24 06:28	10/17/24 15:45	1
Phenacetin	<1.98		10.4	1.98	ug/L		10/11/24 06:28	10/17/24 15:45	1
Phenanthrene	<0.823		10.4	0.823	ug/L		10/11/24 06:28	10/17/24 15:45	1
Phenol	<1.15		10.4	1.15	ug/L		10/11/24 06:28	10/17/24 15:45	1
Phorate	<3.33		10.4	3.33	ug/L		10/11/24 06:28	10/17/24 15:45	1
Pronamide	<2.81		10.4	2.81	ug/L		10/11/24 06:28	10/17/24 15:45	1
Pyrene	<0.823		10.4	0.823	ug/L		10/11/24 06:28	10/17/24 15:45	1
Safrole	<2.92		10.4	2.92	ug/L		10/11/24 06:28	10/17/24 15:45	1
Thionazin	<3.65		10.4	3.65	ug/L		10/11/24 06:28	10/17/24 15:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorophenol (Surr)	*60*		*25 - 110*	*10/11/24 06:28*	*10/17/24 15:45*	*1*
Phenol-d5 (Surr)	*51*		*21 - 110*	*10/11/24 06:28*	*10/17/24 15:45*	*1*
Nitrobenzene-d5 (Surr)	*83*		*45 - 129*	*10/11/24 06:28*	*10/17/24 15:45*	*1*
2-Fluorobiphenyl (Surr)	*86*		*39 - 118*	*10/11/24 06:28*	*10/17/24 15:45*	*1*
2,4,6-Tribromophenol (Surr)	*92*		*27 - 136*	*10/11/24 06:28*	*10/17/24 15:45*	*1*
Terphenyl-d14 (Surr)	*93*		*12 - 144*	*10/11/24 06:28*	*10/17/24 15:45*	*1*

Method: SW846 8015C - Nonhalogenated Organic using GC/FID (Direct Aqueous Injection)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetonitrile	<2600		10000	2600	ug/L			10/14/24 09:52	1
Isobutanol	<2400		10000	2400	ug/L			10/14/24 09:52	1

Method: SW846 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	<0.0242		0.0970	0.0242	ug/L		10/15/24 15:30	10/16/24 19:05	1
4,4'-DDE	<0.0291		0.0970	0.0291	ug/L		10/15/24 15:30	10/16/24 19:05	1
4,4'-DDT	<0.0194		0.0970	0.0194	ug/L		10/15/24 15:30	10/16/24 19:05	1
Aldrin	<0.0213		0.0970	0.0213	ug/L		10/15/24 15:30	10/16/24 19:05	1

Client Sample ID: OW-225B
Lab Sample ID: 310-292343-3
Date Collected: 10/08/24 11:00
Matrix: Water
Date Received: 10/09/24 09:30

Method: SW846 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
alpha-BHC	<0.00970		0.0970	0.00970	ug/L		10/15/24 15:30	10/16/24 19:05	1
beta-BHC	<0.0407		0.0970	0.0407	ug/L		10/15/24 15:30	10/16/24 19:05	1
Chlordane (technical)	<0.378		1.94	0.378	ug/L		10/15/24 15:30	10/16/24 19:05	1
delta-BHC	<0.0310		0.0970	0.0310	ug/L		10/15/24 15:30	10/16/24 19:05	1
Dieldrin	<0.0204		0.0970	0.0204	ug/L		10/15/24 15:30	10/16/24 19:05	1
Endosulfan I	<0.0271		0.0970	0.0271	ug/L		10/15/24 15:30	10/16/24 19:05	1
Endosulfan II	<0.0252		0.0970	0.0252	ug/L		10/15/24 15:30	10/16/24 19:05	1
Endosulfan sulfate	<0.0175		0.0970	0.0175	ug/L		10/15/24 15:30	10/16/24 19:05	1
Endrin	<0.0271		0.0970	0.0271	ug/L		10/15/24 15:30	10/16/24 19:05	1
Endrin aldehyde	<0.0262		0.0970	0.0262	ug/L		10/15/24 15:30	10/16/24 19:05	1
gamma-BHC (Lindane)	<0.00970		0.0970	0.00970	ug/L		10/15/24 15:30	10/16/24 19:05	1
Heptachlor	<0.0223		0.0970	0.0223	ug/L		10/15/24 15:30	10/16/24 19:05	1
Heptachlor epoxide	<0.0310		0.0970	0.0310	ug/L		10/15/24 15:30	10/16/24 19:05	1
Methoxychlor	<0.0310		0.0970	0.0310	ug/L		10/15/24 15:30	10/16/24 19:05	1
Toxaphene	<0.970		1.94	0.970	ug/L		10/15/24 15:30	10/16/24 19:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*95*		*10 - 136*	*10/15/24 15:30*	*10/16/24 19:05*	*1*
Tetrachloro-m-xylene (Surr)	*90*		*10 - 130*	*10/15/24 15:30*	*10/16/24 19:05*	*1*

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.795		1.94	0.795	ug/L		10/15/24 15:30	10/16/24 19:05	1
PCB-1221	<0.795		1.94	0.795	ug/L		10/15/24 15:30	10/16/24 19:05	1
PCB-1232	<0.795		1.94	0.795	ug/L		10/15/24 15:30	10/16/24 19:05	1
PCB-1242	<0.795		1.94	0.795	ug/L		10/15/24 15:30	10/16/24 19:05	1
PCB-1248	<0.669		1.94	0.669	ug/L		10/15/24 15:30	10/16/24 19:05	1
PCB-1254	<0.669		1.94	0.669	ug/L		10/15/24 15:30	10/16/24 19:05	1
PCB-1260	<0.669		1.94	0.669	ug/L		10/15/24 15:30	10/16/24 19:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*95*		*10 - 136*	*10/15/24 15:30*	*10/16/24 19:05*	*1*
Tetrachloro-m-xylene (Surr)	*90*		*10 - 130*	*10/15/24 15:30*	*10/16/24 19:05*	*1*

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	<0.621	p	0.621	0.621	ug/L		10/15/24 09:09	10/16/24 10:44	1
Silvex (2,4,5-TP)	**0.341**		0.0518	0.0228	ug/L		10/15/24 09:09	10/16/24 10:44	1
2,4,5-T	<0.0673		0.155	0.0673	ug/L		10/15/24 09:09	10/16/24 10:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*105*	*p*	*34 - 142*	*10/15/24 09:09*	*10/16/24 10:44*	*1*
DCAA	*280*	*S1+*	*34 - 142*	*10/15/24 09:09*	*10/16/24 10:44*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		10/11/24 09:30	10/11/24 23:33	1
Arsenic	**6.29**		2.00	0.530	ug/L		10/11/24 09:30	10/11/24 23:33	1
Barium	**1380**		2.00	0.660	ug/L		10/11/24 09:30	10/11/24 23:33	1
Beryllium	<0.330		1.00	0.330	ug/L		10/11/24 09:30	10/14/24 19:33	1
Cadmium	**0.502**		0.200	0.100	ug/L		10/11/24 09:30	10/11/24 23:33	1

Client: AECOM
Job ID: 310-292343-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-225B
Lab Sample ID: 310-292343-3
Date Collected: 10/08/24 11:00
Matrix: Water
Date Received: 10/09/24 09:30

Method: SW846 6020B - Metals (ICP/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	**10.4**	**B**	5.00	1.20	ug/L		10/11/24 09:30	10/11/24 23:33	1
Cobalt	**30.0**		0.500	0.170	ug/L		10/11/24 09:30	10/11/24 23:33	1
Copper	**3.48**	**J**	5.00	1.80	ug/L		10/11/24 09:30	10/11/24 23:33	1
Lead	**1.55**		0.500	0.260	ug/L		10/11/24 09:30	10/11/24 23:33	1
Nickel	**124**		5.00	2.10	ug/L		10/11/24 09:30	10/11/24 23:33	1
Selenium	<1.40		5.00	1.40	ug/L		10/11/24 09:30	10/11/24 23:33	1
Silver	<0.500		1.00	0.500	ug/L		10/11/24 09:30	10/11/24 23:33	1
Thallium	<0.570	^+	1.00	0.570	ug/L		10/11/24 09:30	10/17/24 15:58	1
Vanadium	**2.36**	**J**	5.00	1.10	ug/L		10/11/24 09:30	10/11/24 23:33	1
Zinc	<9.70		20.0	9.70	ug/L		11/01/24 09:30	11/05/24 15:11	1
Tin	<2.30		5.00	2.30	ug/L		10/11/24 09:30	10/11/24 23:33	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.110		0.200	0.110	ug/L		10/15/24 15:55	10/16/24 16:20	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total (SW846 9012B)	**4.91**	**J**	10.0	3.50	ug/L		10/10/24 10:18	10/10/24 17:45	1
Sulfide (SW846 9034)	<1.41		3.00	1.41	mg/L		10/15/24 10:08	10/15/24 13:11	1
Total Suspended Solids (USGS I-3765-85)	**18.2**		3.00	2.22	mg/L			10/11/24 08:52	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**19.72**				NTU			10/08/24 11:00	1

Client: AECOM
Job ID: 310-292343-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Equipment Blank-1
Lab Sample ID: 310-292343-4
Date Collected: 10/08/24 14:30
Matrix: Water
Date Received: 10/09/24 09:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			10/12/24 01:24	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			10/12/24 01:24	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			10/12/24 01:24	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			10/12/24 01:24	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			10/12/24 01:24	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			10/12/24 01:24	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			10/12/24 01:24	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			10/12/24 01:24	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			10/12/24 01:24	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			10/12/24 01:24	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			10/12/24 01:24	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			10/12/24 01:24	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			10/12/24 01:24	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			10/12/24 01:24	1
2-Hexanone	<2.00		10.0	2.00	ug/L			10/12/24 01:24	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			10/12/24 01:24	1
Acetone	**7.57**	**J**	10.0	3.10	ug/L			10/12/24 01:24	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			10/12/24 01:24	1
Benzene	<0.220		0.500	0.220	ug/L			10/12/24 01:24	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			10/12/24 01:24	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			10/12/24 01:24	1
Bromoform	<0.780		5.00	0.780	ug/L			10/12/24 01:24	1
Bromomethane	<1.10		4.00	1.10	ug/L			10/12/24 01:24	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			10/12/24 01:24	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			10/12/24 01:24	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			10/12/24 01:24	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			10/12/24 01:24	1
Chloroethane	<0.790		4.00	0.790	ug/L			10/12/24 01:24	1
Chloroform	<1.30		3.00	1.30	ug/L			10/12/24 01:24	1
Chloromethane	<0.610		3.00	0.610	ug/L			10/12/24 01:24	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			10/12/24 01:24	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			10/12/24 01:24	1
Dibromomethane	<0.330		1.00	0.330	ug/L			10/12/24 01:24	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			10/12/24 01:24	1
Iodomethane	<7.00		10.0	7.00	ug/L			10/12/24 01:24	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			10/12/24 01:24	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			10/12/24 01:24	1
o-Xylene	<0.400		1.00	0.400	ug/L			10/12/24 01:24	1
Styrene	<0.370		1.00	0.370	ug/L			10/12/24 01:24	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			10/12/24 01:24	1
Toluene	**0.513**	**J**	1.00	0.430	ug/L			10/12/24 01:24	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			10/12/24 01:24	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			10/12/24 01:24	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			10/12/24 01:24	1
Trichloroethene	<0.430		1.00	0.430	ug/L			10/12/24 01:24	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			10/12/24 01:24	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			10/12/24 01:24	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			10/12/24 01:24	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			10/12/24 01:24	1

Client: AECOM
Job ID: 310-292343-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Equipment Blank-1
Lab Sample ID: 310-292343-4

Date Collected: 10/08/24 14:30
Matrix: Water

Date Received: 10/09/24 09:30

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*101*		*73 - 130*		*10/12/24 01:24*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*10/12/24 01:24*	*1*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*		*10/12/24 01:24*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		10/11/24 09:30	10/16/24 13:06	1
Arsenic	<0.530		2.00	0.530	ug/L		10/11/24 09:30	10/11/24 23:35	1
Barium	<0.660		2.00	0.660	ug/L		10/11/24 09:30	10/16/24 13:06	1
Beryllium	<0.330		1.00	0.330	ug/L		10/11/24 09:30	10/14/24 19:37	1
Cadmium	<0.100		0.200	0.100	ug/L		10/11/24 09:30	10/14/24 19:37	1
Chromium	<1.20		5.00	1.20	ug/L		11/01/24 09:30	11/04/24 19:26	1
Cobalt	<0.170		0.500	0.170	ug/L		10/11/24 09:30	10/11/24 23:35	1
Copper	<1.80		5.00	1.80	ug/L		10/11/24 09:30	10/11/24 23:35	1
Lead	<0.260		0.500	0.260	ug/L		10/11/24 09:30	10/14/24 19:37	1
Nickel	<2.10		5.00	2.10	ug/L		10/11/24 09:30	10/11/24 23:35	1
Selenium	<1.40		5.00	1.40	ug/L		10/11/24 09:30	10/11/24 23:35	1
Silver	<0.500		1.00	0.500	ug/L		10/11/24 09:30	10/11/24 23:35	1
Thallium	<0.570		1.00	0.570	ug/L		10/11/24 09:30	10/22/24 15:14	1
Vanadium	<1.10		5.00	1.10	ug/L		10/11/24 09:30	10/11/24 23:35	1
Zinc	<9.70		20.0	9.70	ug/L		11/01/24 09:30	11/05/24 15:15	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	<1.39		1.88	1.39	mg/L			10/11/24 08:52	1

Client: AECOM
Job ID: 310-292343-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Trip Blank
Lab Sample ID: 310-292343-5
Date Collected: 10/08/24 00:00
Matrix: Water
Date Received: 10/09/24 09:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			10/12/24 01:47	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			10/12/24 01:47	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			10/12/24 01:47	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			10/12/24 01:47	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			10/12/24 01:47	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			10/12/24 01:47	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			10/12/24 01:47	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			10/12/24 01:47	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			10/12/24 01:47	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			10/12/24 01:47	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			10/12/24 01:47	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			10/12/24 01:47	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			10/12/24 01:47	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			10/12/24 01:47	1
2-Hexanone	<2.00		10.0	2.00	ug/L			10/12/24 01:47	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			10/12/24 01:47	1
Acetone	<3.10		10.0	3.10	ug/L			10/12/24 01:47	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			10/12/24 01:47	1
Benzene	<0.220		0.500	0.220	ug/L			10/12/24 01:47	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			10/12/24 01:47	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			10/12/24 01:47	1
Bromoform	<0.780		5.00	0.780	ug/L			10/12/24 01:47	1
Bromomethane	<1.10		4.00	1.10	ug/L			10/12/24 01:47	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			10/12/24 01:47	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			10/12/24 01:47	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			10/12/24 01:47	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			10/12/24 01:47	1
Chloroethane	<0.790		4.00	0.790	ug/L			10/12/24 01:47	1
Chloroform	<1.30		3.00	1.30	ug/L			10/12/24 01:47	1
Chloromethane	<0.610		3.00	0.610	ug/L			10/12/24 01:47	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			10/12/24 01:47	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			10/12/24 01:47	1
Dibromomethane	<0.330		1.00	0.330	ug/L			10/12/24 01:47	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			10/12/24 01:47	1
Iodomethane	<7.00		10.0	7.00	ug/L			10/12/24 01:47	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			10/12/24 01:47	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			10/12/24 01:47	1
o-Xylene	<0.400		1.00	0.400	ug/L			10/12/24 01:47	1
Styrene	<0.370		1.00	0.370	ug/L			10/12/24 01:47	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			10/12/24 01:47	1
Toluene	<0.430		1.00	0.430	ug/L			10/12/24 01:47	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			10/12/24 01:47	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			10/12/24 01:47	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			10/12/24 01:47	1
Trichloroethene	<0.430		1.00	0.430	ug/L			10/12/24 01:47	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			10/12/24 01:47	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			10/12/24 01:47	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			10/12/24 01:47	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			10/12/24 01:47	1

Client: AECOM
Job ID: 310-292343-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Trip Blank
Lab Sample ID: 310-292343-5
Date Collected: 10/08/24 00:00
Matrix: Water
Date Received: 10/09/24 09:30

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	99		73 - 130		10/12/24 01:47	1
Toluene-d8 (Surr)	99		80 - 120		10/12/24 01:47	1
4-Bromofluorobenzene (Surr)	100		80 - 120		10/12/24 01:47	1

Client: AECOM
Job ID: 310-292343-1
Project/Site: Black Hawk County Landfill (IDNR)

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC Semi VOA

Qualifier	Qualifier Description
p	The %RPD between the primary and confirmation column/detector is >40%. The lower value has been reported.
S1+	Surrogate recovery exceeds control limits, high biased.

Metals

Qualifier	Qualifier Description
^+	Continuing Calibration Verification (CCV) is outside acceptance limits, high biased.
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Surrogate Summary

Client: AECOM
Job ID: 310-292343-1
Project/Site: Black Hawk County Landfill (IDNR)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Ground Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-292343-2	OW-223B-FD	99	100	100

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-292343-1	OW-223B	99	100	101
310-292343-3	OW-225B	100	99	100
310-292343-4	Equipment Blank-1	101	98	103
310-292343-5	Trip Blank	99	99	100
LCS 310-435986/6	Lab Control Sample	95	101	100
LCS 310-435986/7	Lab Control Sample	103	98	101
LCS 310-435992/7	Lab Control Sample	101	100	99
LCS 310-435992/8	Lab Control Sample	100	99	99
MB 310-435986/5	Method Blank	102	98	104
MB 310-435992/6	Method Blank	100	99	100

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		2FP	PHL	NBZ	FBP	TBP	TPHL
Lab Sample ID	Client Sample ID	(25-110)	(21-110)	(45-129)	(39-118)	(27-136)	(12-144)
310-292343-3	OW-225B	60	51	83	86	92	93
LCS 310-435895/2-A	Lab Control Sample	55	46	72	74	90	98
LCSD 310-435895/3-A	Lab Control Sample Dup	48	42	59	58	74	94
MB 310-435895/1-A	Method Blank	49	42	64	61	66	94

Surrogate Legend

2FP = 2-Fluorophenol (Surr)
PHL = Phenol-d5 (Surr)
NBZ = Nitrobenzene-d5 (Surr)
FBP = 2-Fluorobiphenyl (Surr)
TBP = 2,4,6-Tribromophenol (Surr)
TPHL = Terphenyl-d14 (Surr)

Surrogate Summary

Client: AECOM
Job ID: 310-292343-1
Project/Site: Black Hawk County Landfill (IDNR)

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)									
		DCB1	TCX1								
Lab Sample ID	Client Sample ID	(10-136)	(10-130)								
310-292343-3	OW-225B	95	90								
LCS 310-436331/14-A	Lab Control Sample	115	103								
MB 310-436331/1-A	Method Blank	25	102								

Surrogate Legend

DCB = DCB Decachlorobiphenyl (Surr)

TCX = Tetrachloro-m-xylene (Surr)

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)									
		DCB1	TCX1								
Lab Sample ID	Client Sample ID	(10-136)	(10-130)								
310-292343-3	OW-225B	95	90								
LCS 310-436331/13-A	Lab Control Sample	86	90								
MB 310-436331/1-A	Method Blank	25	102								

Surrogate Legend

DCB = DCB Decachlorobiphenyl (Surr)

TCX = Tetrachloro-m-xylene (Surr)

Method: 8151A - Herbicides (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)									
		DCPAA1	DCPAA2								
Lab Sample ID	Client Sample ID	(34-142)	(34-142)								
310-292343-3	OW-225B	105 p	280 S1+								
LCS 410-563253/2-A	Lab Control Sample	90	93								
LCSD 410-563253/3-A	Lab Control Sample Dup	93	96								
MB 410-563253/1-A	Method Blank	78	67								

Surrogate Legend

DCPAA = DCAA

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 310-435986/5
Matrix: Water
Analysis Batch: 435986

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			10/11/24 22:46	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			10/11/24 22:46	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			10/11/24 22:46	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			10/11/24 22:46	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			10/11/24 22:46	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			10/11/24 22:46	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			10/11/24 22:46	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			10/11/24 22:46	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			10/11/24 22:46	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			10/11/24 22:46	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			10/11/24 22:46	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			10/11/24 22:46	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			10/11/24 22:46	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			10/11/24 22:46	1
2-Hexanone	<2.00		10.0	2.00	ug/L			10/11/24 22:46	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			10/11/24 22:46	1
Acetone	<3.10		10.0	3.10	ug/L			10/11/24 22:46	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			10/11/24 22:46	1
Benzene	<0.220		0.500	0.220	ug/L			10/11/24 22:46	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			10/11/24 22:46	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			10/11/24 22:46	1
Bromoform	<0.780		5.00	0.780	ug/L			10/11/24 22:46	1
Bromomethane	<1.10		4.00	1.10	ug/L			10/11/24 22:46	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			10/11/24 22:46	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			10/11/24 22:46	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			10/11/24 22:46	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			10/11/24 22:46	1
Chloroethane	<0.790		4.00	0.790	ug/L			10/11/24 22:46	1
Chloroform	<1.30		3.00	1.30	ug/L			10/11/24 22:46	1
Chloromethane	<0.610		3.00	0.610	ug/L			10/11/24 22:46	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			10/11/24 22:46	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			10/11/24 22:46	1
Dibromomethane	<0.330		1.00	0.330	ug/L			10/11/24 22:46	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			10/11/24 22:46	1
Iodomethane	<7.00		10.0	7.00	ug/L			10/11/24 22:46	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			10/11/24 22:46	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			10/11/24 22:46	1
o-Xylene	<0.400		1.00	0.400	ug/L			10/11/24 22:46	1
Styrene	<0.370		1.00	0.370	ug/L			10/11/24 22:46	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			10/11/24 22:46	1
Toluene	<0.430		1.00	0.430	ug/L			10/11/24 22:46	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			10/11/24 22:46	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			10/11/24 22:46	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			10/11/24 22:46	1
Trichloroethene	<0.430		1.00	0.430	ug/L			10/11/24 22:46	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			10/11/24 22:46	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			10/11/24 22:46	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			10/11/24 22:46	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-435986/5
Matrix: Water
Analysis Batch: 435986

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	<0.400		3.00	0.400	ug/L			10/11/24 22:46	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*102*		*73 - 130*		*10/11/24 22:46*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*10/11/24 22:46*	*1*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*		*10/11/24 22:46*	*1*

Lab Sample ID: LCS 310-435986/6
Matrix: Water
Analysis Batch: 435986

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	20.0	20.08		ug/L		100	71 - 120
1,1,1-Trichloroethane	20.0	23.34		ug/L		117	73 - 129
1,1,2,2-Tetrachloroethane	20.0	20.64		ug/L		103	68 - 124
1,1,2-Trichloroethane	20.0	21.28		ug/L		106	73 - 123
1,1-Dichloroethane	20.0	24.26		ug/L		121	70 - 127
1,1-Dichloroethene	20.0	25.88		ug/L		129	63 - 132
1,2,3-Trichloropropane	20.0	20.06		ug/L		100	65 - 127
1,2-Dibromo-3-Chloropropane	20.0	21.75		ug/L		109	50 - 150
1,2-Dibromoethane (EDB)	20.0	19.61		ug/L		98	75 - 125
1,2-Dichlorobenzene	20.0	21.07		ug/L		105	74 - 120
1,2-Dichloroethane	20.0	20.88		ug/L		104	71 - 125
1,2-Dichloropropane	20.0	23.28		ug/L		116	73 - 124
1,4-Dichlorobenzene	20.0	20.36		ug/L		102	72 - 120
2-Butanone (MEK)	40.0	38.75		ug/L		97	50 - 150
2-Hexanone	40.0	40.00		ug/L		100	60 - 140
4-Methyl-2-pentanone (MIBK)	40.0	38.72		ug/L		97	60 - 139
Acetone	40.0	42.76		ug/L		107	50 - 150
Acrylonitrile	200	224.2		ug/L		112	50 - 150
Benzene	20.0	23.26		ug/L		116	72 - 124
Bromochloromethane	20.0	21.57		ug/L		108	73 - 130
Bromodichloromethane	20.0	20.05		ug/L		100	74 - 122
Bromoform	20.0	18.86		ug/L		94	61 - 122
Carbon disulfide	20.0	25.99		ug/L		130	59 - 135
Carbon tetrachloride	20.0	23.31		ug/L		117	67 - 132
Chlorobenzene	20.0	20.98		ug/L		105	76 - 120
Chlorodibromomethane	20.0	19.83		ug/L		99	71 - 121
Chloroform	20.0	21.41		ug/L		107	72 - 125
cis-1,2-Dichloroethene	20.0	21.65		ug/L		108	74 - 123
cis-1,3-Dichloropropene	20.0	21.71		ug/L		109	71 - 125
Dibromomethane	20.0	20.85		ug/L		104	74 - 125
Ethylbenzene	20.0	21.95		ug/L		110	74 - 122
Iodomethane	20.0	23.88		ug/L		119	10 - 150
Methylene Chloride	20.0	24.66		ug/L		123	50 - 150
Styrene	20.0	21.25		ug/L		106	74 - 121
Tetrachloroethene	20.0	21.18		ug/L		106	71 - 130
Toluene	20.0	21.16		ug/L		106	74 - 123

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-435986/6
Matrix: Water
Analysis Batch: 435986

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
trans-1,2-Dichloroethene	20.0	22.44		ug/L		112	70 - 126
trans-1,3-Dichloropropene	20.0	19.94		ug/L		100	69 - 123
trans-1,4-Dichloro-2-butene	20.0	19.34		ug/L		97	50 - 150
Trichloroethene	20.0	22.19		ug/L		111	72 - 126
Vinyl acetate	40.0	43.81		ug/L		110	50 - 150
Xylenes, Total	40.0	42.18		ug/L		105	73 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*95*		*73 - 130*
Toluene-d8 (Surr)	*101*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*

Lab Sample ID: LCS 310-435986/7
Matrix: Water
Analysis Batch: 435986

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	20.37		ug/L		102	23 - 150
Chloroethane	20.0	20.04		ug/L		100	54 - 136
Chloromethane	20.0	19.99		ug/L		100	38 - 150
Trichlorofluoromethane	20.0	18.98		ug/L		95	54 - 149
Vinyl chloride	20.0	19.78		ug/L		99	56 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*103*		*73 - 130*
Toluene-d8 (Surr)	*98*		*80 - 120*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*

Lab Sample ID: MB 310-435992/6
Matrix: Water
Analysis Batch: 435992

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			10/11/24 19:55	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			10/11/24 19:55	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			10/11/24 19:55	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			10/11/24 19:55	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			10/11/24 19:55	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			10/11/24 19:55	1
1,1-Dichloropropene	<0.430		1.00	0.430	ug/L			10/11/24 19:55	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			10/11/24 19:55	1
1,2,4-Trichlorobenzene	<0.750		5.00	0.750	ug/L			10/11/24 19:55	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			10/11/24 19:55	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			10/11/24 19:55	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			10/11/24 19:55	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			10/11/24 19:55	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			10/11/24 19:55	1
1,3-Dichlorobenzene	<0.300		1.00	0.300	ug/L			10/11/24 19:55	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-435992/6
Matrix: Water
Analysis Batch: 435992

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichloropropane	<0.400		1.00	0.400	ug/L			10/11/24 19:55	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			10/11/24 19:55	1
2,2-Dichloropropane	<0.690		4.00	0.690	ug/L			10/11/24 19:55	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			10/11/24 19:55	1
2-Hexanone	<2.00		10.0	2.00	ug/L			10/11/24 19:55	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			10/11/24 19:55	1
Acetone	<3.10		10.0	3.10	ug/L			10/11/24 19:55	1
Acrolein	<3.60		10.0	3.60	ug/L			10/11/24 19:55	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			10/11/24 19:55	1
Allyl chloride	<0.700		2.00	0.700	ug/L			10/11/24 19:55	1
Benzene	<0.220		0.500	0.220	ug/L			10/11/24 19:55	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			10/11/24 19:55	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			10/11/24 19:55	1
Bromoform	<0.780		5.00	0.780	ug/L			10/11/24 19:55	1
Bromomethane	<1.10		4.00	1.10	ug/L			10/11/24 19:55	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			10/11/24 19:55	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			10/11/24 19:55	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			10/11/24 19:55	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			10/11/24 19:55	1
Chloroethane	<0.790		4.00	0.790	ug/L			10/11/24 19:55	1
Chloroform	<1.30		3.00	1.30	ug/L			10/11/24 19:55	1
Chloromethane	<0.610		3.00	0.610	ug/L			10/11/24 19:55	1
Chloroprene	<0.230		1.00	0.230	ug/L			10/11/24 19:55	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			10/11/24 19:55	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			10/11/24 19:55	1
Dibromomethane	<0.330		1.00	0.330	ug/L			10/11/24 19:55	1
Dichlorodifluoromethane	<0.250		3.00	0.250	ug/L			10/11/24 19:55	1
Ethyl methacrylate	<0.680		2.00	0.680	ug/L			10/11/24 19:55	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			10/11/24 19:55	1
Iodomethane	<7.00		10.0	7.00	ug/L			10/11/24 19:55	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			10/11/24 19:55	1
Methacrylonitrile	<3.30		10.0	3.30	ug/L			10/11/24 19:55	1
Methyl methacrylate	<0.760		2.00	0.760	ug/L			10/11/24 19:55	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			10/11/24 19:55	1
Naphthalene	<3.00		5.00	3.00	ug/L			10/11/24 19:55	1
o-Xylene	<0.400		1.00	0.400	ug/L			10/11/24 19:55	1
Propionitrile	<3.40		10.0	3.40	ug/L			10/11/24 19:55	1
Styrene	<0.370		1.00	0.370	ug/L			10/11/24 19:55	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			10/11/24 19:55	1
Toluene	<0.430		1.00	0.430	ug/L			10/11/24 19:55	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			10/11/24 19:55	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			10/11/24 19:55	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			10/11/24 19:55	1
Trichloroethene	<0.430		1.00	0.430	ug/L			10/11/24 19:55	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			10/11/24 19:55	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			10/11/24 19:55	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			10/11/24 19:55	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			10/11/24 19:55	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-435992/6
Matrix: Water
Analysis Batch: 435992

Client Sample ID: Method Blank
Prep Type: Total/NA

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	*100*		*73 - 130*		*10/11/24 19:55*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*10/11/24 19:55*	*1*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*		*10/11/24 19:55*	*1*

Lab Sample ID: LCS 310-435992/7
Matrix: Water
Analysis Batch: 435992

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	20.0	20.54		ug/L		103	71 - 120
1,1,1-Trichloroethane	20.0	21.42		ug/L		107	73 - 129
1,1,2,2-Tetrachloroethane	20.0	20.67		ug/L		103	68 - 124
1,1,2-Trichloroethane	20.0	20.64		ug/L		103	73 - 123
1,1-Dichloroethane	20.0	20.73		ug/L		104	70 - 127
1,1-Dichloroethene	20.0	21.15		ug/L		106	63 - 132
1,1-Dichloropropene	20.0	21.25		ug/L		106	69 - 132
1,2,3-Trichloropropane	20.0	20.03		ug/L		100	65 - 127
1,2,4-Trichlorobenzene	20.0	20.73		ug/L		104	68 - 124
1,2-Dibromo-3-Chloropropane	20.0	19.84		ug/L		99	50 - 150
1,2-Dibromoethane (EDB)	20.0	20.75		ug/L		104	75 - 125
1,2-Dichlorobenzene	20.0	20.76		ug/L		104	74 - 120
1,2-Dichloroethane	20.0	20.51		ug/L		103	71 - 125
1,2-Dichloropropane	20.0	20.26		ug/L		101	73 - 124
1,3-Dichlorobenzene	20.0	20.84		ug/L		104	72 - 120
1,3-Dichloropropane	20.0	20.51		ug/L		103	72 - 125
1,4-Dichlorobenzene	20.0	20.49		ug/L		102	72 - 120
2,2-Dichloropropane	20.0	21.61		ug/L		108	50 - 150
2-Butanone (MEK)	40.0	37.39		ug/L		93	50 - 150
2-Hexanone	40.0	39.78		ug/L		99	60 - 140
4-Methyl-2-pentanone (MIBK)	40.0	40.43		ug/L		101	60 - 139
Acetone	40.0	37.01		ug/L		93	50 - 150
Acrolein	95.5	92.92		ug/L		97	49 - 150
Acrylonitrile	200	199.9		ug/L		100	50 - 150
Allyl chloride	20.0	20.85		ug/L		104	49 - 150
Benzene	20.0	20.72		ug/L		104	72 - 124
Bromochloromethane	20.0	21.02		ug/L		105	73 - 130
Bromodichloromethane	20.0	20.41		ug/L		102	74 - 122
Bromoform	20.0	20.06		ug/L		100	61 - 122
Carbon disulfide	20.0	20.62		ug/L		103	59 - 135
Carbon tetrachloride	20.0	21.28		ug/L		106	67 - 132
Chlorobenzene	20.0	20.71		ug/L		104	76 - 120
Chlorodibromomethane	20.0	20.49		ug/L		102	71 - 121
Chloroform	20.0	20.07		ug/L		100	72 - 125
Chloroprene	20.0	21.06		ug/L		105	69 - 133
cis-1,2-Dichloroethene	20.0	20.74		ug/L		104	74 - 123
cis-1,3-Dichloropropene	20.0	20.94		ug/L		105	71 - 125
Dibromomethane	20.0	20.48		ug/L		102	74 - 125
Ethyl methacrylate	20.0	21.05		ug/L		105	70 - 129

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-435992/7
Matrix: Water
Analysis Batch: 435992

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	20.0	21.32		ug/L		107	74 - 122
Iodomethane	20.0	15.91		ug/L		80	10 - 150
Methacrylonitrile	200	202.6		ug/L		101	69 - 129
Methyl methacrylate	40.0	41.91		ug/L		105	68 - 131
Methylene Chloride	20.0	20.43		ug/L		102	50 - 150
Naphthalene	20.0	21.03		ug/L		105	50 - 150
Propionitrile	200	199.6		ug/L		100	63 - 135
Styrene	20.0	21.45		ug/L		107	74 - 121
Tetrachloroethene	20.0	21.59		ug/L		108	71 - 130
Toluene	20.0	20.83		ug/L		104	74 - 123
trans-1,2-Dichloroethene	20.0	21.04		ug/L		105	70 - 126
trans-1,3-Dichloropropene	20.0	20.69		ug/L		103	69 - 123
trans-1,4-Dichloro-2-butene	20.0	19.05		ug/L		95	50 - 150
Trichloroethene	20.0	20.85		ug/L		104	72 - 126
Vinyl acetate	40.0	41.54		ug/L		104	50 - 150
Xylenes, Total	40.0	42.58		ug/L		106	73 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*101*		*73 - 130*
Toluene-d8 (Surr)	*100*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*

Lab Sample ID: LCS 310-435992/8
Matrix: Water
Analysis Batch: 435992

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	15.65		ug/L		78	23 - 150
Chloroethane	20.0	17.93		ug/L		90	54 - 136
Chloromethane	20.0	17.70		ug/L		88	38 - 150
Dichlorodifluoromethane	20.0	19.22		ug/L		96	39 - 150
Trichlorofluoromethane	20.0	19.59		ug/L		98	54 - 149
Vinyl chloride	20.0	18.49		ug/L		92	56 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*100*		*73 - 130*
Toluene-d8 (Surr)	*99*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 310-435895/1-A
Matrix: Water
Analysis Batch: 436520

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 435895

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4,5-Tetrachlorobenzene	<0.540		10.0	0.540	ug/L		10/11/24 06:28	10/17/24 14:28	1
1,3,5-Trinitrobenzene	<2.30		10.0	2.30	ug/L		10/11/24 06:28	10/17/24 14:28	1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 310-435895/1-A
Matrix: Water
Analysis Batch: 436520

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 435895

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dinitrobenzene	<3.20		10.0	3.20	ug/L		10/11/24 06:28	10/17/24 14:28	1
1,4-Naphthoquinone	<3.60		10.0	3.60	ug/L		10/11/24 06:28	10/17/24 14:28	1
1,4-phenylenediamine	<1.90		10.0	1.90	ug/L		10/11/24 06:28	10/17/24 14:28	1
1-Naphthylamine	<2.50		10.0	2.50	ug/L		10/11/24 06:28	10/17/24 14:28	1
2,3,4,6-Tetrachlorophenol	<5.30		10.0	5.30	ug/L		10/11/24 06:28	10/17/24 14:28	1
2,4,5-Trichlorophenol	<5.30		10.0	5.30	ug/L		10/11/24 06:28	10/17/24 14:28	1
2,4,6-Trichlorophenol	<5.00		10.0	5.00	ug/L		10/11/24 06:28	10/17/24 14:28	1
2,4-Dichlorophenol	<0.850		10.0	0.850	ug/L		10/11/24 06:28	10/17/24 14:28	1
2,4-Dimethylphenol	<0.580		10.0	0.580	ug/L		10/11/24 06:28	10/17/24 14:28	1
2,4-Dinitrophenol	<13.0		20.0	13.0	ug/L		10/11/24 06:28	10/17/24 14:28	1
2,4-Dinitrotoluene	<6.40		10.0	6.40	ug/L		10/11/24 06:28	10/17/24 14:28	1
2,6-Dichlorophenol	<0.690		10.0	0.690	ug/L		10/11/24 06:28	10/17/24 14:28	1
2,6-Dinitrotoluene	<0.520		10.0	0.520	ug/L		10/11/24 06:28	10/17/24 14:28	1
2-Acetylaminofluorene	<2.70		10.0	2.70	ug/L		10/11/24 06:28	10/17/24 14:28	1
2-Chloronaphthalene	<0.640		10.0	0.640	ug/L		10/11/24 06:28	10/17/24 14:28	1
2-Chlorophenol	<0.540		10.0	0.540	ug/L		10/11/24 06:28	10/17/24 14:28	1
2-Methylnaphthalene	<0.590		10.0	0.590	ug/L		10/11/24 06:28	10/17/24 14:28	1
2-Methylphenol	<0.650		10.0	0.650	ug/L		10/11/24 06:28	10/17/24 14:28	1
2-Naphthylamine	<2.10		10.0	2.10	ug/L		10/11/24 06:28	10/17/24 14:28	1
2-Nitroaniline	<5.90		10.0	5.90	ug/L		10/11/24 06:28	10/17/24 14:28	1
2-Nitrophenol	<6.80		10.0	6.80	ug/L		10/11/24 06:28	10/17/24 14:28	1
3,3'-Dichlorobenzidine	<1.40		10.0	1.40	ug/L		10/11/24 06:28	10/17/24 14:28	1
3,3'-Dimethylbenzidine	<1.50		10.0	1.50	ug/L		10/11/24 06:28	10/17/24 14:28	1
3-Methylcholanthrene	<0.320		10.0	0.320	ug/L		10/11/24 06:28	10/17/24 14:28	1
3-Nitroaniline	<2.70		10.0	2.70	ug/L		10/11/24 06:28	10/17/24 14:28	1
4,6-Dinitro-2-methylphenol	<6.90		10.0	6.90	ug/L		10/11/24 06:28	10/17/24 14:28	1
4-Aminobiphenyl	<2.20		10.0	2.20	ug/L		10/11/24 06:28	10/17/24 14:28	1
4-Bromophenyl phenyl ether	<0.700		10.0	0.700	ug/L		10/11/24 06:28	10/17/24 14:28	1
4-Chloro-3-methylphenol	<0.840		10.0	0.840	ug/L		10/11/24 06:28	10/17/24 14:28	1
4-Chloroaniline	<0.620		10.0	0.620	ug/L		10/11/24 06:28	10/17/24 14:28	1
4-Chlorophenyl phenyl ether	<0.690		10.0	0.690	ug/L		10/11/24 06:28	10/17/24 14:28	1
Methylphenol, 3 & 4	<0.700		10.0	0.700	ug/L		10/11/24 06:28	10/17/24 14:28	1
4-Nitroaniline	<1.30		10.0	1.30	ug/L		10/11/24 06:28	10/17/24 14:28	1
4-Nitrophenol	<7.60		10.0	7.60	ug/L		10/11/24 06:28	10/17/24 14:28	1
5-Nitro-o-toluidine	<2.80		10.0	2.80	ug/L		10/11/24 06:28	10/17/24 14:28	1
7,12-Dimethylbenz(a)anthracene	<1.90		10.0	1.90	ug/L		10/11/24 06:28	10/17/24 14:28	1
Acenaphthene	<0.640		10.0	0.640	ug/L		10/11/24 06:28	10/17/24 14:28	1
Acenaphthylene	<0.720		10.0	0.720	ug/L		10/11/24 06:28	10/17/24 14:28	1
Acetophenone	<0.690		10.0	0.690	ug/L		10/11/24 06:28	10/17/24 14:28	1
Anthracene	<0.870		10.0	0.870	ug/L		10/11/24 06:28	10/17/24 14:28	1
Benzo[a]anthracene	<0.850		10.0	0.850	ug/L		10/11/24 06:28	10/17/24 14:28	1
Benzo[a]pyrene	<8.10		10.0	8.10	ug/L		10/11/24 06:28	10/17/24 14:28	1
Benzo[b]fluoranthene	<4.90		10.0	4.90	ug/L		10/11/24 06:28	10/17/24 14:28	1
Benzo[g,h,i]perylene	<6.30		10.0	6.30	ug/L		10/11/24 06:28	10/17/24 14:28	1
Benzo[k]fluoranthene	<2.20		10.0	2.20	ug/L		10/11/24 06:28	10/17/24 14:28	1
Benzyl alcohol	<1.30		10.0	1.30	ug/L		10/11/24 06:28	10/17/24 14:28	1
Bis(2-chloroethoxy)methane	<0.760		10.0	0.760	ug/L		10/11/24 06:28	10/17/24 14:28	1
Bis(2-chloroethyl)ether	<0.820		10.0	0.820	ug/L		10/11/24 06:28	10/17/24 14:28	1
bis (2-chloroisopropyl) ether	<0.540		10.0	0.540	ug/L		10/11/24 06:28	10/17/24 14:28	1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 310-435895/1-A
Matrix: Water
Analysis Batch: 436520

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 435895

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	<5.50		10.0	5.50	ug/L		10/11/24 06:28	10/17/24 14:28	1
Butyl benzyl phthalate	<5.40		10.0	5.40	ug/L		10/11/24 06:28	10/17/24 14:28	1
Chlorobenzilate	<3.60		10.0	3.60	ug/L		10/11/24 06:28	10/17/24 14:28	1
Chrysene	<0.870		10.0	0.870	ug/L		10/11/24 06:28	10/17/24 14:28	1
Diallate	<4.00		10.0	4.00	ug/L		10/11/24 06:28	10/17/24 14:28	1
Dibenzo(a,h)anthracene	<3.90		10.0	3.90	ug/L		10/11/24 06:28	10/17/24 14:28	1
Dibenzofuran	<0.740		10.0	0.740	ug/L		10/11/24 06:28	10/17/24 14:28	1
Diethyl phthalate	<1.70		10.0	1.70	ug/L		10/11/24 06:28	10/17/24 14:28	1
Dimethoate	<3.60		10.0	3.60	ug/L		10/11/24 06:28	10/17/24 14:28	1
Dimethyl phthalate	<1.00		10.0	1.00	ug/L		10/11/24 06:28	10/17/24 14:28	1
Di-n-butyl phthalate	<5.60		10.0	5.60	ug/L		10/11/24 06:28	10/17/24 14:28	1
Di-n-octyl phthalate	<7.00		20.0	7.00	ug/L		10/11/24 06:28	10/17/24 14:28	1
Dinoseb	<2.40		10.0	2.40	ug/L		10/11/24 06:28	10/17/24 14:28	1
Diphenylamine	<6.00		10.0	6.00	ug/L		10/11/24 06:28	10/17/24 14:28	1
Disulfoton	<2.40		10.0	2.40	ug/L		10/11/24 06:28	10/17/24 14:28	1
Ethyl methanesulfonate	<3.60		10.0	3.60	ug/L		10/11/24 06:28	10/17/24 14:28	1
Ethyl Parathion	<2.20		10.0	2.20	ug/L		10/11/24 06:28	10/17/24 14:28	1
Famphur	<3.80		10.0	3.80	ug/L		10/11/24 06:28	10/17/24 14:28	1
Fluoranthene	<1.70		10.0	1.70	ug/L		10/11/24 06:28	10/17/24 14:28	1
Fluorene	<0.790		10.0	0.790	ug/L		10/11/24 06:28	10/17/24 14:28	1
Hexachlorobenzene	<0.700		10.0	0.700	ug/L		10/11/24 06:28	10/17/24 14:28	1
Hexachlorobutadiene	<0.860		10.0	0.860	ug/L		10/11/24 06:28	10/17/24 14:28	1
Hexachlorocyclopentadiene	<5.10		10.0	5.10	ug/L		10/11/24 06:28	10/17/24 14:28	1
Hexachloroethane	<0.970		10.0	0.970	ug/L		10/11/24 06:28	10/17/24 14:28	1
Hexachloropropene	<2.60		10.0	2.60	ug/L		10/11/24 06:28	10/17/24 14:28	1
Indeno[1,2,3-cd]pyrene	<4.20		10.0	4.20	ug/L		10/11/24 06:28	10/17/24 14:28	1
Isodrin	<4.70		10.0	4.70	ug/L		10/11/24 06:28	10/17/24 14:28	1
Isophorone	<0.930		10.0	0.930	ug/L		10/11/24 06:28	10/17/24 14:28	1
Isosafrole	<2.30		10.0	2.30	ug/L		10/11/24 06:28	10/17/24 14:28	1
Kepone	<1.00		10.0	1.00	ug/L		10/11/24 06:28	10/17/24 14:28	1
Methapyrilene	<0.760		10.0	0.760	ug/L		10/11/24 06:28	10/17/24 14:28	1
Methyl methanesulfonate	<3.30		10.0	3.30	ug/L		10/11/24 06:28	10/17/24 14:28	1
Methyl parathion	<2.30		10.0	2.30	ug/L		10/11/24 06:28	10/17/24 14:28	1
Nitrobenzene	<0.800		10.0	0.800	ug/L		10/11/24 06:28	10/17/24 14:28	1
N-Nitrosodiethylamine	<3.40		10.0	3.40	ug/L		10/11/24 06:28	10/17/24 14:28	1
N-Nitrosodimethylamine	<0.720		10.0	0.720	ug/L		10/11/24 06:28	10/17/24 14:28	1
N-Nitrosodi-n-butylamine	<3.90		10.0	3.90	ug/L		10/11/24 06:28	10/17/24 14:28	1
N-Nitrosodi-n-propylamine	<0.920		10.0	0.920	ug/L		10/11/24 06:28	10/17/24 14:28	1
N-Nitrosodiphenylamine	<0.750		10.0	0.750	ug/L		10/11/24 06:28	10/17/24 14:28	1
N-Nitrosomethylethylamine	<4.90		10.0	4.90	ug/L		10/11/24 06:28	10/17/24 14:28	1
N-Nitrosopiperidine	<2.70		10.0	2.70	ug/L		10/11/24 06:28	10/17/24 14:28	1
N-Nitrosopyrrolidine	<3.60		10.0	3.60	ug/L		10/11/24 06:28	10/17/24 14:28	1
o,o',o''-Triethylphosphorothioate	<3.20		10.0	3.20	ug/L		10/11/24 06:28	10/17/24 14:28	1
o-Toluidine	<2.90		10.0	2.90	ug/L		10/11/24 06:28	10/17/24 14:28	1
p-Dimethylamino azobenzene	<2.20		10.0	2.20	ug/L		10/11/24 06:28	10/17/24 14:28	1
Pentachlorobenzene	<2.80		10.0	2.80	ug/L		10/11/24 06:28	10/17/24 14:28	1
Pentachloronitrobenzene	<5.80		10.0	5.80	ug/L		10/11/24 06:28	10/17/24 14:28	1
Pentachlorophenol	<9.60		10.0	9.60	ug/L		10/11/24 06:28	10/17/24 14:28	1
Phenacetin	<1.90		10.0	1.90	ug/L		10/11/24 06:28	10/17/24 14:28	1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 310-435895/1-A
Matrix: Water
Analysis Batch: 436520

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 435895

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenanthrene	<0.790		10.0	0.790	ug/L		10/11/24 06:28	10/17/24 14:28	1
Phenol	<1.10		10.0	1.10	ug/L		10/11/24 06:28	10/17/24 14:28	1
Phorate	<3.20		10.0	3.20	ug/L		10/11/24 06:28	10/17/24 14:28	1
Pronamide	<2.70		10.0	2.70	ug/L		10/11/24 06:28	10/17/24 14:28	1
Pyrene	<0.790		10.0	0.790	ug/L		10/11/24 06:28	10/17/24 14:28	1
Safrole	<2.80		10.0	2.80	ug/L		10/11/24 06:28	10/17/24 14:28	1
Thionazin	<3.50		10.0	3.50	ug/L		10/11/24 06:28	10/17/24 14:28	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorophenol (Surr)	*49*		*25 - 110*	*10/11/24 06:28*	*10/17/24 14:28*	*1*
Phenol-d5 (Surr)	*42*		*21 - 110*	*10/11/24 06:28*	*10/17/24 14:28*	*1*
Nitrobenzene-d5 (Surr)	*64*		*45 - 129*	*10/11/24 06:28*	*10/17/24 14:28*	*1*
2-Fluorobiphenyl (Surr)	*61*		*39 - 118*	*10/11/24 06:28*	*10/17/24 14:28*	*1*
2,4,6-Tribromophenol (Surr)	*66*		*27 - 136*	*10/11/24 06:28*	*10/17/24 14:28*	*1*
Terphenyl-d14 (Surr)	*94*		*12 - 144*	*10/11/24 06:28*	*10/17/24 14:28*	*1*

Lab Sample ID: LCS 310-435895/2-A
Matrix: Water
Analysis Batch: 436520

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 435895

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2,4,5-Tetrachlorobenzene	100	57.60		ug/L		58	36 - 110
1,3-Dinitrobenzene	100	73.92		ug/L		74	45 - 138
2,3,4,6-Tetrachlorophenol	100	79.66		ug/L		80	33 - 134
2,4,5-Trichlorophenol	100	82.64		ug/L		83	35 - 133
2,4,6-Trichlorophenol	100	77.13		ug/L		77	28 - 139
2,4-Dichlorophenol	100	91.79		ug/L		92	41 - 124
2,4-Dimethylphenol	100	72.62		ug/L		73	31 - 142
2,4-Dinitrophenol	200	125.6		ug/L		63	10 - 138
2,4-Dinitrotoluene	100	88.61		ug/L		89	47 - 137
2,6-Dichlorophenol	100	80.95		ug/L		81	30 - 130
2,6-Dinitrotoluene	100	86.49		ug/L		86	51 - 130
2-Chloronaphthalene	100	51.77		ug/L		52	37 - 110
2-Chlorophenol	100	81.09		ug/L		81	44 - 117
2-Methylnaphthalene	100	55.87		ug/L		56	33 - 110
2-Methylphenol	100	75.20		ug/L		75	47 - 118
2-Nitroaniline	100	71.57		ug/L		72	50 - 135
2-Nitrophenol	100	85.09		ug/L		85	41 - 129
3-Nitroaniline	100	83.28		ug/L		83	42 - 139
4,6-Dinitro-2-methylphenol	200	173.6		ug/L		87	22 - 143
4-Bromophenyl phenyl ether	100	87.86		ug/L		88	45 - 119
4-Chloro-3-methylphenol	100	90.89		ug/L		91	49 - 130
4-Chloroaniline	100	73.52		ug/L		74	21 - 139
4-Chlorophenyl phenyl ether	100	76.45		ug/L		76	44 - 116
Methylphenol, 3 & 4	100	73.12		ug/L		73	46 - 117
4-Nitroaniline	100	72.33		ug/L		72	31 - 145
4-Nitrophenol	200	125.2		ug/L		63	18 - 110
Acenaphthene	100	71.89		ug/L		72	43 - 110

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 310-435895/2-A
Matrix: Water
Analysis Batch: 436520

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 435895

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Acenaphthylene	100	67.49		ug/L		67	40 - 110
Acetophenone	100	77.81		ug/L		78	48 - 119
Anthracene	100	90.85		ug/L		91	51 - 120
Benzo[a]anthracene	100	85.42		ug/L		85	51 - 123
Benzo[a]pyrene	100	83.08		ug/L		83	48 - 125
Benzo[b]fluoranthene	100	82.83		ug/L		83	49 - 129
Benzo[g,h,i]perylene	100	52.85		ug/L		53	43 - 139
Benzo[k]fluoranthene	100	87.27		ug/L		87	47 - 130
Benzyl alcohol	100	68.73		ug/L		69	39 - 128
Bis(2-chloroethoxy)methane	100	69.64		ug/L		70	48 - 121
Bis(2-chloroethyl)ether	100	65.25		ug/L		65	43 - 123
bis (2-chloroisopropyl) ether	100	73.14		ug/L		73	34 - 123
Bis(2-ethylhexyl) phthalate	100	92.10		ug/L		92	43 - 143
Butyl benzyl phthalate	100	83.82		ug/L		84	46 - 135
Chrysene	100	86.87		ug/L		87	51 - 125
Dibenzo(a,h)anthracene	100	69.28		ug/L		69	38 - 149
Dibenzofuran	100	73.74		ug/L		74	45 - 112
Diethyl phthalate	100	87.71		ug/L		88	43 - 135
Dimethyl phthalate	100	81.14		ug/L		81	43 - 129
Di-n-butyl phthalate	100	88.67		ug/L		89	50 - 133
Di-n-octyl phthalate	100	75.58		ug/L		76	34 - 150
Diphenylamine	85.0	66.64		ug/L		78	48 - 122
Fluoranthene	100	88.22		ug/L		88	47 - 128
Fluorene	100	79.26		ug/L		79	45 - 119
Hexachlorobenzene	100	86.39		ug/L		86	48 - 119
Hexachlorobutadiene	100	48.61		ug/L		49	32 - 110
Hexachlorocyclopentadiene	100	36.36		ug/L		36	10 - 110
Hexachloroethane	100	41.08		ug/L		41	31 - 110
Indeno[1,2,3-cd]pyrene	100	70.98		ug/L		71	37 - 150
Isophorone	100	78.75		ug/L		79	50 - 125
Nitrobenzene	100	65.30		ug/L		65	47 - 116
N-Nitrosodimethylamine	100	63.96		ug/L		64	37 - 110
N-Nitrosodi-n-propylamine	100	77.76		ug/L		78	45 - 130
N-Nitrosodiphenylamine	100	79.36		ug/L		79	49 - 121
Pentachlorophenol	200	155.3		ug/L		78	26 - 133
Phenanthrene	100	89.83		ug/L		90	51 - 117
Phenol	100	46.69		ug/L		47	29 - 110
Pyrene	100	92.59		ug/L		93	48 - 127

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorophenol (Surr)	*55*		*25 - 110*
Phenol-d5 (Surr)	*46*		*21 - 110*
Nitrobenzene-d5 (Surr)	*72*		*45 - 129*
2-Fluorobiphenyl (Surr)	*74*		*39 - 118*
2,4,6-Tribromophenol (Surr)	*90*		*27 - 136*
Terphenyl-d14 (Surr)	*98*		*12 - 144*

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 310-435895/3-A
Client Sample ID: Lab Control Sample Dup
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 436520
Prep Batch: 435895

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2,4,5-Tetrachlorobenzene			100	58.38		ug/L		58	36 - 110	1	35
1,3-Dinitrobenzene			100	59.17		ug/L		59	45 - 138	22	35
2,3,4,6-Tetrachlorophenol			100	64.62		ug/L		65	33 - 134	21	35
2,4,5-Trichlorophenol			100	68.24		ug/L		68	35 - 133	19	35
2,4,6-Trichlorophenol			100	61.90		ug/L		62	28 - 139	22	35
2,4-Dichlorophenol			100	72.49		ug/L		72	41 - 124	23	35
2,4-Dimethylphenol			100	54.71		ug/L		55	31 - 142	28	35
2,4-Dinitrophenol			200	102.7		ug/L		51	10 - 138	20	35
2,4-Dinitrotoluene			100	68.13		ug/L		68	47 - 137	26	35
2,6-Dichlorophenol			100	62.32		ug/L		62	30 - 130	26	35
2,6-Dinitrotoluene			100	66.48		ug/L		66	51 - 130	26	35
2-Chloronaphthalene			100	48.34		ug/L		48	37 - 110	7	35
2-Chlorophenol			100	63.05		ug/L		63	44 - 117	25	35
2-Methylnaphthalene			100	50.19		ug/L		50	33 - 110	11	35
2-Methylphenol			100	59.79		ug/L		60	47 - 118	23	35
2-Nitroaniline			100	58.05		ug/L		58	50 - 135	21	35
2-Nitrophenol			100	65.14		ug/L		65	41 - 129	27	35
3-Nitroaniline			100	72.65		ug/L		73	42 - 139	14	35
4,6-Dinitro-2-methylphenol			200	136.3		ug/L		68	22 - 143	24	35
4-Bromophenyl phenyl ether			100	68.07		ug/L		68	45 - 119	25	35
4-Chloro-3-methylphenol			100	72.23		ug/L		72	49 - 130	23	35
4-Chloroaniline			100	63.03		ug/L		63	21 - 139	15	35
4-Chlorophenyl phenyl ether			100	63.82		ug/L		64	44 - 116	18	35
Methylphenol, 3 & 4			100	61.48		ug/L		61	46 - 117	17	35
4-Nitroaniline			100	56.22		ug/L		56	31 - 145	25	35
4-Nitrophenol			200	107.4		ug/L		54	18 - 110	15	35
Acenaphthene			100	61.04		ug/L		61	43 - 110	16	35
Acenaphthylene			100	58.47		ug/L		58	40 - 110	14	35
Acetophenone			100	58.04		ug/L		58	48 - 119	29	35
Anthracene			100	69.82		ug/L		70	51 - 120	26	35
Benzo[a]anthracene			100	71.83		ug/L		72	51 - 123	17	35
Benzo[a]pyrene			100	71.33		ug/L		71	48 - 125	15	35
Benzo[b]fluoranthene			100	69.33		ug/L		69	49 - 129	18	35
Benzo[g,h,i]perylene			100	62.29		ug/L		62	43 - 139	16	35
Benzo[k]fluoranthene			100	80.91		ug/L		81	47 - 130	8	35
Benzyl alcohol			100	60.71		ug/L		61	39 - 128	12	35
Bis(2-chloroethoxy)methane			100	50.74		ug/L		51	48 - 121	31	35
Bis(2-chloroethyl)ether			100	48.92		ug/L		49	43 - 123	29	35
bis (2-chloroisopropyl) ether			100	54.61		ug/L		55	34 - 123	29	35
Bis(2-ethylhexyl) phthalate			100	77.82		ug/L		78	43 - 143	17	35
Butyl benzyl phthalate			100	68.59		ug/L		69	46 - 135	20	35
Chrysene			100	73.39		ug/L		73	51 - 125	17	35
Dibenzo(a,h)anthracene			100	58.72		ug/L		59	38 - 149	17	35
Dibenzofuran			100	60.40		ug/L		60	45 - 112	20	35
Diethyl phthalate			100	65.20		ug/L		65	43 - 135	29	35
Dimethyl phthalate			100	63.42		ug/L		63	43 - 129	25	35
Di-n-butyl phthalate			100	70.54		ug/L		71	50 - 133	23	35
Di-n-octyl phthalate			100	64.63		ug/L		65	34 - 150	16	35

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 310-435895/3-A
Matrix: Water
Analysis Batch: 436520

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 435895

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Diphenylamine			85.0	51.53		ug/L		61	48 - 122	26	35
Fluoranthene			100	71.51		ug/L		72	47 - 128	21	35
Fluorene			100	63.27		ug/L		63	45 - 119	22	35
Hexachlorobenzene			100	74.20		ug/L		74	48 - 119	15	35
Hexachlorobutadiene			100	59.00		ug/L		59	32 - 110	19	35
Hexachlorocyclopentadiene			100	38.71		ug/L		39	10 - 110	6	35
Hexachloroethane			100	43.72		ug/L		44	31 - 110	6	35
Indeno[1,2,3-cd]pyrene			100	57.43		ug/L		57	37 - 150	21	35
Isophorone			100	60.39		ug/L		60	50 - 125	26	35
Nitrobenzene			100	49.08		ug/L		49	47 - 116	28	35
N-Nitrosodimethylamine			100	55.27		ug/L		55	37 - 110	15	35
N-Nitrosodi-n-propylamine			100	55.86		ug/L		56	45 - 130	33	35
N-Nitrosodiphenylamine			100	59.51		ug/L		60	49 - 121	29	35
Pentachlorophenol			200	117.9		ug/L		59	26 - 133	27	35
Phenanthrene			100	70.67		ug/L		71	51 - 117	24	35
Phenol			100	37.78		ug/L		38	29 - 110	21	35
Pyrene			100	76.31		ug/L		76	48 - 127	19	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorophenol (Surr)	*48*		*25 - 110*
Phenol-d5 (Surr)	*42*		*21 - 110*
Nitrobenzene-d5 (Surr)	*59*		*45 - 129*
2-Fluorobiphenyl (Surr)	*58*		*39 - 118*
2,4,6-Tribromophenol (Surr)	*74*		*27 - 136*
Terphenyl-d14 (Surr)	*94*		*12 - 144*

Method: 8015C - Nonhalogenated Organic using GC/FID (Direct Aqueous Injection)

Lab Sample ID: MB 310-436077/4
Matrix: Water
Analysis Batch: 436077

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetonitrile	<2600		10000	2600	ug/L			10/14/24 08:18	1
Isobutanol	<2400		10000	2400	ug/L			10/14/24 08:18	1

Lab Sample ID: LCS 310-436077/5
Matrix: Water
Analysis Batch: 436077

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Acetonitrile			113000	133000		ug/L		117	67 - 132		
Isobutanol			104000	112500		ug/L		108	80 - 121		

Method: 8081B - Organochlorine Pesticides (GC)

Lab Sample ID: MB 310-436331/1-A
Matrix: Water
Analysis Batch: 436404

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 436331

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	<0.0230		0.0919	0.0230	ug/L		10/15/24 14:06	10/16/24 12:41	1
4,4'-DDE	<0.0276		0.0919	0.0276	ug/L		10/15/24 14:06	10/16/24 12:41	1
4,4'-DDT	<0.0184		0.0919	0.0184	ug/L		10/15/24 14:06	10/16/24 12:41	1
Aldrin	<0.0202		0.0919	0.0202	ug/L		10/15/24 14:06	10/16/24 12:41	1
alpha-BHC	<0.00919		0.0919	0.00919	ug/L		10/15/24 14:06	10/16/24 12:41	1
beta-BHC	<0.0386		0.0919	0.0386	ug/L		10/15/24 14:06	10/16/24 12:41	1
Chlordane (technical)	<0.358		1.84	0.358	ug/L		10/15/24 14:06	10/16/24 12:41	1
delta-BHC	<0.0294		0.0919	0.0294	ug/L		10/15/24 14:06	10/16/24 12:41	1
Dieldrin	<0.0193		0.0919	0.0193	ug/L		10/15/24 14:06	10/16/24 12:41	1
Endosulfan I	<0.0257		0.0919	0.0257	ug/L		10/15/24 14:06	10/16/24 12:41	1
Endosulfan II	<0.0239		0.0919	0.0239	ug/L		10/15/24 14:06	10/16/24 12:41	1
Endosulfan sulfate	<0.0165		0.0919	0.0165	ug/L		10/15/24 14:06	10/16/24 12:41	1
Endrin	<0.0257		0.0919	0.0257	ug/L		10/15/24 14:06	10/16/24 12:41	1
Endrin aldehyde	<0.0248		0.0919	0.0248	ug/L		10/15/24 14:06	10/16/24 12:41	1
gamma-BHC (Lindane)	<0.00919		0.0919	0.00919	ug/L		10/15/24 14:06	10/16/24 12:41	1
Heptachlor	<0.0211		0.0919	0.0211	ug/L		10/15/24 14:06	10/16/24 12:41	1
Heptachlor epoxide	<0.0294		0.0919	0.0294	ug/L		10/15/24 14:06	10/16/24 12:41	1
Methoxychlor	<0.0294		0.0919	0.0294	ug/L		10/15/24 14:06	10/16/24 12:41	1
Toxaphene	<0.919		1.84	0.919	ug/L		10/15/24 14:06	10/16/24 12:41	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*25*		*10 - 136*	*10/15/24 14:06*	*10/16/24 12:41*	*1*
Tetrachloro-m-xylene (Surr)	*102*		*10 - 130*	*10/15/24 14:06*	*10/16/24 12:41*	*1*

Lab Sample ID: LCS 310-436331/14-A
Matrix: Water
Analysis Batch: 436404

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 436331

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
4,4'-DDD	2.60	2.884		ug/L		111	36 - 149
4,4'-DDE	2.60	2.498		ug/L		96	34 - 130
4,4'-DDT	2.60	2.646		ug/L		102	23 - 150
Aldrin	2.60	2.560		ug/L		98	13 - 120
alpha-BHC	2.60	2.938		ug/L		113	36 - 127
beta-BHC	2.60	2.718		ug/L		104	37 - 136
delta-BHC	2.60	2.483		ug/L		95	33 - 134
Dieldrin	2.60	2.999		ug/L		115	39 - 130
Endosulfan I	2.60	1.625		ug/L		62	10 - 120
Endosulfan II	2.60	1.869		ug/L		72	14 - 120
Endosulfan sulfate	2.60	3.688		ug/L		142	36 - 147
Endrin	2.60	2.995		ug/L		115	39 - 140
Endrin aldehyde	2.60	2.718		ug/L		104	32 - 137
gamma-BHC (Lindane)	2.60	2.862		ug/L		110	36 - 132
Heptachlor	2.60	2.686		ug/L		103	27 - 120
Heptachlor epoxide	2.60	3.092		ug/L		119	38 - 133
Methoxychlor	2.60	3.159		ug/L		121	10 - 150

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: LCS 310-436331/14-A
Matrix: Water
Analysis Batch: 436404

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 436331

Surrogate	LCS %Recovery	LCS Qualifier	Limits
DCB Decachlorobiphenyl (Surr)	115		10 - 136
Tetrachloro-m-xylene (Surr)	103		10 - 130

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 310-436331/1-A
Matrix: Water
Analysis Batch: 436406

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 436331

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.753		1.84	0.753	ug/L		10/15/24 14:06	10/16/24 12:41	1
PCB-1221	<0.753		1.84	0.753	ug/L		10/15/24 14:06	10/16/24 12:41	1
PCB-1232	<0.753		1.84	0.753	ug/L		10/15/24 14:06	10/16/24 12:41	1
PCB-1242	<0.753		1.84	0.753	ug/L		10/15/24 14:06	10/16/24 12:41	1
PCB-1248	<0.634		1.84	0.634	ug/L		10/15/24 14:06	10/16/24 12:41	1
PCB-1254	<0.634		1.84	0.634	ug/L		10/15/24 14:06	10/16/24 12:41	1
PCB-1260	<0.634		1.84	0.634	ug/L		10/15/24 14:06	10/16/24 12:41	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl (Surr)	25		10 - 136	10/15/24 14:06	10/16/24 12:41	1
Tetrachloro-m-xylene (Surr)	102		10 - 130	10/15/24 14:06	10/16/24 12:41	1

Lab Sample ID: LCS 310-436331/13-A
Matrix: Water
Analysis Batch: 436406

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 436331

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
PCB-1016	26.6	22.99		ug/L		86	30 - 133
PCB-1260	26.6	23.31		ug/L		88	31 - 133

Surrogate	LCS %Recovery	LCS Qualifier	Limits
DCB Decachlorobiphenyl (Surr)	86		10 - 136
Tetrachloro-m-xylene (Surr)	90		10 - 130

Method: 8151A - Herbicides (GC)

Lab Sample ID: MB 410-563253/1-A
Matrix: Water
Analysis Batch: 563637

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 563253

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	<0.250		0.600	0.250	ug/L		10/15/24 09:09	10/16/24 05:06	1
Silvex (2,4,5-TP)	<0.0220		0.0500	0.0220	ug/L		10/15/24 09:09	10/16/24 05:06	1
2,4,5-T	<0.0650		0.150	0.0650	ug/L		10/15/24 09:09	10/16/24 05:06	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	78		34 - 142	10/15/24 09:09	10/16/24 05:06	1
DCAA	67		34 - 142	10/15/24 09:09	10/16/24 05:06	1

Method: 8151A - Herbicides (GC)

Lab Sample ID: LCS 410-563253/2-A
Matrix: Water
Analysis Batch: 563637

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 563253

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
2,4-D			2.50	2.602		ug/L		104	53 - 159		
Silvex (2,4,5-TP)			0.250	0.2984		ug/L		119	62 - 170		
2,4,5-T			0.250	0.2851		ug/L		114	57 - 171		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCAA	*90*		*34 - 142*
DCAA	*93*		*34 - 142*

Lab Sample ID: LCSD 410-563253/3-A
Matrix: Water
Analysis Batch: 563637

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 563253

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,4-D			2.50	2.685		ug/L		107	53 - 159	3	30
Silvex (2,4,5-TP)			0.250	0.3093		ug/L		124	62 - 170	4	30
2,4,5-T			0.250	0.2902		ug/L		116	57 - 171	2	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
DCAA	*93*		*34 - 142*
DCAA	*96*		*34 - 142*

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-435876/1-A
Matrix: Water
Analysis Batch: 436085

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 435876

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		10/11/24 09:30	10/11/24 22:24	1
Arsenic	<0.530		2.00	0.530	ug/L		10/11/24 09:30	10/11/24 22:24	1
Barium	<0.660		2.00	0.660	ug/L		10/11/24 09:30	10/11/24 22:24	1
Cadmium	<0.100		0.200	0.100	ug/L		10/11/24 09:30	10/11/24 22:24	1
Chromium	3.926	J	5.00	1.20	ug/L		10/11/24 09:30	10/11/24 22:24	1
Cobalt	<0.170		0.500	0.170	ug/L		10/11/24 09:30	10/11/24 22:24	1
Copper	<1.80		5.00	1.80	ug/L		10/11/24 09:30	10/11/24 22:24	1
Lead	<0.260		0.500	0.260	ug/L		10/11/24 09:30	10/11/24 22:24	1
Nickel	<2.10		5.00	2.10	ug/L		10/11/24 09:30	10/11/24 22:24	1
Selenium	<1.40		5.00	1.40	ug/L		10/11/24 09:30	10/11/24 22:24	1
Silver	<0.500		1.00	0.500	ug/L		10/11/24 09:30	10/11/24 22:24	1
Vanadium	<1.10		5.00	1.10	ug/L		10/11/24 09:30	10/11/24 22:24	1
Tin	<2.30		5.00	2.30	ug/L		10/11/24 09:30	10/11/24 22:24	1

Lab Sample ID: MB 310-435876/1-A
Matrix: Water
Analysis Batch: 436228

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 435876

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	<0.330		1.00	0.330	ug/L		10/11/24 09:30	10/14/24 18:36	1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 310-435876/1-A
Matrix: Water
Analysis Batch: 436228

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 435876

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	<1.80		5.00	1.80	ug/L		10/11/24 09:30	10/14/24 18:36	1
Lead	<0.260		0.500	0.260	ug/L		10/11/24 09:30	10/14/24 18:36	1
Selenium	<1.40		5.00	1.40	ug/L		10/11/24 09:30	10/14/24 18:36	1
Zinc	60.39		20.0	9.70	ug/L		10/11/24 09:30	10/14/24 18:36	1

Lab Sample ID: MB 310-435876/1-A
Matrix: Water
Analysis Batch: 437173

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 435876

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Thallium	<0.570		1.00	0.570	ug/L		10/11/24 09:30	10/22/24 14:43	1

Lab Sample ID: LCS 310-435876/2-A
Matrix: Water
Analysis Batch: 436085

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 435876

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	200	217.8		ug/L		109	80 - 120
Arsenic	200	207.8		ug/L		104	80 - 120
Barium	100	99.48		ug/L		99	80 - 120
Cadmium	100	94.71		ug/L		95	80 - 120
Chromium	100	103.1	B	ug/L		103	80 - 120
Cobalt	100	117.2		ug/L		117	80 - 120
Copper	200	226.2		ug/L		113	80 - 120
Lead	200	207.8		ug/L		104	80 - 120
Nickel	200	203.1		ug/L		102	80 - 120
Selenium	400	392.3		ug/L		98	80 - 120
Silver	100	107.7		ug/L		108	80 - 120
Vanadium	100	99.95		ug/L		100	80 - 120
Tin	200	212.7		ug/L		106	80 - 120

Lab Sample ID: LCS 310-435876/2-A
Matrix: Water
Analysis Batch: 436228

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 435876

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	200	186.8		ug/L		93	80 - 120
Barium	100	90.92		ug/L		91	80 - 120
Beryllium	100	84.77		ug/L		85	80 - 120
Cadmium	100	88.96		ug/L		89	80 - 120
Chromium	100	97.49		ug/L		97	80 - 120
Cobalt	100	95.23		ug/L		95	80 - 120
Copper	200	196.9		ug/L		98	80 - 120
Lead	200	198.3		ug/L		99	80 - 120
Selenium	400	347.2		ug/L		87	80 - 120
Silver	100	107.1		ug/L		107	80 - 120
Vanadium	100	91.28		ug/L		91	80 - 120

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 310-435876/2-A
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 437173
Prep Batch: 435876

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Thallium	100	81.38		ug/L		81	80 - 120

Lab Sample ID: MB 310-438272/1-A
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 438660
Prep Batch: 438272

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		11/01/24 09:30	11/04/24 18:39	1
Arsenic	<0.530		2.00	0.530	ug/L		11/01/24 09:30	11/04/24 18:39	1
Barium	<0.660		2.00	0.660	ug/L		11/01/24 09:30	11/04/24 18:39	1
Beryllium	<0.330		1.00	0.330	ug/L		11/01/24 09:30	11/04/24 18:39	1
Cadmium	<0.100		0.200	0.100	ug/L		11/01/24 09:30	11/04/24 18:39	1
Chromium	<1.20		5.00	1.20	ug/L		11/01/24 09:30	11/04/24 18:39	1
Cobalt	<0.170		0.500	0.170	ug/L		11/01/24 09:30	11/04/24 18:39	1
Copper	<1.80		5.00	1.80	ug/L		11/01/24 09:30	11/04/24 18:39	1
Lead	<0.260		0.500	0.260	ug/L		11/01/24 09:30	11/04/24 18:39	1
Nickel	<2.10		5.00	2.10	ug/L		11/01/24 09:30	11/04/24 18:39	1
Selenium	<1.40		5.00	1.40	ug/L		11/01/24 09:30	11/04/24 18:39	1
Silver	<0.500		1.00	0.500	ug/L		11/01/24 09:30	11/04/24 18:39	1
Thallium	<0.570		1.00	0.570	ug/L		11/01/24 09:30	11/04/24 18:39	1
Vanadium	<1.10		5.00	1.10	ug/L		11/01/24 09:30	11/04/24 18:39	1
Zinc	<9.70		20.0	9.70	ug/L		11/01/24 09:30	11/04/24 18:39	1
Tin	<2.30		5.00	2.30	ug/L		11/01/24 09:30	11/04/24 18:39	1

Lab Sample ID: MB 310-438272/1-A
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 438774
Prep Batch: 438272

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	<9.70		20.0	9.70	ug/L		11/01/24 09:30	11/05/24 14:20	1

Lab Sample ID: LCS 310-438272/2-A
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 438660
Prep Batch: 438272

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	200	211.3		ug/L		106	80 - 120
Arsenic	200	207.8		ug/L		104	80 - 120
Barium	100	102.5		ug/L		102	80 - 120
Beryllium	100	99.93		ug/L		100	80 - 120
Cadmium	100	99.22		ug/L		99	80 - 120
Chromium	100	106.0		ug/L		106	80 - 120
Cobalt	100	109.0		ug/L		109	80 - 120
Copper	200	206.0		ug/L		103	80 - 120
Lead	200	206.7		ug/L		103	80 - 120
Nickel	200	203.6		ug/L		102	80 - 120
Selenium	400	398.3		ug/L		100	80 - 120
Silver	100	112.6		ug/L		113	80 - 120
Thallium	100	86.23		ug/L		86	80 - 120

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 310-438272/2-A
Matrix: Water
Analysis Batch: 438660
Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 438272

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Vanadium	100	104.2		ug/L		104	80 - 120
Tin	200	213.9		ug/L		107	80 - 120

Lab Sample ID: LCS 310-438272/2-A
Matrix: Water
Analysis Batch: 438774
Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 438272

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Zinc	200	189.1		ug/L		95	80 - 120

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 310-436310/1-A
Matrix: Water
Analysis Batch: 436502
Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 436310

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.110		0.200	0.110	ug/L		10/15/24 15:55	10/16/24 16:01	1

Lab Sample ID: LCS 310-436310/2-A
Matrix: Water
Analysis Batch: 436502
Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 436310

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	1.67	1.528		ug/L		92	80 - 120

Method: 9012B - Cyanide, Total andor Amenable

Lab Sample ID: MB 310-435806/1-A
Matrix: Water
Analysis Batch: 435882
Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 435806

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	<3.50		10.0	3.50	ug/L		10/10/24 10:18	10/10/24 17:31	1

Lab Sample ID: LCS 310-435806/2-A
Matrix: Water
Analysis Batch: 435882
Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 435806

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	200	193.3		ug/L		97	90 - 110

Method: 9034 - Sulfide, Acid soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 240-630854/1-A
Matrix: Water
Analysis Batch: 630897
Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 630854

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.41		3.00	1.41	mg/L		10/15/24 10:08	10/15/24 13:11	1

Method: 9034 - Sulfide, Acid soluble and Insoluble (Titrimetric) (Continued)

Lab Sample ID: LCS 240-630854/2-A
Matrix: Water
Analysis Batch: 630897

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 630854

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfide	8.00	6.667		mg/L		83	70 - 120

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: MB 310-435918/1
Matrix: Water
Analysis Batch: 435918

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<3.70		5.00	3.70	mg/L			10/11/24 08:52	1

Lab Sample ID: LCS 310-435918/2
Matrix: Water
Analysis Batch: 435918

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	108.0		mg/L		108	81 - 116

QC Association Summary

Client: AECOM
Job ID: 310-292343-1
Project/Site: Black Hawk County Landfill (IDNR)

GC/MS VOA

Analysis Batch: 435986

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292343-4	Equipment Blank-1	Total/NA	Water	8260D	
310-292343-5	Trip Blank	Total/NA	Water	8260D	
MB 310-435986/5	Method Blank	Total/NA	Water	8260D	
LCS 310-435986/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-435986/7	Lab Control Sample	Total/NA	Water	8260D	

Analysis Batch: 435992

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292343-1	OW-223B	Total/NA	Water	8260D	
310-292343-2	OW-223B-FD	Total/NA	Ground Water	8260D	
310-292343-3	OW-225B	Total/NA	Water	8260D	
MB 310-435992/6	Method Blank	Total/NA	Water	8260D	
LCS 310-435992/7	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-435992/8	Lab Control Sample	Total/NA	Water	8260D	

GC/MS Semi VOA

Prep Batch: 435895

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292343-3	OW-225B	Total/NA	Water	3510C	
MB 310-435895/1-A	Method Blank	Total/NA	Water	3510C	
LCS 310-435895/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 310-435895/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 436520

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292343-3	OW-225B	Total/NA	Water	8270E	435895
MB 310-435895/1-A	Method Blank	Total/NA	Water	8270E	435895
LCS 310-435895/2-A	Lab Control Sample	Total/NA	Water	8270E	435895
LCSD 310-435895/3-A	Lab Control Sample Dup	Total/NA	Water	8270E	435895

GC Semi VOA

Analysis Batch: 436077

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292343-3	OW-225B	Total/NA	Water	8015C	
MB 310-436077/4	Method Blank	Total/NA	Water	8015C	
LCS 310-436077/5	Lab Control Sample	Total/NA	Water	8015C	

Prep Batch: 436331

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292343-3	OW-225B	Total/NA	Water	3511	
MB 310-436331/1-A	Method Blank	Total/NA	Water	3511	
LCS 310-436331/13-A	Lab Control Sample	Total/NA	Water	3511	
LCS 310-436331/14-A	Lab Control Sample	Total/NA	Water	3511	

Analysis Batch: 436404

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292343-3	OW-225B	Total/NA	Water	8081B	436331
MB 310-436331/1-A	Method Blank	Total/NA	Water	8081B	436331
LCS 310-436331/14-A	Lab Control Sample	Total/NA	Water	8081B	436331

GC Semi VOA

Analysis Batch: 436406

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292343-3	OW-225B	Total/NA	Water	8082A	436331
MB 310-436331/1-A	Method Blank	Total/NA	Water	8082A	436331
LCS 310-436331/13-A	Lab Control Sample	Total/NA	Water	8082A	436331

Prep Batch: 563253

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292343-3	OW-225B	Total/NA	Water	8151A	
MB 410-563253/1-A	Method Blank	Total/NA	Water	8151A	
LCS 410-563253/2-A	Lab Control Sample	Total/NA	Water	8151A	
LCSD 410-563253/3-A	Lab Control Sample Dup	Total/NA	Water	8151A	

Analysis Batch: 563637

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292343-3	OW-225B	Total/NA	Water	8151A	563253
MB 410-563253/1-A	Method Blank	Total/NA	Water	8151A	563253
LCS 410-563253/2-A	Lab Control Sample	Total/NA	Water	8151A	563253
LCSD 410-563253/3-A	Lab Control Sample Dup	Total/NA	Water	8151A	563253

Metals

Prep Batch: 435876

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292343-1	OW-223B	Total/NA	Water	3005A	
310-292343-2	OW-223B-FD	Total/NA	Ground Water	3005A	
310-292343-3	OW-225B	Total/NA	Water	3005A	
310-292343-4	Equipment Blank-1	Total/NA	Water	3005A	
MB 310-435876/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-435876/2-A	Lab Control Sample	Total/NA	Water	3005A	

Analysis Batch: 436085

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292343-1	OW-223B	Total/NA	Water	6020B	435876
310-292343-2	OW-223B-FD	Total/NA	Ground Water	6020B	435876
310-292343-3	OW-225B	Total/NA	Water	6020B	435876
310-292343-4	Equipment Blank-1	Total/NA	Water	6020B	435876
MB 310-435876/1-A	Method Blank	Total/NA	Water	6020B	435876
LCS 310-435876/2-A	Lab Control Sample	Total/NA	Water	6020B	435876

Analysis Batch: 436228

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292343-1	OW-223B	Total/NA	Water	6020B	435876
310-292343-2	OW-223B-FD	Total/NA	Ground Water	6020B	435876
310-292343-3	OW-225B	Total/NA	Water	6020B	435876
310-292343-4	Equipment Blank-1	Total/NA	Water	6020B	435876
MB 310-435876/1-A	Method Blank	Total/NA	Water	6020B	435876
LCS 310-435876/2-A	Lab Control Sample	Total/NA	Water	6020B	435876

Prep Batch: 436310

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292343-3	OW-225B	Total/NA	Water	7470A	
MB 310-436310/1-A	Method Blank	Total/NA	Water	7470A	

Metals (Continued)

Prep Batch: 436310 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 310-436310/2-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 436502

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292343-3	OW-225B	Total/NA	Water	7470A	436310
MB 310-436310/1-A	Method Blank	Total/NA	Water	7470A	436310
LCS 310-436310/2-A	Lab Control Sample	Total/NA	Water	7470A	436310

Analysis Batch: 436544

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292343-4	Equipment Blank-1	Total/NA	Water	6020B	435876

Analysis Batch: 436697

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292343-3	OW-225B	Total/NA	Water	6020B	435876

Analysis Batch: 437173

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292343-1	OW-223B	Total/NA	Water	6020B	435876
310-292343-2	OW-223B-FD	Total/NA	Ground Water	6020B	435876
310-292343-4	Equipment Blank-1	Total/NA	Water	6020B	435876
MB 310-435876/1-A	Method Blank	Total/NA	Water	6020B	435876
LCS 310-435876/2-A	Lab Control Sample	Total/NA	Water	6020B	435876

Prep Batch: 438272

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292343-1	OW-223B	Total/NA	Water	3005A	
310-292343-2	OW-223B-FD	Total/NA	Ground Water	3005A	
310-292343-3	OW-225B	Total/NA	Water	3005A	
310-292343-4	Equipment Blank-1	Total/NA	Water	3005A	
MB 310-438272/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-438272/2-A	Lab Control Sample	Total/NA	Water	3005A	

Analysis Batch: 438660

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292343-4	Equipment Blank-1	Total/NA	Water	6020B	438272
MB 310-438272/1-A	Method Blank	Total/NA	Water	6020B	438272
LCS 310-438272/2-A	Lab Control Sample	Total/NA	Water	6020B	438272

Analysis Batch: 438774

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292343-1	OW-223B	Total/NA	Water	6020B	438272
310-292343-2	OW-223B-FD	Total/NA	Ground Water	6020B	438272
310-292343-3	OW-225B	Total/NA	Water	6020B	438272
310-292343-4	Equipment Blank-1	Total/NA	Water	6020B	438272
MB 310-438272/1-A	Method Blank	Total/NA	Water	6020B	438272
LCS 310-438272/2-A	Lab Control Sample	Total/NA	Water	6020B	438272

General Chemistry

Prep Batch: 435806

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292343-3	OW-225B	Total/NA	Water	9012B	
MB 310-435806/1-A	Method Blank	Total/NA	Water	9012B	
LCS 310-435806/2-A	Lab Control Sample	Total/NA	Water	9012B	

Analysis Batch: 435882

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292343-3	OW-225B	Total/NA	Water	9012B	435806
MB 310-435806/1-A	Method Blank	Total/NA	Water	9012B	435806
LCS 310-435806/2-A	Lab Control Sample	Total/NA	Water	9012B	435806

Analysis Batch: 435918

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292343-1	OW-223B	Total/NA	Water	I-3765-85	
310-292343-2	OW-223B-FD	Total/NA	Ground Water	I-3765-85	
310-292343-3	OW-225B	Total/NA	Water	I-3765-85	
310-292343-4	Equipment Blank-1	Total/NA	Water	I-3765-85	
MB 310-435918/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-435918/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Prep Batch: 630854

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292343-3	OW-225B	Total/NA	Water	9030B	
MB 240-630854/1-A	Method Blank	Total/NA	Water	9030B	
LCS 240-630854/2-A	Lab Control Sample	Total/NA	Water	9030B	

Analysis Batch: 630897

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292343-3	OW-225B	Total/NA	Water	9034	630854
MB 240-630854/1-A	Method Blank	Total/NA	Water	9034	630854
LCS 240-630854/2-A	Lab Control Sample	Total/NA	Water	9034	630854

Field Service / Mobile Lab

Analysis Batch: 435786

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292343-1	OW-223B	Total/NA	Water	Field Sampling	
310-292343-3	OW-225B	Total/NA	Water	Field Sampling	

Client Sample ID: OW-223B
Lab Sample ID: 310-292343-1

Date Collected: 10/08/24 14:00
Matrix: Water
Date Received: 10/09/24 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	435992	FE5V	EET CF	10/11/24 21:48
Total/NA	Prep	3005A			435876	F5MW	EET CF	10/11/24 09:30
Total/NA	Analysis	6020B		1	436228	A6US	EET CF	10/14/24 19:25
Total/NA	Prep	3005A			438272	F5MW	EET CF	11/01/24 09:30
Total/NA	Analysis	6020B		1	438774	A6US	EET CF	11/05/24 15:04
Total/NA	Prep	3005A			435876	F5MW	EET CF	10/11/24 09:30
Total/NA	Analysis	6020B		1	436085	A6US	EET CF	10/11/24 23:29
Total/NA	Prep	3005A			435876	F5MW	EET CF	10/11/24 09:30
Total/NA	Analysis	6020B		1	437173	A6US	EET CF	10/22/24 14:58
Total/NA	Analysis	I-3765-85		1	435918	HE7K	EET CF	10/11/24 08:52
Total/NA	Analysis	Field Sampling		1	435786	BJ0R	EET CF	10/08/24 14:00

Client Sample ID: OW-223B-FD
Lab Sample ID: 310-292343-2

Date Collected: 10/08/24 14:00
Matrix: Ground Water
Date Received: 10/09/24 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	435992	FE5V	EET CF	10/11/24 22:11
Total/NA	Prep	3005A			435876	F5MW	EET CF	10/11/24 09:30
Total/NA	Analysis	6020B		1	436228	A6US	EET CF	10/14/24 19:29
Total/NA	Prep	3005A			438272	F5MW	EET CF	11/01/24 09:30
Total/NA	Analysis	6020B		1	438774	A6US	EET CF	11/05/24 15:07
Total/NA	Prep	3005A			435876	F5MW	EET CF	10/11/24 09:30
Total/NA	Analysis	6020B		1	436085	A6US	EET CF	10/11/24 23:31
Total/NA	Prep	3005A			435876	F5MW	EET CF	10/11/24 09:30
Total/NA	Analysis	6020B		1	437173	A6US	EET CF	10/22/24 15:00
Total/NA	Analysis	I-3765-85		1	435918	HE7K	EET CF	10/11/24 08:52

Client Sample ID: OW-225B
Lab Sample ID: 310-292343-3

Date Collected: 10/08/24 11:00
Matrix: Water
Date Received: 10/09/24 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	435992	FE5V	EET CF	10/11/24 22:34
Total/NA	Prep	3510C			435895	AYK7	EET CF	10/11/24 06:28
Total/NA	Analysis	8270E		1	436520	L0FS	EET CF	10/17/24 15:45
Total/NA	Analysis	8015C		1	436077	V7YZ	EET CF	10/14/24 09:52
Total/NA	Prep	3511			436331	AYK7	EET CF	10/15/24 15:30
Total/NA	Analysis	8081B		1	436404	BW2O	EET CF	10/16/24 19:05
Total/NA	Prep	3511			436331	AYK7	EET CF	10/15/24 15:30
Total/NA	Analysis	8082A		1	436406	BW2O	EET CF	10/16/24 19:05
Total/NA	Prep	8151A			563253	K2IL	ELLE	10/15/24 09:09
Total/NA	Analysis	8151A		1	563637	UAMZ	ELLE	10/16/24 10:44

Client Sample ID: OW-225B
Lab Sample ID: 310-292343-3

Date Collected: 10/08/24 11:00
Matrix: Water
Date Received: 10/09/24 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			435876	F5MW	EET CF	10/11/24 09:30
Total/NA	Analysis	6020B		1	436228	A6US	EET CF	10/14/24 19:33
Total/NA	Prep	3005A			438272	F5MW	EET CF	11/01/24 09:30
Total/NA	Analysis	6020B		1	438774	A6US	EET CF	11/05/24 15:11
Total/NA	Prep	3005A			435876	F5MW	EET CF	10/11/24 09:30
Total/NA	Analysis	6020B		1	436085	A6US	EET CF	10/11/24 23:33
Total/NA	Prep	3005A			435876	F5MW	EET CF	10/11/24 09:30
Total/NA	Analysis	6020B		1	436697	NFT2	EET CF	10/17/24 15:58
Total/NA	Prep	7470A			436310	QTZ5	EET CF	10/15/24 15:55
Total/NA	Analysis	7470A		1	436502	QTZ5	EET CF	10/16/24 16:20
Total/NA	Prep	9012B			435806	ENB7	EET CF	10/10/24 10:18
Total/NA	Analysis	9012B		1	435882	ZJX4	EET CF	10/10/24 17:45
Total/NA	Prep	9030B			630854	C5SV	EET CLE	10/15/24 10:08
Total/NA	Analysis	9034		1	630897	C5SV	EET CLE	10/15/24 13:11
Total/NA	Analysis	I-3765-85		1	435918	HE7K	EET CF	10/11/24 08:52
Total/NA	Analysis	Field Sampling		1	435786	BJ0R	EET CF	10/08/24 11:00

Client Sample ID: Equipment Blank-1
Lab Sample ID: 310-292343-4

Date Collected: 10/08/24 14:30
Matrix: Water
Date Received: 10/09/24 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	435986	WSE8	EET CF	10/12/24 01:24
Total/NA	Prep	3005A			435876	F5MW	EET CF	10/11/24 09:30
Total/NA	Analysis	6020B		1	436228	A6US	EET CF	10/14/24 19:37
Total/NA	Prep	3005A			438272	F5MW	EET CF	11/01/24 09:30
Total/NA	Analysis	6020B		1	438774	A6US	EET CF	11/05/24 15:15
Total/NA	Prep	3005A			435876	F5MW	EET CF	10/11/24 09:30
Total/NA	Analysis	6020B		1	436085	A6US	EET CF	10/11/24 23:35
Total/NA	Prep	3005A			435876	F5MW	EET CF	10/11/24 09:30
Total/NA	Analysis	6020B		1	436544	A6US	EET CF	10/16/24 13:06
Total/NA	Prep	3005A			435876	F5MW	EET CF	10/11/24 09:30
Total/NA	Analysis	6020B		1	437173	A6US	EET CF	10/22/24 15:14
Total/NA	Prep	3005A			438272	F5MW	EET CF	11/01/24 09:30
Total/NA	Analysis	6020B		1	438660	NFT2	EET CF	11/04/24 19:26
Total/NA	Analysis	I-3765-85		1	435918	HE7K	EET CF	10/11/24 08:52

Client Sample ID: Trip Blank
Lab Sample ID: 310-292343-5

Date Collected: 10/08/24 00:00
Matrix: Water
Date Received: 10/09/24 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	435986	WSE8	EET CF	10/12/24 01:47

Lab Chronicle

Client: AECOM
Job ID: 310-292343-1
Project/Site: Black Hawk County Landfill (IDNR)

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: AECOM
Job ID: 310-292343-1
Project/Site: Black Hawk County Landfill (IDNR)

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8260D		Ground Water	m,p-Xylene
8260D		Ground Water	o-Xylene
8260D		Water	1,2,4-Trichlorobenzene
8260D		Water	Allyl chloride
8260D		Water	Ethyl methacrylate
8260D		Water	m,p-Xylene
8260D		Water	o-Xylene
Field Sampling		Water	Field Turbidity

Laboratory: Eurofins Cleveland

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-28-25
Connecticut	State	PH-0806	12-31-26
Georgia	State	4062	02-27-25
Illinois	NELAP	200004	08-31-25
Iowa	State	421	06-01-25
Kentucky (UST)	State	112225	02-27-25
Kentucky (WW)	State	KY98016	12-30-24
Minnesota	NELAP	039-999-348	12-31-24
New Hampshire	NELAP	225024	09-30-25
New Jersey	NELAP	OH001	07-03-25
New York	NELAP	10975	04-02-25
Ohio VAP	State	ORELAP 4062	02-27-25
Oregon	NELAP	4062	02-27-25
Pennsylvania	NELAP	68-00340	08-31-25
Texas	NELAP	T104704517-22-19	08-31-25
USDA	US Federal Programs	P330-18-00281	01-05-27
Virginia	NELAP	460175	09-14-25
West Virginia DEP	State	210	12-31-24

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Iowa	State	361	03-01-26

Method Summary

Client: AECOM
Job ID: 310-292343-1
Project/Site: Black Hawk County Landfill (IDNR)

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CF
8270E	Semivolatile Organic Compounds (GC/MS)	SW846	EET CF
8015C	Nonhalogenated Organic using GC/FID (Direct Aqueous Injection)	SW846	EET CF
8081B	Organochlorine Pesticides (GC)	SW846	EET CF
8082A	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	EET CF
8151A	Herbicides (GC)	SW846	ELLE
6020B	Metals (ICP/MS)	SW846	EET CF
7470A	Mercury (CVAA)	SW846	EET CF
9012B	Cyanide, Total andor Amenable	SW846	EET CF
9034	Sulfide, Acid soluble and Insoluble (Titrimetric)	SW846	EET CLE
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
Field Sampling	Field Sampling	EPA	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET CF
3511	Microextraction of Organic Compounds	SW846	EET CF
5030B	Purge and Trap	SW846	EET CF
7470A	Preparation, Mercury	SW846	EET CF
8151A	Extraction (Herbicides)	SW846	ELLE
9012B	Cyanide, Total and/or Amenable, Distillation	SW846	EET CF
9030B	Sulfide, Distillation (Acid Soluble and Insoluble)	SW846	EET CLE

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

eurofins | Environment Testing America

310-292343 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: AECom

City/State: CITY Vetter/100 STATE IA | Project: BHC IDNR

Receipt Information

Date/Time Received: DATE 10 9 24 TIME 0930 | Received By: JO

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ Lab Field Services ☑ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☑ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☐ Yes ☑ No *If yes:* Cooler # _____ of _____

Cooler Custody Seals Present? ☐ Yes ☑ No *If yes:* Cooler custody seals intact? ☐ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☑ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☑ Yes ☐ No *If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☑ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: [illegible] | Correction Factor (°C): 0.0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 9.6 | Corrected Temp (°C): 9.6

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:	1 LT NT	1 LT NT
Uncorrected Temp (°C):	10.1	9.2
Corrected Temp (°C):	10.1	9.2

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

Cooler Was Filled w/ Ice.

Eurofins Cedar Falls
3019 Venture Way

Cedar Falls, IA 50613
phone 319.277.2401 fax 319.277.2425

Chain of Custody Record

eurofins Environment Testing America

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other IDNR

Eurofins Environment Testing America

Client Contact	Project Manager: Chris Oelkers	Site Contact:	Date: 10-9-24	COC No
AECOM	Email Christopher Oelkers@aecom com	Lab Contact:	Carrier:	1 of 1 COCs
501 Sycamore Street, Suite 222	Tel/Fax:319-296-6878			TALS Project #
Waterloo, IA 50703	Analysis Turnaround Time			Sampler
(319) 232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(xxx) xxx-xxxx FAX	TAT if different from Below _____			Walk-in Client
Project Name Black Hawk Co IDNR	☑ 2 weeks			Lab Sampling
Site Black Hawk County Landfill	☐ 1 week			Job / SDG No
P O #	☐ 2 days ☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	Appendix I, TSS	Appendix II, TSS	2,4-D	4,4'-DDD	beta-BHC	delta BHC	Endosulfan I	Endosulfan sulfate	Endrin aldehyde	Silvex	Sulfide	Sample Specific Notes
OW-220B			G	GW		N		X		X							X		
OW-221B			G	GW		N		X											
OW-222B			G	GW		N		X											
OW-223B	10-8-24	1400	G	GW	5	N		X											Turbidity – 0.99 NTU
OW-223B-FD	10-8-24	1400	G	GW	5	N		X											
OW-224B			G	GW		N			X										
OW-225B	10-8-24	1100	G	GW	18	N			X										Turbidity – 19.72 NTU
OW-226B			G	GW		N			X										
OW-227B			G	GW		N			X										
MW-319B			G	GW		N		X											
MW-320B			G	GW		N		X											
Equipment Blank-1	10-8-24	1430	G	GW	5	N		X											

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No	Cooler Temp (°C) Obs'd._____ Corr'd._____ Therm ID No ._____			
Relinquished by: Ben Porter	Company: Aecom	Date/Time: 10-9-24	Received by:	Company:	Date/Time: 10/9/24 0930
Relinquished by:	Company:	Date/Time	Received by:	Company:	Date/Time
Relinquished by:	Company:	Date/Time	Received in Laboratory by:	Company:	Date/Time

11/6/2024

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone: 319-277-2401 Fax: 319-277-2425

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Bindert, Zach T	Carrier Tracking No(s):	COC No: 310-77187.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Zach.Bindert@et.eurofinsus.com	State of Origin: Iowa	Page: Page 1 of 1
Company: Eurofins Environment Testing North Centr		Accreditations Required (See note): State - Iowa; State Program - Iowa		Job #: 310-292343-1
Address: 180 S. Van Buren Avenue,	Due Date Requested: 10/22/2024			
City: Barberton	TAT Requested (days):			
State, Zip: OH, 44203				
Phone: 330-497-9396(Tel) 330-497-0772(Fax)	PO #:			
Email:	WO #:			
Project Name: Black Hawk County Co. (IDNR)	Project #: 31017149			
Site: 310 - Black Hawk County (IDNR)	SSOW#:			

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9034_Calc/9030B Sulfide	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
OW-225B (310-292343-3)	10/8/24	11:00 Central	G	Water			X	1	

Preservation Codes: -
Other:

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing North Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing North Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing North Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing North Central, LLC.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		10/9/24 1505			10/10/24 930	Euro
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Eurofins – Cleveland Sample Receipt Form/Narrative Login # :
Barberton Facility

Client Imerys IA Site Name

Cooler unpacked by: TF

Cooler Received on 10/10/24 Opened on 10/10/24

FedEx: 1st Grd (Exp) UPS FAS Waypoint Client Drop Off Eurofins Courier Other

Receipt After-hours Drop-off Date/Time Storage Location

Eurofins Cooler # EE Foam Box Client Cooler Box Other

Packing material used. Bubble Wrap Foam Plastic Bag (None) Other

COOLANT: (Wet Ice) Blue Ice Dry Ice Water None

1 Cooler temperature upon receipt ☐ See Multiple Cooler Form

IR GUN # 17 (CF +0.1 °C) Observed Cooler Temp. 1.3 °C Corrected Cooler Temp. 1.4 °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity	Yes	(No)
-Were the seals on the outside of the cooler(s) signed & dated?	Yes No	(NA)
-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)?	Yes	(No)
-Were tamper/custody seals intact and uncompromised?	Yes No	(NA)
3 Shippers' packing slip attached to the cooler(s)?	(Yes)	No
4. Did custody papers accompany the sample(s)?	(Yes)	No
5 Were the custody papers relinquished & signed in the appropriate place?	(Yes)	No
6 Was/were the person(s) who collected the samples clearly identified on the COC?	Yes	(No)
7 Did all bottles arrive in good condition (Unbroken)?	(Yes)	No
8 Could all bottle labels (ID/Date/Time) be reconciled with the COC?	(Yes)	No
9 For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp(Y/N)?		
10 Were correct bottle(s) used for the test(s) indicated?	(Yes)	No
11 Sufficient quantity received to perform indicated analyses?	(Yes)	No
12. Are these work share samples and all listed on the COC?	(Yes)	No
If yes, Questions 13-17 have been checked at the originating laboratory		
13 Were all preserved sample(s) at the correct pH upon receipt?	Yes No NA	pH Strip Lot# HC447997
14. Were VOAs on the COC?	Yes	No
15 Were air bubbles >6 mm in any VOA vials? ● ← Larger than this.	Yes No NA	
16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot #	Yes	No
17 Was a LL Hg or Me Hg trip blank present?	Yes	No

Tests that are not checked for pH by Receiving:
VOAs
Oil and Grease
TOC

Contacted PM Date by via Verbal Voice Mail Other

Concerning

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES ☐ additional next page

Samples processed by:

19. SAMPLE CONDITION

Sample(s) were received after the recommended holding time had expired.
Sample(s) were received in a broken container
Sample(s) were received with bubble >6 mm in diameter (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) were further preserved in the laboratory
Time preserved. Preservative(s) added/Lot number(s)

VOA Sample Preservation - Date/Time VOAs Frozen.

Part # 159469-434 MTW EXP 09/25

ORIGIN ID ALOA (319) 277-2401
SAMPLE RECEIVING
EUROPINS TESTAMERICA
3019 VENTURE WAY

CEDAR FALLS, IA 50613
UNITED STATES US

SHIP DATE 09OCT24
ACTWGT 19.95 LB
CAD 0870970/CAFE3855

BILL SENDER

TO SHIPPING/RECEIVING
EUROFINS ENVIRONMENT TESTING NORTH
180 S. VAN BUREN AVENUE

BARBERTON OH 44203
(330) 497-9396
REF S310-99193

589C2/B264/FE2D

FedEx Express

E

J243024079401

THU - 10 OCT 10:30A
PRIORITY OVERNIGHT

TRK# 0201 4085 8612 8316

XS CAKA

44203
OH-US CLE

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone: 319-277-2401 Fax: 319-277-2425

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Bindert, Zach T	Carrier Tracking No(s):	COC No: 310-77185.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Zach.Bindert@et.eurofinsus.com	State of Origin: Iowa	Page: Page 1 of 1
Company: Eurofins Lancaster Laboratories Environm		Accreditations Required (See note): State - Iowa; State Program - Iowa		Job #: 310-292343-1
Address: 2425 New Holland Pike, ,	Due Date Requested: 10/22/2024	Analysis Requested		Preservation Codes: -
City: Lancaster	TAT Requested (days):			
State, Zip: PA, 17601				
Phone: 717-656-2300(Tel)	PO #:			
Email:	WO #:			
Project Name: Black Hawk County Co. (IDNR)	Project #: 31017149			
Site: 310 - Black Hawk County (IDNR)	SSOW#:			Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	B151A/8151A_AP Default List	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
OW-225B (310-292343-3)	10/8/24	11:00 Central	G	Water			X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing North Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing North Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing North Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing North Central, LLC.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	10/9/24 1445				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by: Debra A. Byrn	Date/Time: 10-10-24 09:50	Company ECLC

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: R: 2.0° C: 1.8

HH

Ver: 05/06/2024

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-292343-1

Login Number: 292343

List Source: Eurofins Cedar Falls

List Number: 1

Creator: Homolar, Dana J

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	False	Cooler temperature outside required temperature criteria.
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-292343-1

Login Number: 292343
List Number: 2
Creator: Arroyo, Haley

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC
List Creation: 10/10/24 11:37 AM

Question	Answer	Comment
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature acceptable,where thermal pres is required(</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV:Container Temp acceptable,where thermal pres is required (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
Sample custody seals are intact.	N/A	
VOA sample vials do not have headspace >6mm in diameter (none, if from WV)?	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Chris Oelkers
AECOM
501 Sycamore Street
Suite #222
Waterloo, Iowa 50703

Generated 11/7/2024 10:34:07 AM

JOB DESCRIPTION

Black Hawk County Landfill (IDNR)
Fall 2024

JOB NUMBER

310-293587-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



Generated
11/7/2024 10:34:07 AM

Authorized for release by
Zach Bindert, Senior Project Manager
Zach.Bindert@et.eurofinsus.com
(319)595-2016

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Job ID: 310-293587-1 — Eurofins Cedar Falls

Job Narrative
310-293587-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 10/24/2024 11:15 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.9°C.

GC/MS VOA
Method 8260D: The method requirement for no headspace was not met. The following volatile sample was analyzed with headspace in the sample container: Trip Blank (310-293587-4).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Field Service / Mobile Lab
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Sample Summary

Client: AECOM
Job ID: 310-293587-1
Project/Site: Black Hawk County Landfill (IDNR)

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-293587-1	MW-709B	Water	10/23/24 10:15	10/24/24 11:15
310-293587-2	MW-710B	Water	10/23/24 11:00	10/24/24 11:15
310-293587-3	MW-711B	Water	10/23/24 14:00	10/24/24 11:15
310-293587-4	Trip Blank	Water	10/23/24 00:00	10/24/24 11:15

Detection Summary

Client: AECOM
Job ID: 310-293587-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: MW-709B — Lab Sample ID: 310-293587-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	79.9		2.00	0.660	ug/L	1		6020B	Total/NA
Cobalt	0.586		0.500	0.170	ug/L	1		6020B	Total/NA
Lead	0.345	J	0.500	0.260	ug/L	1		6020B	Total/NA
Nickel	2.19	J	5.00	2.10	ug/L	1		6020B	Total/NA
Vanadium	1.28	J	5.00	1.10	ug/L	1		6020B	Total/NA
Total Suspended Solids	31.3		1.88	1.39	mg/L	1		I-3765-85	Total/NA
Field Turbidity	38.23				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-710B — Lab Sample ID: 310-293587-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	57.5		2.00	0.660	ug/L	1		6020B	Total/NA
Total Suspended Solids	8.00		1.88	1.39	mg/L	1		I-3765-85	Total/NA
Field Turbidity	9.28				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-711B — Lab Sample ID: 310-293587-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	1.80	J	2.00	0.530	ug/L	1		6020B	Total/NA
Barium	40.3		2.00	0.660	ug/L	1		6020B	Total/NA
Cobalt	3.77		0.500	0.170	ug/L	1		6020B	Total/NA
Nickel	14.7		5.00	2.10	ug/L	1		6020B	Total/NA
Total Suspended Solids	14.0		1.88	1.39	mg/L	1		I-3765-85	Total/NA
Field Turbidity	23.97				NTU	1		Field Sampling	Total/NA

Client Sample ID: Trip Blank — Lab Sample ID: 310-293587-4

No Detections.

This Detection Summary does not include radiochemical test results.

Client: AECOM
Job ID: 310-293587-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: MW-709B
Lab Sample ID: 310-293587-1
Date Collected: 10/23/24 10:15
Matrix: Water
Date Received: 10/24/24 11:15

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			10/25/24 22:12	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			10/25/24 22:12	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			10/25/24 22:12	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			10/25/24 22:12	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			10/25/24 22:12	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			10/25/24 22:12	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			10/25/24 22:12	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			10/25/24 22:12	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			10/25/24 22:12	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			10/25/24 22:12	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			10/25/24 22:12	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			10/25/24 22:12	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			10/25/24 22:12	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			10/25/24 22:12	1
2-Hexanone	<2.00		10.0	2.00	ug/L			10/25/24 22:12	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			10/25/24 22:12	1
Acetone	<3.10		10.0	3.10	ug/L			10/25/24 22:12	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			10/25/24 22:12	1
Benzene	<0.220		0.500	0.220	ug/L			10/25/24 22:12	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			10/25/24 22:12	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			10/25/24 22:12	1
Bromoform	<0.780		5.00	0.780	ug/L			10/25/24 22:12	1
Bromomethane	<1.10		4.00	1.10	ug/L			10/25/24 22:12	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			10/25/24 22:12	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			10/25/24 22:12	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			10/25/24 22:12	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			10/25/24 22:12	1
Chloroethane	<0.790		4.00	0.790	ug/L			10/25/24 22:12	1
Chloroform	<1.30		3.00	1.30	ug/L			10/25/24 22:12	1
Chloromethane	<0.610		3.00	0.610	ug/L			10/25/24 22:12	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			10/25/24 22:12	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			10/25/24 22:12	1
Dibromomethane	<0.330		1.00	0.330	ug/L			10/25/24 22:12	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			10/25/24 22:12	1
Iodomethane	<7.00		10.0	7.00	ug/L			10/25/24 22:12	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			10/25/24 22:12	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			10/25/24 22:12	1
o-Xylene	<0.400		1.00	0.400	ug/L			10/25/24 22:12	1
Styrene	<0.370		1.00	0.370	ug/L			10/25/24 22:12	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			10/25/24 22:12	1
Toluene	<0.430		1.00	0.430	ug/L			10/25/24 22:12	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			10/25/24 22:12	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			10/25/24 22:12	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			10/25/24 22:12	1
Trichloroethene	<0.430		1.00	0.430	ug/L			10/25/24 22:12	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			10/25/24 22:12	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			10/25/24 22:12	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			10/25/24 22:12	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			10/25/24 22:12	1

Client: AECOM
Job ID: 310-293587-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: MW-709B
Lab Sample ID: 310-293587-1
Date Collected: 10/23/24 10:15
Matrix: Water
Date Received: 10/24/24 11:15

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*115*		*73 - 130*		*10/25/24 22:12*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*10/25/24 22:12*	*1*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*		*10/25/24 22:12*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		11/01/24 09:30	11/05/24 18:25	1
Arsenic	<0.530		2.00	0.530	ug/L		11/01/24 09:30	11/05/24 18:25	1
Barium	**79.9**		2.00	0.660	ug/L		11/01/24 09:30	11/05/24 18:25	1
Beryllium	<0.330		1.00	0.330	ug/L		11/01/24 09:30	11/05/24 18:25	1
Cadmium	<0.100		0.200	0.100	ug/L		11/01/24 09:30	11/05/24 18:25	1
Chromium	<1.20		5.00	1.20	ug/L		11/01/24 09:30	11/05/24 18:25	1
Cobalt	**0.586**		0.500	0.170	ug/L		11/01/24 09:30	11/05/24 18:25	1
Copper	<1.80		5.00	1.80	ug/L		11/01/24 09:30	11/06/24 14:43	1
Lead	**0.345**	**J**	0.500	0.260	ug/L		11/01/24 09:30	11/05/24 18:25	1
Nickel	**2.19**	**J**	5.00	2.10	ug/L		11/01/24 09:30	11/05/24 18:25	1
Selenium	<1.40		5.00	1.40	ug/L		11/01/24 09:30	11/05/24 18:25	1
Silver	<0.500		1.00	0.500	ug/L		11/01/24 09:30	11/05/24 18:25	1
Thallium	<0.570		1.00	0.570	ug/L		11/01/24 09:30	11/05/24 18:25	1
Vanadium	**1.28**	**J**	5.00	1.10	ug/L		11/01/24 09:30	11/05/24 18:25	1
Zinc	<9.70		20.0	9.70	ug/L		11/01/24 09:30	11/05/24 18:25	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**31.3**		1.88	1.39	mg/L			10/29/24 10:35	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**38.23**				NTU			10/23/24 10:15	1

Client: AECOM
Job ID: 310-293587-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: MW-710B
Lab Sample ID: 310-293587-2
Date Collected: 10/23/24 11:00
Matrix: Water
Date Received: 10/24/24 11:15

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			10/25/24 22:34	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			10/25/24 22:34	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			10/25/24 22:34	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			10/25/24 22:34	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			10/25/24 22:34	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			10/25/24 22:34	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			10/25/24 22:34	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			10/25/24 22:34	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			10/25/24 22:34	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			10/25/24 22:34	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			10/25/24 22:34	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			10/25/24 22:34	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			10/25/24 22:34	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			10/25/24 22:34	1
2-Hexanone	<2.00		10.0	2.00	ug/L			10/25/24 22:34	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			10/25/24 22:34	1
Acetone	<3.10		10.0	3.10	ug/L			10/25/24 22:34	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			10/25/24 22:34	1
Benzene	<0.220		0.500	0.220	ug/L			10/25/24 22:34	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			10/25/24 22:34	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			10/25/24 22:34	1
Bromoform	<0.780		5.00	0.780	ug/L			10/25/24 22:34	1
Bromomethane	<1.10		4.00	1.10	ug/L			10/25/24 22:34	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			10/25/24 22:34	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			10/25/24 22:34	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			10/25/24 22:34	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			10/25/24 22:34	1
Chloroethane	<0.790		4.00	0.790	ug/L			10/25/24 22:34	1
Chloroform	<1.30		3.00	1.30	ug/L			10/25/24 22:34	1
Chloromethane	<0.610		3.00	0.610	ug/L			10/25/24 22:34	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			10/25/24 22:34	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			10/25/24 22:34	1
Dibromomethane	<0.330		1.00	0.330	ug/L			10/25/24 22:34	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			10/25/24 22:34	1
Iodomethane	<7.00		10.0	7.00	ug/L			10/25/24 22:34	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			10/25/24 22:34	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			10/25/24 22:34	1
o-Xylene	<0.400		1.00	0.400	ug/L			10/25/24 22:34	1
Styrene	<0.370		1.00	0.370	ug/L			10/25/24 22:34	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			10/25/24 22:34	1
Toluene	<0.430		1.00	0.430	ug/L			10/25/24 22:34	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			10/25/24 22:34	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			10/25/24 22:34	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			10/25/24 22:34	1
Trichloroethene	<0.430		1.00	0.430	ug/L			10/25/24 22:34	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			10/25/24 22:34	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			10/25/24 22:34	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			10/25/24 22:34	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			10/25/24 22:34	1

Client: AECOM
Job ID: 310-293587-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: MW-710B
Lab Sample ID: 310-293587-2
Date Collected: 10/23/24 11:00
Matrix: Water
Date Received: 10/24/24 11:15

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*111*		*73 - 130*		*10/25/24 22:34*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*10/25/24 22:34*	*1*
4-Bromofluorobenzene (Surr)	*107*		*80 - 120*		*10/25/24 22:34*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		11/01/24 09:30	11/05/24 18:38	1
Arsenic	<0.530		2.00	0.530	ug/L		11/01/24 09:30	11/05/24 18:38	1
Barium	**57.5**		2.00	0.660	ug/L		11/01/24 09:30	11/05/24 18:38	1
Beryllium	<0.330		1.00	0.330	ug/L		11/01/24 09:30	11/05/24 18:38	1
Cadmium	<0.100		0.200	0.100	ug/L		11/01/24 09:30	11/05/24 18:38	1
Chromium	<1.20		5.00	1.20	ug/L		11/01/24 09:30	11/05/24 18:38	1
Cobalt	<0.170		0.500	0.170	ug/L		11/01/24 09:30	11/05/24 18:38	1
Copper	<1.80		5.00	1.80	ug/L		11/01/24 09:30	11/06/24 15:05	1
Lead	<0.260		0.500	0.260	ug/L		11/01/24 09:30	11/05/24 18:38	1
Nickel	<2.10		5.00	2.10	ug/L		11/01/24 09:30	11/05/24 18:38	1
Selenium	<1.40		5.00	1.40	ug/L		11/01/24 09:30	11/05/24 18:38	1
Silver	<0.500		1.00	0.500	ug/L		11/01/24 09:30	11/05/24 18:38	1
Thallium	<0.570		1.00	0.570	ug/L		11/01/24 09:30	11/05/24 18:38	1
Vanadium	<1.10		5.00	1.10	ug/L		11/01/24 09:30	11/05/24 18:38	1
Zinc	<9.70		20.0	9.70	ug/L		11/01/24 09:30	11/05/24 18:38	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**8.00**		1.88	1.39	mg/L			10/29/24 10:35	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**9.28**				NTU			10/23/24 11:00	1

Client: AECOM
Job ID: 310-293587-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: MW-711B
Lab Sample ID: 310-293587-3
Date Collected: 10/23/24 14:00
Matrix: Water
Date Received: 10/24/24 11:15

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			10/25/24 22:56	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			10/25/24 22:56	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			10/25/24 22:56	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			10/25/24 22:56	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			10/25/24 22:56	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			10/25/24 22:56	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			10/25/24 22:56	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			10/25/24 22:56	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			10/25/24 22:56	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			10/25/24 22:56	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			10/25/24 22:56	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			10/25/24 22:56	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			10/25/24 22:56	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			10/25/24 22:56	1
2-Hexanone	<2.00		10.0	2.00	ug/L			10/25/24 22:56	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			10/25/24 22:56	1
Acetone	<3.10		10.0	3.10	ug/L			10/25/24 22:56	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			10/25/24 22:56	1
Benzene	<0.220		0.500	0.220	ug/L			10/25/24 22:56	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			10/25/24 22:56	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			10/25/24 22:56	1
Bromoform	<0.780		5.00	0.780	ug/L			10/25/24 22:56	1
Bromomethane	<1.10		4.00	1.10	ug/L			10/25/24 22:56	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			10/25/24 22:56	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			10/25/24 22:56	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			10/25/24 22:56	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			10/25/24 22:56	1
Chloroethane	<0.790		4.00	0.790	ug/L			10/25/24 22:56	1
Chloroform	<1.30		3.00	1.30	ug/L			10/25/24 22:56	1
Chloromethane	<0.610		3.00	0.610	ug/L			10/25/24 22:56	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			10/25/24 22:56	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			10/25/24 22:56	1
Dibromomethane	<0.330		1.00	0.330	ug/L			10/25/24 22:56	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			10/25/24 22:56	1
Iodomethane	<7.00		10.0	7.00	ug/L			10/25/24 22:56	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			10/25/24 22:56	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			10/25/24 22:56	1
o-Xylene	<0.400		1.00	0.400	ug/L			10/25/24 22:56	1
Styrene	<0.370		1.00	0.370	ug/L			10/25/24 22:56	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			10/25/24 22:56	1
Toluene	<0.430		1.00	0.430	ug/L			10/25/24 22:56	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			10/25/24 22:56	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			10/25/24 22:56	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			10/25/24 22:56	1
Trichloroethene	<0.430		1.00	0.430	ug/L			10/25/24 22:56	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			10/25/24 22:56	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			10/25/24 22:56	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			10/25/24 22:56	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			10/25/24 22:56	1

Client: AECOM
Job ID: 310-293587-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: MW-711B
Lab Sample ID: 310-293587-3
Date Collected: 10/23/24 14:00
Matrix: Water
Date Received: 10/24/24 11:15

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*110*		*73 - 130*		*10/25/24 22:56*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*10/25/24 22:56*	*1*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*		*10/25/24 22:56*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		11/01/24 09:30	11/05/24 18:40	1
Arsenic	**1.80**	**J**	2.00	0.530	ug/L		11/01/24 09:30	11/05/24 18:40	1
Barium	**40.3**		2.00	0.660	ug/L		11/01/24 09:30	11/05/24 18:40	1
Beryllium	<0.330		1.00	0.330	ug/L		11/01/24 09:30	11/05/24 18:40	1
Cadmium	<0.100		0.200	0.100	ug/L		11/01/24 09:30	11/05/24 18:40	1
Chromium	<1.20		5.00	1.20	ug/L		11/01/24 09:30	11/05/24 18:40	1
Cobalt	**3.77**		0.500	0.170	ug/L		11/01/24 09:30	11/05/24 18:40	1
Copper	<1.80		5.00	1.80	ug/L		11/01/24 09:30	11/06/24 15:09	1
Lead	<0.260		0.500	0.260	ug/L		11/01/24 09:30	11/05/24 18:40	1
Nickel	**14.7**		5.00	2.10	ug/L		11/01/24 09:30	11/05/24 18:40	1
Selenium	<1.40		5.00	1.40	ug/L		11/01/24 09:30	11/05/24 18:40	1
Silver	<0.500		1.00	0.500	ug/L		11/01/24 09:30	11/05/24 18:40	1
Thallium	<0.570		1.00	0.570	ug/L		11/01/24 09:30	11/05/24 18:40	1
Vanadium	<1.10		5.00	1.10	ug/L		11/01/24 09:30	11/05/24 18:40	1
Zinc	<9.70		20.0	9.70	ug/L		11/01/24 09:30	11/05/24 18:40	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**14.0**		1.88	1.39	mg/L			10/29/24 11:24	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**23.97**				NTU			10/23/24 14:00	1

Client: AECOM
Job ID: 310-293587-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Trip Blank
Lab Sample ID: 310-293587-4
Date Collected: 10/23/24 00:00
Matrix: Water
Date Received: 10/24/24 11:15

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			10/25/24 16:47	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			10/25/24 16:47	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			10/25/24 16:47	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			10/25/24 16:47	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			10/25/24 16:47	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			10/25/24 16:47	1
1,1-Dichloropropene	<0.430		1.00	0.430	ug/L			10/25/24 16:47	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			10/25/24 16:47	1
1,2,4-Trichlorobenzene	<0.750		5.00	0.750	ug/L			10/25/24 16:47	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			10/25/24 16:47	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			10/25/24 16:47	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			10/25/24 16:47	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			10/25/24 16:47	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			10/25/24 16:47	1
1,3-Dichlorobenzene	<0.300		1.00	0.300	ug/L			10/25/24 16:47	1
1,3-Dichloropropane	<0.400		1.00	0.400	ug/L			10/25/24 16:47	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			10/25/24 16:47	1
2,2-Dichloropropane	<0.690		4.00	0.690	ug/L			10/25/24 16:47	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			10/25/24 16:47	1
2-Hexanone	<2.00		10.0	2.00	ug/L			10/25/24 16:47	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			10/25/24 16:47	1
Acetone	<3.10		10.0	3.10	ug/L			10/25/24 16:47	1
Acrolein	<3.60		10.0	3.60	ug/L			10/25/24 16:47	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			10/25/24 16:47	1
Allyl chloride	<0.700		2.00	0.700	ug/L			10/25/24 16:47	1
Benzene	<0.220		0.500	0.220	ug/L			10/25/24 16:47	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			10/25/24 16:47	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			10/25/24 16:47	1
Bromoform	<0.780		5.00	0.780	ug/L			10/25/24 16:47	1
Bromomethane	<1.10		4.00	1.10	ug/L			10/25/24 16:47	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			10/25/24 16:47	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			10/25/24 16:47	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			10/25/24 16:47	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			10/25/24 16:47	1
Chloroethane	<0.790		4.00	0.790	ug/L			10/25/24 16:47	1
Chloroform	<1.30		3.00	1.30	ug/L			10/25/24 16:47	1
Chloromethane	<0.610		3.00	0.610	ug/L			10/25/24 16:47	1
Chloroprene	<0.230		1.00	0.230	ug/L			10/25/24 16:47	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			10/25/24 16:47	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			10/25/24 16:47	1
Dibromomethane	<0.330		1.00	0.330	ug/L			10/25/24 16:47	1
Dichlorodifluoromethane	<0.250		3.00	0.250	ug/L			10/25/24 16:47	1
Ethyl methacrylate	<0.680		2.00	0.680	ug/L			10/25/24 16:47	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			10/25/24 16:47	1
Iodomethane	<7.00		10.0	7.00	ug/L			10/25/24 16:47	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			10/25/24 16:47	1
Methacrylonitrile	<3.30		10.0	3.30	ug/L			10/25/24 16:47	1
Methyl methacrylate	<0.760		2.00	0.760	ug/L			10/25/24 16:47	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			10/25/24 16:47	1

Client: AECOM
Job ID: 310-293587-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Trip Blank
Lab Sample ID: 310-293587-4
Date Collected: 10/23/24 00:00
Matrix: Water
Date Received: 10/24/24 11:15

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<3.00		5.00	3.00	ug/L			10/25/24 16:47	1
o-Xylene	<0.400		1.00	0.400	ug/L			10/25/24 16:47	1
Propionitrile	<3.40		10.0	3.40	ug/L			10/25/24 16:47	1
Styrene	<0.370		1.00	0.370	ug/L			10/25/24 16:47	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			10/25/24 16:47	1
Toluene	<0.430		1.00	0.430	ug/L			10/25/24 16:47	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			10/25/24 16:47	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			10/25/24 16:47	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			10/25/24 16:47	1
Trichloroethene	<0.430		1.00	0.430	ug/L			10/25/24 16:47	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			10/25/24 16:47	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			10/25/24 16:47	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			10/25/24 16:47	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			10/25/24 16:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*111*		*73 - 130*		*10/25/24 16:47*	*1*
Toluene-d8 (Surr)	*94*		*80 - 120*		*10/25/24 16:47*	*1*
4-Bromofluorobenzene (Surr)	*105*		*80 - 120*		*10/25/24 16:47*	*1*

Definitions/Glossary

Client: AECOM
Job ID: 310-293587-1
Project/Site: Black Hawk County Landfill (IDNR)

Qualifiers

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Surrogate Summary

Client: AECOM
Job ID: 310-293587-1
Project/Site: Black Hawk County Landfill (IDNR)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)							
		DBFM	TOL	BFB					
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)					
310-293587-1	MW-709B	115	98	104					
310-293587-2	MW-710B	111	97	107					
310-293587-3	MW-711B	110	98	104					
310-293587-4	Trip Blank	111	94	105					
LCS 310-437539/6	Lab Control Sample	100	98	103					
LCS 310-437539/7	Lab Control Sample	112	95	105					
MB 310-437539/5	Method Blank	113	98	103					

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 310-437539/5
Matrix: Water
Analysis Batch: 437539

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			10/25/24 15:20	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			10/25/24 15:20	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			10/25/24 15:20	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			10/25/24 15:20	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			10/25/24 15:20	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			10/25/24 15:20	1
1,1-Dichloropropene	<0.430		1.00	0.430	ug/L			10/25/24 15:20	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			10/25/24 15:20	1
1,2,4-Trichlorobenzene	<0.750		5.00	0.750	ug/L			10/25/24 15:20	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			10/25/24 15:20	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			10/25/24 15:20	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			10/25/24 15:20	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			10/25/24 15:20	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			10/25/24 15:20	1
1,3-Dichlorobenzene	<0.300		1.00	0.300	ug/L			10/25/24 15:20	1
1,3-Dichloropropane	<0.400		1.00	0.400	ug/L			10/25/24 15:20	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			10/25/24 15:20	1
2,2-Dichloropropane	<0.690		4.00	0.690	ug/L			10/25/24 15:20	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			10/25/24 15:20	1
2-Hexanone	<2.00		10.0	2.00	ug/L			10/25/24 15:20	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			10/25/24 15:20	1
Acetone	<3.10		10.0	3.10	ug/L			10/25/24 15:20	1
Acrolein	<3.60		10.0	3.60	ug/L			10/25/24 15:20	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			10/25/24 15:20	1
Allyl chloride	<0.700		2.00	0.700	ug/L			10/25/24 15:20	1
Benzene	<0.220		0.500	0.220	ug/L			10/25/24 15:20	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			10/25/24 15:20	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			10/25/24 15:20	1
Bromoform	<0.780		5.00	0.780	ug/L			10/25/24 15:20	1
Bromomethane	<1.10		4.00	1.10	ug/L			10/25/24 15:20	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			10/25/24 15:20	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			10/25/24 15:20	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			10/25/24 15:20	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			10/25/24 15:20	1
Chloroethane	<0.790		4.00	0.790	ug/L			10/25/24 15:20	1
Chloroform	<1.30		3.00	1.30	ug/L			10/25/24 15:20	1
Chloromethane	<0.610		3.00	0.610	ug/L			10/25/24 15:20	1
Chloroprene	<0.230		1.00	0.230	ug/L			10/25/24 15:20	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			10/25/24 15:20	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			10/25/24 15:20	1
Dibromomethane	<0.330		1.00	0.330	ug/L			10/25/24 15:20	1
Dichlorodifluoromethane	<0.250		3.00	0.250	ug/L			10/25/24 15:20	1
Ethyl methacrylate	<0.680		2.00	0.680	ug/L			10/25/24 15:20	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			10/25/24 15:20	1
Iodomethane	<7.00		10.0	7.00	ug/L			10/25/24 15:20	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			10/25/24 15:20	1
Methacrylonitrile	<3.30		10.0	3.30	ug/L			10/25/24 15:20	1
Methyl methacrylate	<0.760		2.00	0.760	ug/L			10/25/24 15:20	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-437539/5
Matrix: Water
Analysis Batch: 437539

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylene Chloride	<1.70		5.00	1.70	ug/L			10/25/24 15:20	1
Naphthalene	<3.00		5.00	3.00	ug/L			10/25/24 15:20	1
o-Xylene	<0.400		1.00	0.400	ug/L			10/25/24 15:20	1
Propionitrile	<3.40		10.0	3.40	ug/L			10/25/24 15:20	1
Styrene	<0.370		1.00	0.370	ug/L			10/25/24 15:20	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			10/25/24 15:20	1
Toluene	<0.430		1.00	0.430	ug/L			10/25/24 15:20	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			10/25/24 15:20	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			10/25/24 15:20	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			10/25/24 15:20	1
Trichloroethene	<0.430		1.00	0.430	ug/L			10/25/24 15:20	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			10/25/24 15:20	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			10/25/24 15:20	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			10/25/24 15:20	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			10/25/24 15:20	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*113*		*73 - 130*		*10/25/24 15:20*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*10/25/24 15:20*	*1*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*		*10/25/24 15:20*	*1*

Lab Sample ID: LCS 310-437539/6
Matrix: Water
Analysis Batch: 437539

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	20.0	17.09		ug/L		85	71 - 120
1,1,1-Trichloroethane	20.0	18.73		ug/L		94	73 - 129
1,1,2,2-Tetrachloroethane	20.0	17.43		ug/L		87	68 - 124
1,1,2-Trichloroethane	20.0	18.62		ug/L		93	73 - 123
1,1-Dichloroethane	20.0	17.61		ug/L		88	70 - 127
1,1-Dichloroethene	20.0	18.24		ug/L		91	63 - 132
1,1-Dichloropropene	20.0	19.10		ug/L		95	69 - 132
1,2,3-Trichloropropane	20.0	17.78		ug/L		89	65 - 127
1,2,4-Trichlorobenzene	20.0	18.28		ug/L		91	68 - 124
1,2-Dibromo-3-Chloropropane	20.0	17.52		ug/L		88	50 - 150
1,2-Dibromoethane (EDB)	20.0	18.16		ug/L		91	75 - 125
1,2-Dichlorobenzene	20.0	17.52		ug/L		88	74 - 120
1,2-Dichloroethane	20.0	18.42		ug/L		92	71 - 125
1,2-Dichloropropane	20.0	19.06		ug/L		95	73 - 124
1,3-Dichlorobenzene	20.0	17.18		ug/L		86	72 - 120
1,3-Dichloropropane	20.0	19.03		ug/L		95	72 - 125
1,4-Dichlorobenzene	20.0	16.99		ug/L		85	72 - 120
2,2-Dichloropropane	20.0	16.32		ug/L		82	50 - 150
2-Butanone (MEK)	40.0	32.46		ug/L		81	50 - 150
2-Hexanone	40.0	38.76		ug/L		97	60 - 140
4-Methyl-2-pentanone (MIBK)	40.0	37.85		ug/L		95	60 - 139
Acetone	40.0	32.15		ug/L		80	50 - 150

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-437539/6
Matrix: Water
Analysis Batch: 437539

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Acrolein			95.5	83.25		ug/L		87	49 - 150		
Acrylonitrile			200	179.7		ug/L		90	50 - 150		
Allyl chloride			20.0	18.50		ug/L		93	49 - 150		
Benzene			20.0	18.30		ug/L		92	72 - 124		
Bromochloromethane			20.0	18.01		ug/L		90	73 - 130		
Bromodichloromethane			20.0	18.28		ug/L		91	74 - 122		
Bromoform			20.0	18.28		ug/L		91	61 - 122		
Carbon disulfide			20.0	16.82		ug/L		84	59 - 135		
Carbon tetrachloride			20.0	18.77		ug/L		94	67 - 132		
Chlorobenzene			20.0	17.61		ug/L		88	76 - 120		
Chlorodibromomethane			20.0	18.41		ug/L		92	71 - 121		
Chloroform			20.0	18.17		ug/L		91	72 - 125		
Chloroprene			20.0	17.59		ug/L		88	69 - 133		
cis-1,2-Dichloroethene			20.0	17.55		ug/L		88	74 - 123		
cis-1,3-Dichloropropene			20.0	18.34		ug/L		92	71 - 125		
Dibromomethane			20.0	19.11		ug/L		96	74 - 125		
Ethyl methacrylate			20.0	19.56		ug/L		98	70 - 129		
Ethylbenzene			20.0	17.63		ug/L		88	74 - 122		
Iodomethane			20.0	11.94		ug/L		60	10 - 150		
Methacrylonitrile			200	179.1		ug/L		90	69 - 129		
Methyl methacrylate			40.0	37.03		ug/L		93	68 - 131		
Methylene Chloride			20.0	18.94		ug/L		95	50 - 150		
Naphthalene			20.0	18.30		ug/L		92	50 - 150		
Propionitrile			200	183.7		ug/L		92	63 - 135		
Styrene			20.0	17.51		ug/L		88	74 - 121		
Tetrachloroethene			20.0	18.08		ug/L		90	71 - 130		
Toluene			20.0	17.61		ug/L		88	74 - 123		
trans-1,2-Dichloroethene			20.0	17.23		ug/L		86	70 - 126		
trans-1,3-Dichloropropene			20.0	15.66		ug/L		78	69 - 123		
trans-1,4-Dichloro-2-butene			20.0	15.90		ug/L		80	50 - 150		
Trichloroethene			20.0	18.65		ug/L		93	72 - 126		
Vinyl acetate			40.0	31.84		ug/L		80	50 - 150		
Xylenes, Total			40.0	34.79		ug/L		87	73 - 123		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*100*		*73 - 130*
Toluene-d8 (Surr)	*98*		*80 - 120*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*

Lab Sample ID: LCS 310-437539/7
Matrix: Water
Analysis Batch: 437539

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Bromomethane			20.0	16.06		ug/L		80	23 - 150		
Chloroethane			20.0	18.35		ug/L		92	54 - 136		
Chloromethane			20.0	18.73		ug/L		94	38 - 150		
Dichlorodifluoromethane			20.0	19.09		ug/L		95	39 - 150		

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-437539/7
Matrix: Water
Analysis Batch: 437539

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Trichlorofluoromethane	20.0	20.43		ug/L		102	54 - 149
Vinyl chloride	20.0	19.53		ug/L		98	56 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*112*		*73 - 130*
Toluene-d8 (Surr)	*95*		*80 - 120*
4-Bromofluorobenzene (Surr)	*105*		*80 - 120*

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-438275/1-A
Matrix: Water
Analysis Batch: 438812

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 438275

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		11/01/24 09:30	11/05/24 17:44	1
Arsenic	<0.530		2.00	0.530	ug/L		11/01/24 09:30	11/05/24 17:44	1
Barium	<0.660		2.00	0.660	ug/L		11/01/24 09:30	11/05/24 17:44	1
Beryllium	<0.330		1.00	0.330	ug/L		11/01/24 09:30	11/05/24 17:44	1
Cadmium	<0.100		0.200	0.100	ug/L		11/01/24 09:30	11/05/24 17:44	1
Chromium	<1.20		5.00	1.20	ug/L		11/01/24 09:30	11/05/24 17:44	1
Cobalt	<0.170		0.500	0.170	ug/L		11/01/24 09:30	11/05/24 17:44	1
Lead	<0.260		0.500	0.260	ug/L		11/01/24 09:30	11/05/24 17:44	1
Nickel	<2.10		5.00	2.10	ug/L		11/01/24 09:30	11/05/24 17:44	1
Selenium	<1.40		5.00	1.40	ug/L		11/01/24 09:30	11/05/24 17:44	1
Silver	<0.500		1.00	0.500	ug/L		11/01/24 09:30	11/05/24 17:44	1
Thallium	<0.570		1.00	0.570	ug/L		11/01/24 09:30	11/05/24 17:44	1
Vanadium	<1.10		5.00	1.10	ug/L		11/01/24 09:30	11/05/24 17:44	1
Zinc	<9.70		20.0	9.70	ug/L		11/01/24 09:30	11/05/24 17:44	1

Lab Sample ID: MB 310-438275/1-A
Matrix: Water
Analysis Batch: 438929

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 438275

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	<1.80		5.00	1.80	ug/L		11/01/24 09:30	11/06/24 13:53	1

Lab Sample ID: LCS 310-438275/2-A
Matrix: Water
Analysis Batch: 438812

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 438275

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	200	206.2		ug/L		103	80 - 120
Arsenic	200	205.1		ug/L		103	80 - 120
Barium	100	99.78		ug/L		100	80 - 120
Beryllium	100	94.90		ug/L		95	80 - 120
Cadmium	100	97.21		ug/L		97	80 - 120
Chromium	100	103.0		ug/L		103	80 - 120
Cobalt	100	109.4		ug/L		109	80 - 120

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 310-438275/2-A
Matrix: Water
Analysis Batch: 438812

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 438275

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Lead	200	207.4		ug/L		104	80 - 120
Nickel	200	204.5		ug/L		102	80 - 120
Selenium	400	390.8		ug/L		98	80 - 120
Silver	100	119.1		ug/L		119	80 - 120
Thallium	100	81.30		ug/L		81	80 - 120
Vanadium	100	99.01		ug/L		99	80 - 120
Zinc	200	187.4		ug/L		94	80 - 120

Lab Sample ID: LCS 310-438275/2-A
Matrix: Water
Analysis Batch: 438929

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 438275

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Copper	200	210.1		ug/L		105	80 - 120

Lab Sample ID: 310-293587-1 DU
Matrix: Water
Analysis Batch: 438812

Client Sample ID: MW-709B
Prep Type: Total/NA
Prep Batch: 438275

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Antimony	<1.00		<1.00		ug/L		NC	20
Arsenic	<0.530		<0.530		ug/L		NC	20
Barium	79.9		80.79		ug/L		1	20
Beryllium	<0.330		<0.330		ug/L		NC	20
Cadmium	<0.100		<0.100		ug/L		NC	20
Chromium	<1.20		<1.20		ug/L		NC	20
Cobalt	0.586		0.5910		ug/L		0.8	20
Lead	0.345	J	0.3550	J	ug/L		3	20
Nickel	2.19	J	2.202	J	ug/L		0.7	20
Selenium	<1.40		<1.40		ug/L		NC	20
Silver	<0.500		<0.500		ug/L		NC	20
Thallium	<0.570		<0.570		ug/L		NC	20
Vanadium	1.28	J	1.327	J	ug/L		4	20
Zinc	<9.70		<9.70		ug/L		NC	20

Lab Sample ID: 310-293587-1 DU
Matrix: Water
Analysis Batch: 438929

Client Sample ID: MW-709B
Prep Type: Total/NA
Prep Batch: 438275

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Copper	<1.80		<1.80		ug/L		NC	20

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: MB 310-437897/1
Matrix: Water
Analysis Batch: 437897

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<3.70		5.00	3.70	mg/L			10/29/24 10:35	1

Client: AECOM
Job ID: 310-293587-1
Project/Site: Black Hawk County Landfill (IDNR)

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: LCS 310-437897/2
Matrix: Water
Analysis Batch: 437897

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	98.00		mg/L		98	81 - 116

Lab Sample ID: MB 310-437904/1
Matrix: Water
Analysis Batch: 437904

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<3.70		5.00	3.70	mg/L			10/29/24 11:24	1

Lab Sample ID: LCS 310-437904/2
Matrix: Water
Analysis Batch: 437904

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	104.0		mg/L		104	81 - 116

QC Association Summary

Client: AECOM
Job ID: 310-293587-1
Project/Site: Black Hawk County Landfill (IDNR)

GC/MS VOA

Analysis Batch: 437539

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-293587-1	MW-709B	Total/NA	Water	8260D	
310-293587-2	MW-710B	Total/NA	Water	8260D	
310-293587-3	MW-711B	Total/NA	Water	8260D	
310-293587-4	Trip Blank	Total/NA	Water	8260D	
MB 310-437539/5	Method Blank	Total/NA	Water	8260D	
LCS 310-437539/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-437539/7	Lab Control Sample	Total/NA	Water	8260D	

Metals

Prep Batch: 438275

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-293587-1	MW-709B	Total/NA	Water	3005A	
310-293587-2	MW-710B	Total/NA	Water	3005A	
310-293587-3	MW-711B	Total/NA	Water	3005A	
MB 310-438275/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-438275/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-293587-1 DU	MW-709B	Total/NA	Water	3005A	

Analysis Batch: 438812

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-293587-1	MW-709B	Total/NA	Water	6020B	438275
310-293587-2	MW-710B	Total/NA	Water	6020B	438275
310-293587-3	MW-711B	Total/NA	Water	6020B	438275
MB 310-438275/1-A	Method Blank	Total/NA	Water	6020B	438275
LCS 310-438275/2-A	Lab Control Sample	Total/NA	Water	6020B	438275
310-293587-1 DU	MW-709B	Total/NA	Water	6020B	438275

Analysis Batch: 438929

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-293587-1	MW-709B	Total/NA	Water	6020B	438275
310-293587-2	MW-710B	Total/NA	Water	6020B	438275
310-293587-3	MW-711B	Total/NA	Water	6020B	438275
MB 310-438275/1-A	Method Blank	Total/NA	Water	6020B	438275
LCS 310-438275/2-A	Lab Control Sample	Total/NA	Water	6020B	438275
310-293587-1 DU	MW-709B	Total/NA	Water	6020B	438275

General Chemistry

Analysis Batch: 437897

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-293587-1	MW-709B	Total/NA	Water	I-3765-85	
310-293587-2	MW-710B	Total/NA	Water	I-3765-85	
MB 310-437897/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-437897/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Analysis Batch: 437904

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-293587-3	MW-711B	Total/NA	Water	I-3765-85	
MB 310-437904/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-437904/2	Lab Control Sample	Total/NA	Water	I-3765-85	

QC Association Summary

Client: AECOM
Job ID: 310-293587-1
Project/Site: Black Hawk County Landfill (IDNR)

Field Service / Mobile Lab

Analysis Batch: 437790

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-293587-1	MW-709B	Total/NA	Water	Field Sampling	
310-293587-2	MW-710B	Total/NA	Water	Field Sampling	
310-293587-3	MW-711B	Total/NA	Water	Field Sampling	

Lab Chronicle

Client: AECOM
Job ID: 310-293587-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: MW-709B
Lab Sample ID: 310-293587-1
Date Collected: 10/23/24 10:15
Matrix: Water
Date Received: 10/24/24 11:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	437539	WSE8	EET CF	10/25/24 22:12
Total/NA	Prep	3005A			438275	F5MW	EET CF	11/01/24 09:30
Total/NA	Analysis	6020B		1	438929	NFT2	EET CF	11/06/24 14:43
Total/NA	Prep	3005A			438275	F5MW	EET CF	11/01/24 09:30
Total/NA	Analysis	6020B		1	438812	NFT2	EET CF	11/05/24 18:25
Total/NA	Analysis	I-3765-85		1	437897	DGU1	EET CF	10/29/24 10:35
Total/NA	Analysis	Field Sampling		1	437790	BJ0R	EET CF	10/23/24 10:15

Client Sample ID: MW-710B
Lab Sample ID: 310-293587-2
Date Collected: 10/23/24 11:00
Matrix: Water
Date Received: 10/24/24 11:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	437539	WSE8	EET CF	10/25/24 22:34
Total/NA	Prep	3005A			438275	F5MW	EET CF	11/01/24 09:30
Total/NA	Analysis	6020B		1	438929	NFT2	EET CF	11/06/24 15:05
Total/NA	Prep	3005A			438275	F5MW	EET CF	11/01/24 09:30
Total/NA	Analysis	6020B		1	438812	NFT2	EET CF	11/05/24 18:38
Total/NA	Analysis	I-3765-85		1	437897	DGU1	EET CF	10/29/24 10:35
Total/NA	Analysis	Field Sampling		1	437790	BJ0R	EET CF	10/23/24 11:00

Client Sample ID: MW-711B
Lab Sample ID: 310-293587-3
Date Collected: 10/23/24 14:00
Matrix: Water
Date Received: 10/24/24 11:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	437539	WSE8	EET CF	10/25/24 22:56
Total/NA	Prep	3005A			438275	F5MW	EET CF	11/01/24 09:30
Total/NA	Analysis	6020B		1	438929	NFT2	EET CF	11/06/24 15:09
Total/NA	Prep	3005A			438275	F5MW	EET CF	11/01/24 09:30
Total/NA	Analysis	6020B		1	438812	NFT2	EET CF	11/05/24 18:40
Total/NA	Analysis	I-3765-85		1	437904	DGU1	EET CF	10/29/24 11:24
Total/NA	Analysis	Field Sampling		1	437790	BJ0R	EET CF	10/23/24 14:00

Client Sample ID: Trip Blank
Lab Sample ID: 310-293587-4
Date Collected: 10/23/24 00:00
Matrix: Water
Date Received: 10/24/24 11:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	437539	WSE8	EET CF	10/25/24 16:47

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Accreditation/Certification Summary

Client: AECOM
Job ID: 310-293587-1
Project/Site: Black Hawk County Landfill (IDNR)

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8260D		Water	1,2,4-Trichlorobenzene
8260D		Water	Allyl chloride
8260D		Water	Ethyl methacrylate
8260D		Water	m,p-Xylene
8260D		Water	o-Xylene
Field Sampling		Water	Field Turbidity

Method Summary

Client: AECOM
Job ID: 310-293587-1
Project/Site: Black Hawk County Landfill (IDNR)

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
Field Sampling	Field Sampling	EPA	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
5030B	Purge and Trap	SW846	EET CF

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

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310-293587 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information				
Client: AECOM				
City/State: Austin	CITY	STATE TX	Project: BHC	
Receipt Information				
Date/Time Received: 10/24/24	DATE	TIME 1115	Received By: TO	
Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ Lab Field Services ☑ Client Drop-off ☐ Other:_____				
Condition of Cooler/Containers				
Sample(s) received in Cooler?	☑ Yes	☐ No	*If yes:* Cooler ID:	
Multiple Coolers?	☐ Yes	☑ No	*If yes:* Cooler # _____ of _____	
Cooler Custody Seals Present? No	☐ Yes	☑ No	*If yes:* Cooler custody seals intact? ☐ Yes ☐ No	
Sample Custody Seals Present? No	☐ Yes	☑ No	*If yes:* Sample custody seals intact? ☐ Yes ☐ No	
Trip Blank Present?	☑ Yes	☐ No	*If yes:* Which VOA samples are in cooler? ↓	
Temperature Record				
Coolant: ☑ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE				
Thermometer ID: P			Correction Factor (°C): 0.0	
• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature				
Uncorrected Temp (°C): 2.9			Corrected Temp (°C): 2.9	
• **Sample Container Temperature**				
Container(s) used:	CONTAINER 1		CONTAINER 2	
Uncorrected Temp (°C):				
Corrected Temp (°C):				
Exceptions Noted				
1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No				
2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No				
NOTE: If yes, contact PM before proceeding. If no, proceed with login				
Additional Comments				

Eurofins Cedar Falls
3019 Venture Way

Cedar Falls, IA 50613
phone 319 277.2401 fax 319.277 2425

Chain of Custody Record

eurofins Environment Testing America

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other IDNR

Eurofins Environment Testing America

Client Contact	**Project Manager: Chris Oelkers**		COC No
AECOM	Email Christopher Oelkers@aecom com	**Site Contact:**	**Date:** 10-24-24	1 of 1 COCs
501 Sycamore Street, Suite 222	**Tel/Fax:319-296-6878**	**Lab Contact:**	**Carrier:**	TALS Project #
Waterloo, IA 50703	**Analysis Turnaround Time**			Sampler
(319) 232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS			**For Lab Use Only:**
(xxx) xxx-xxxx FAX	TAT if different from Below ____			Walk-in Client:
Project Name Black Hawk Co IDNR	☑ 2 weeks			Lab Sampling
Site Black Hawk County Landfill	☐ 1 week			
P O #	☐ 2 days			Job / SDG No
	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	Appendix I, TSS	Appendix II, TSS	2,4-D	4,4'-DDD	beta-BHC	delta BHC	Endosulfan I	Endosulfan sulfate	Endrin aldehyde	Silvex	Sulfide	Sample Specific Notes
MW-603B			G	GW		N		X											
MW-604B			G	GW		N		X											
MW-709B	10-23-24	1015	G	GW	5	N		X											Turbidity – 38.23 NTU
MW-710B	10-23-24	1100	G	GW	5	N		X											Turbidity – 9.28 NTU
MW-711B	10-23-24	1400	G	GW	5	N		X											Turbidity – 23.97 NTU
MW-712B			G	GW		N		X											
GUE-2			G	GW		N		X											
GUW1-1			G	GW		N		X											
GUW1-1-FD			G	GW		N		X											
GUW2-1			G	GW		N		X											
Equipment Blank-2			G	GW		N		X											
Trip Blank	10-23-24	0600	G	W	2	N		X											

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for ____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No | Cooler Temp (°C) Obs'd.____ Corr'd.____ | Therm ID No .____

Relinquished by: Ben Porter	Company: Aecom	Date/Time: 10-24-24	Received by:	Company:	Date/Time: 102424 1115
Relinquished by:	Company:	Date/Time	Received by:	Company:	Date/Time
Relinquished by:	Company:	Date/Time	Received in Laboratory by:	Company:	Date/Time

11/7/2024

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-293587-1

Login Number: 293587

List Source: Eurofins Cedar Falls

List Number: 1

Creator: Hirsch, Preston

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

ANALYTICAL REPORT

PREPARED FOR

Attn: Chris Oelkers
AECOM
501 Sycamore Street
Suite #222
Waterloo, Iowa 50703

Generated 11/8/2024 10:43:29 AM

JOB DESCRIPTION

Black Hawk County Landfill (IDNR)
Fall 2024

JOB NUMBER

310-293758-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

my EOL

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



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11/8/2024 10:43:29 AM

Authorized for release by
Zach Bindert, Senior Project Manager
Zach.Bindert@et.eurofinsus.com
(319)595-2016

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Job Narrative
310-293758-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 10/25/2024 4:20 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.3°C.

GC/MS VOA
Method 8260D: The method requirement for no headspace was not met. The following volatile sample was analyzed with headspace in the sample container: Trip Blank (310-293758-5).

Method 8260D: The continuing calibration verification (CCV) associated with batch 310-438053 recovered outside the control limits for Vinyl chloride (-24.8%D), Chloroethane (-23.3%D), Trichlorofluoromethane (-20.2%D). The LCS associated with this CCV passed CCV criteria for the affected analytes; therefore, the data have been reported. The associated sample is impacted: (CCV 310-438053/4).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
Method 6020B: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for preparation batch 310-438447 and analytical batch 310-438811 recovered outside control limits for the following analytes: Silver. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Field Service / Mobile Lab
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Sample Summary

Client: AECOM
Job ID: 310-293758-1
Project/Site: Black Hawk County Landfill (IDNR)

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-293758-1	MW-712B	Water	10/25/24 13:00	10/25/24 16:20
310-293758-2	Equipment Blank-2	Water	10/25/24 12:00	10/25/24 16:20
310-293758-3	MW-409B	Water	10/25/24 11:30	10/25/24 16:20
310-293758-4	MW-409B-FD	Ground Water	10/25/24 00:00	10/25/24 16:20
310-293758-5	Trip Blank	Water	10/25/24 00:00	10/25/24 16:20

Detection Summary

Client: AECOM
Job ID: 310-293758-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: MW-712B — Lab Sample ID: 310-293758-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.550	J	2.00	0.530	ug/L	1		6020B	Total/NA
Barium	68.1		2.00	0.660	ug/L	1		6020B	Total/NA
Cadmium	0.174	J	0.200	0.100	ug/L	1		6020B	Total/NA
Cobalt	5.59		0.500	0.170	ug/L	1		6020B	Total/NA
Nickel	8.56		5.00	2.10	ug/L	1		6020B	Total/NA
Total Suspended Solids	4.50		1.88	1.39	mg/L	1		I-3765-85	Total/NA
Field Turbidity	5.79				NTU	1		Field Sampling	Total/NA

Client Sample ID: Equipment Blank-2 — Lab Sample ID: 310-293758-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	3.19	J	10.0	3.10	ug/L	1		8260D	Total/NA
Bromodichloromethane	1.87		1.00	0.390	ug/L	1		8260D	Total/NA
Chloroform	9.37		3.00	1.30	ug/L	1		8260D	Total/NA

Client Sample ID: MW-409B — Lab Sample ID: 310-293758-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	5.06		2.00	0.530	ug/L	1		6020B	Total/NA
Barium	28.7		2.00	0.660	ug/L	1		6020B	Total/NA
Cobalt	7.88		0.500	0.170	ug/L	1		6020B	Total/NA
Nickel	6.66		5.00	2.10	ug/L	1		6020B	Total/NA
Total Suspended Solids	29.5		7.50	5.55	mg/L	1		I-3765-85	Total/NA
Field Turbidity	3.88				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-409B-FD — Lab Sample ID: 310-293758-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	5.04		2.00	0.530	ug/L	1		6020B	Total/NA
Barium	28.1		2.00	0.660	ug/L	1		6020B	Total/NA
Cobalt	7.79		0.500	0.170	ug/L	1		6020B	Total/NA
Nickel	6.66		5.00	2.10	ug/L	1		6020B	Total/NA
Total Suspended Solids	22.0		3.75	2.78	mg/L	1		I-3765-85	Total/NA

Client Sample ID: Trip Blank — Lab Sample ID: 310-293758-5

No Detections.

This Detection Summary does not include radiochemical test results.

Client: AECOM
Job ID: 310-293758-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: MW-712B
Lab Sample ID: 310-293758-1
Date Collected: 10/25/24 13:00
Matrix: Water
Date Received: 10/25/24 16:20

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			10/30/24 21:45	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			10/30/24 21:45	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			10/30/24 21:45	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			10/30/24 21:45	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			10/30/24 21:45	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			10/30/24 21:45	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			10/30/24 21:45	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			10/30/24 21:45	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			10/30/24 21:45	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			10/30/24 21:45	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			10/30/24 21:45	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			10/30/24 21:45	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			10/30/24 21:45	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			10/30/24 21:45	1
2-Hexanone	<2.00		10.0	2.00	ug/L			10/30/24 21:45	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			10/30/24 21:45	1
Acetone	<3.10		10.0	3.10	ug/L			10/30/24 21:45	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			10/30/24 21:45	1
Benzene	<0.220		0.500	0.220	ug/L			10/30/24 21:45	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			10/30/24 21:45	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			10/30/24 21:45	1
Bromoform	<0.780		5.00	0.780	ug/L			10/30/24 21:45	1
Bromomethane	<1.10		4.00	1.10	ug/L			10/30/24 21:45	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			10/30/24 21:45	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			10/30/24 21:45	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			10/30/24 21:45	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			10/30/24 21:45	1
Chloroethane	<0.790		4.00	0.790	ug/L			10/30/24 21:45	1
Chloroform	<1.30		3.00	1.30	ug/L			10/30/24 21:45	1
Chloromethane	<0.610		3.00	0.610	ug/L			10/30/24 21:45	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			10/30/24 21:45	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			10/30/24 21:45	1
Dibromomethane	<0.330		1.00	0.330	ug/L			10/30/24 21:45	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			10/30/24 21:45	1
Iodomethane	<7.00		10.0	7.00	ug/L			10/30/24 21:45	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			10/30/24 21:45	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			10/30/24 21:45	1
o-Xylene	<0.400		1.00	0.400	ug/L			10/30/24 21:45	1
Styrene	<0.370		1.00	0.370	ug/L			10/30/24 21:45	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			10/30/24 21:45	1
Toluene	<0.430		1.00	0.430	ug/L			10/30/24 21:45	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			10/30/24 21:45	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			10/30/24 21:45	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			10/30/24 21:45	1
Trichloroethene	<0.430		1.00	0.430	ug/L			10/30/24 21:45	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			10/30/24 21:45	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			10/30/24 21:45	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			10/30/24 21:45	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			10/30/24 21:45	1

Client: AECOM
Job ID: 310-293758-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: MW-712B
Lab Sample ID: 310-293758-1
Date Collected: 10/25/24 13:00
Matrix: Water
Date Received: 10/25/24 16:20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*108*		*73 - 130*		*10/30/24 21:45*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*10/30/24 21:45*	*1*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*		*10/30/24 21:45*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		11/04/24 09:30	11/05/24 20:48	1
Arsenic	**0.550**	**J**	2.00	0.530	ug/L		11/04/24 09:30	11/05/24 20:48	1
Barium	**68.1**		2.00	0.660	ug/L		11/04/24 09:30	11/05/24 20:48	1
Beryllium	<0.330		1.00	0.330	ug/L		11/04/24 09:30	11/05/24 20:48	1
Cadmium	**0.174**	**J**	0.200	0.100	ug/L		11/04/24 09:30	11/05/24 20:48	1
Chromium	<1.20		5.00	1.20	ug/L		11/04/24 09:30	11/05/24 20:48	1
Cobalt	**5.59**		0.500	0.170	ug/L		11/04/24 09:30	11/05/24 20:48	1
Copper	<1.80		5.00	1.80	ug/L		11/04/24 09:30	11/05/24 20:48	1
Lead	<0.260		0.500	0.260	ug/L		11/04/24 09:30	11/05/24 20:48	1
Nickel	**8.56**		5.00	2.10	ug/L		11/04/24 09:30	11/05/24 20:48	1
Selenium	<1.40		5.00	1.40	ug/L		11/04/24 09:30	11/05/24 20:48	1
Silver	<0.500	*+	1.00	0.500	ug/L		11/04/24 09:30	11/05/24 20:48	1
Thallium	<0.570		1.00	0.570	ug/L		11/04/24 09:30	11/05/24 20:48	1
Vanadium	<1.10		5.00	1.10	ug/L		11/04/24 09:30	11/05/24 20:48	1
Zinc	<9.70		20.0	9.70	ug/L		11/04/24 09:30	11/05/24 20:48	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**4.50**		1.88	1.39	mg/L			10/31/24 06:46	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**5.79**				NTU			10/25/24 13:00	1

Client: AECOM
Job ID: 310-293758-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Equipment Blank-2
Lab Sample ID: 310-293758-2
Date Collected: 10/25/24 12:00
Matrix: Water
Date Received: 10/25/24 16:20

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			10/30/24 19:13	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			10/30/24 19:13	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			10/30/24 19:13	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			10/30/24 19:13	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			10/30/24 19:13	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			10/30/24 19:13	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			10/30/24 19:13	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			10/30/24 19:13	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			10/30/24 19:13	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			10/30/24 19:13	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			10/30/24 19:13	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			10/30/24 19:13	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			10/30/24 19:13	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			10/30/24 19:13	1
2-Hexanone	<2.00		10.0	2.00	ug/L			10/30/24 19:13	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			10/30/24 19:13	1
Acetone	**3.19**	**J**	10.0	3.10	ug/L			10/30/24 19:13	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			10/30/24 19:13	1
Benzene	<0.220		0.500	0.220	ug/L			10/30/24 19:13	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			10/30/24 19:13	1
Bromodichloromethane	**1.87**		1.00	0.390	ug/L			10/30/24 19:13	1
Bromoform	<0.780		5.00	0.780	ug/L			10/30/24 19:13	1
Bromomethane	<1.10		4.00	1.10	ug/L			10/30/24 19:13	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			10/30/24 19:13	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			10/30/24 19:13	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			10/30/24 19:13	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			10/30/24 19:13	1
Chloroethane	<0.790		4.00	0.790	ug/L			10/30/24 19:13	1
Chloroform	**9.37**		3.00	1.30	ug/L			10/30/24 19:13	1
Chloromethane	<0.610		3.00	0.610	ug/L			10/30/24 19:13	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			10/30/24 19:13	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			10/30/24 19:13	1
Dibromomethane	<0.330		1.00	0.330	ug/L			10/30/24 19:13	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			10/30/24 19:13	1
Iodomethane	<7.00		10.0	7.00	ug/L			10/30/24 19:13	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			10/30/24 19:13	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			10/30/24 19:13	1
o-Xylene	<0.400		1.00	0.400	ug/L			10/30/24 19:13	1
Styrene	<0.370		1.00	0.370	ug/L			10/30/24 19:13	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			10/30/24 19:13	1
Toluene	<0.430		1.00	0.430	ug/L			10/30/24 19:13	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			10/30/24 19:13	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			10/30/24 19:13	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			10/30/24 19:13	1
Trichloroethene	<0.430		1.00	0.430	ug/L			10/30/24 19:13	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			10/30/24 19:13	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			10/30/24 19:13	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			10/30/24 19:13	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			10/30/24 19:13	1

Client: AECOM
Job ID: 310-293758-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Equipment Blank-2
Lab Sample ID: 310-293758-2

Date Collected: 10/25/24 12:00
Matrix: Water

Date Received: 10/25/24 16:20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*114*		*73 - 130*		*10/30/24 19:13*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*10/30/24 19:13*	*1*
4-Bromofluorobenzene (Surr)	*105*		*80 - 120*		*10/30/24 19:13*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		11/04/24 09:30	11/05/24 20:51	1
Arsenic	<0.530		2.00	0.530	ug/L		11/04/24 09:30	11/05/24 20:51	1
Barium	<0.660		2.00	0.660	ug/L		11/04/24 09:30	11/05/24 20:51	1
Beryllium	<0.330		1.00	0.330	ug/L		11/04/24 09:30	11/05/24 20:51	1
Cadmium	<0.100		0.200	0.100	ug/L		11/04/24 09:30	11/05/24 20:51	1
Chromium	<1.20		5.00	1.20	ug/L		11/04/24 09:30	11/05/24 20:51	1
Cobalt	<0.170		0.500	0.170	ug/L		11/04/24 09:30	11/05/24 20:51	1
Copper	<1.80		5.00	1.80	ug/L		11/04/24 09:30	11/05/24 20:51	1
Lead	<0.260		0.500	0.260	ug/L		11/04/24 09:30	11/05/24 20:51	1
Nickel	<2.10		5.00	2.10	ug/L		11/04/24 09:30	11/05/24 20:51	1
Selenium	<1.40		5.00	1.40	ug/L		11/04/24 09:30	11/05/24 20:51	1
Silver	<0.500	*+	1.00	0.500	ug/L		11/04/24 09:30	11/05/24 20:51	1
Thallium	<0.570		1.00	0.570	ug/L		11/04/24 09:30	11/05/24 20:51	1
Vanadium	<1.10		5.00	1.10	ug/L		11/04/24 09:30	11/05/24 20:51	1
Zinc	<9.70		20.0	9.70	ug/L		11/04/24 09:30	11/05/24 20:51	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	<1.39		1.88	1.39	mg/L			10/31/24 06:46	1

Client: AECOM
Job ID: 310-293758-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: MW-409B
Lab Sample ID: 310-293758-3
Date Collected: 10/25/24 11:30
Matrix: Water
Date Received: 10/25/24 16:20

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			10/30/24 22:06	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			10/30/24 22:06	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			10/30/24 22:06	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			10/30/24 22:06	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			10/30/24 22:06	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			10/30/24 22:06	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			10/30/24 22:06	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			10/30/24 22:06	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			10/30/24 22:06	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			10/30/24 22:06	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			10/30/24 22:06	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			10/30/24 22:06	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			10/30/24 22:06	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			10/30/24 22:06	1
2-Hexanone	<2.00		10.0	2.00	ug/L			10/30/24 22:06	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			10/30/24 22:06	1
Acetone	<3.10		10.0	3.10	ug/L			10/30/24 22:06	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			10/30/24 22:06	1
Benzene	<0.220		0.500	0.220	ug/L			10/30/24 22:06	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			10/30/24 22:06	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			10/30/24 22:06	1
Bromoform	<0.780		5.00	0.780	ug/L			10/30/24 22:06	1
Bromomethane	<1.10		4.00	1.10	ug/L			10/30/24 22:06	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			10/30/24 22:06	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			10/30/24 22:06	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			10/30/24 22:06	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			10/30/24 22:06	1
Chloroethane	<0.790		4.00	0.790	ug/L			10/30/24 22:06	1
Chloroform	<1.30		3.00	1.30	ug/L			10/30/24 22:06	1
Chloromethane	<0.610		3.00	0.610	ug/L			10/30/24 22:06	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			10/30/24 22:06	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			10/30/24 22:06	1
Dibromomethane	<0.330		1.00	0.330	ug/L			10/30/24 22:06	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			10/30/24 22:06	1
Iodomethane	<7.00		10.0	7.00	ug/L			10/30/24 22:06	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			10/30/24 22:06	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			10/30/24 22:06	1
o-Xylene	<0.400		1.00	0.400	ug/L			10/30/24 22:06	1
Styrene	<0.370		1.00	0.370	ug/L			10/30/24 22:06	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			10/30/24 22:06	1
Toluene	<0.430		1.00	0.430	ug/L			10/30/24 22:06	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			10/30/24 22:06	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			10/30/24 22:06	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			10/30/24 22:06	1
Trichloroethene	<0.430		1.00	0.430	ug/L			10/30/24 22:06	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			10/30/24 22:06	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			10/30/24 22:06	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			10/30/24 22:06	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			10/30/24 22:06	1

Client: AECOM
Job ID: 310-293758-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: MW-409B
Lab Sample ID: 310-293758-3

Date Collected: 10/25/24 11:30
Matrix: Water

Date Received: 10/25/24 16:20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	*110*		*73 - 130*		*10/30/24 22:06*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*10/30/24 22:06*	*1*
4-Bromofluorobenzene (Surr)	*105*		*80 - 120*		*10/30/24 22:06*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		11/05/24 09:30	11/07/24 19:43	1
Arsenic	**5.06**		2.00	0.530	ug/L		11/05/24 09:30	11/07/24 19:43	1
Barium	**28.7**		2.00	0.660	ug/L		11/05/24 09:30	11/07/24 19:43	1
Beryllium	<0.330		1.00	0.330	ug/L		11/05/24 09:30	11/07/24 19:43	1
Cadmium	<0.100		0.200	0.100	ug/L		11/05/24 09:30	11/07/24 19:43	1
Chromium	<1.20		5.00	1.20	ug/L		11/05/24 09:30	11/07/24 19:43	1
Cobalt	**7.88**		0.500	0.170	ug/L		11/05/24 09:30	11/07/24 19:43	1
Copper	<1.80		5.00	1.80	ug/L		11/05/24 09:30	11/07/24 19:43	1
Lead	<0.260		0.500	0.260	ug/L		11/05/24 09:30	11/07/24 19:43	1
Nickel	**6.66**		5.00	2.10	ug/L		11/05/24 09:30	11/07/24 19:43	1
Selenium	<1.40		5.00	1.40	ug/L		11/05/24 09:30	11/07/24 19:43	1
Silver	<0.500		1.00	0.500	ug/L		11/05/24 09:30	11/07/24 19:43	1
Thallium	<0.570		1.00	0.570	ug/L		11/05/24 09:30	11/07/24 19:43	1
Vanadium	<1.10		5.00	1.10	ug/L		11/05/24 09:30	11/07/24 19:43	1
Zinc	<9.70		20.0	9.70	ug/L		11/05/24 09:30	11/07/24 19:43	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**29.5**		7.50	5.55	mg/L			10/31/24 06:46	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**3.88**				NTU			10/25/24 11:30	1

Client: AECOM
Job ID: 310-293758-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: MW-409B-FD
Lab Sample ID: 310-293758-4
Date Collected: 10/25/24 00:00
Matrix: Ground Water
Date Received: 10/25/24 16:20

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			10/30/24 22:28	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			10/30/24 22:28	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			10/30/24 22:28	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			10/30/24 22:28	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			10/30/24 22:28	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			10/30/24 22:28	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			10/30/24 22:28	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			10/30/24 22:28	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			10/30/24 22:28	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			10/30/24 22:28	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			10/30/24 22:28	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			10/30/24 22:28	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			10/30/24 22:28	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			10/30/24 22:28	1
2-Hexanone	<2.00		10.0	2.00	ug/L			10/30/24 22:28	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			10/30/24 22:28	1
Acetone	<3.10		10.0	3.10	ug/L			10/30/24 22:28	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			10/30/24 22:28	1
Benzene	<0.220		0.500	0.220	ug/L			10/30/24 22:28	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			10/30/24 22:28	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			10/30/24 22:28	1
Bromoform	<0.780		5.00	0.780	ug/L			10/30/24 22:28	1
Bromomethane	<1.10		4.00	1.10	ug/L			10/30/24 22:28	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			10/30/24 22:28	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			10/30/24 22:28	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			10/30/24 22:28	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			10/30/24 22:28	1
Chloroethane	<0.790		4.00	0.790	ug/L			10/30/24 22:28	1
Chloroform	<1.30		3.00	1.30	ug/L			10/30/24 22:28	1
Chloromethane	<0.610		3.00	0.610	ug/L			10/30/24 22:28	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			10/30/24 22:28	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			10/30/24 22:28	1
Dibromomethane	<0.330		1.00	0.330	ug/L			10/30/24 22:28	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			10/30/24 22:28	1
Iodomethane	<7.00		10.0	7.00	ug/L			10/30/24 22:28	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			10/30/24 22:28	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			10/30/24 22:28	1
o-Xylene	<0.400		1.00	0.400	ug/L			10/30/24 22:28	1
Styrene	<0.370		1.00	0.370	ug/L			10/30/24 22:28	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			10/30/24 22:28	1
Toluene	<0.430		1.00	0.430	ug/L			10/30/24 22:28	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			10/30/24 22:28	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			10/30/24 22:28	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			10/30/24 22:28	1
Trichloroethene	<0.430		1.00	0.430	ug/L			10/30/24 22:28	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			10/30/24 22:28	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			10/30/24 22:28	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			10/30/24 22:28	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			10/30/24 22:28	1

Client: AECOM
Job ID: 310-293758-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: MW-409B-FD
Lab Sample ID: 310-293758-4
Date Collected: 10/25/24 00:00
Matrix: Ground Water
Date Received: 10/25/24 16:20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*111*		*73 - 130*		*10/30/24 22:28*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*10/30/24 22:28*	*1*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*		*10/30/24 22:28*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		11/05/24 09:30	11/07/24 19:46	1
Arsenic	**5.04**		2.00	0.530	ug/L		11/05/24 09:30	11/07/24 19:46	1
Barium	**28.1**		2.00	0.660	ug/L		11/05/24 09:30	11/07/24 19:46	1
Beryllium	<0.330		1.00	0.330	ug/L		11/05/24 09:30	11/07/24 19:46	1
Cadmium	<0.100		0.200	0.100	ug/L		11/05/24 09:30	11/07/24 19:46	1
Chromium	<1.20		5.00	1.20	ug/L		11/05/24 09:30	11/07/24 19:46	1
Cobalt	**7.79**		0.500	0.170	ug/L		11/05/24 09:30	11/07/24 19:46	1
Copper	<1.80		5.00	1.80	ug/L		11/05/24 09:30	11/07/24 19:46	1
Lead	<0.260		0.500	0.260	ug/L		11/05/24 09:30	11/07/24 19:46	1
Nickel	**6.66**		5.00	2.10	ug/L		11/05/24 09:30	11/07/24 19:46	1
Selenium	<1.40		5.00	1.40	ug/L		11/05/24 09:30	11/07/24 19:46	1
Silver	<0.500		1.00	0.500	ug/L		11/05/24 09:30	11/07/24 19:46	1
Thallium	<0.570		1.00	0.570	ug/L		11/05/24 09:30	11/07/24 19:46	1
Vanadium	<1.10		5.00	1.10	ug/L		11/05/24 09:30	11/07/24 19:46	1
Zinc	<9.70		20.0	9.70	ug/L		11/05/24 09:30	11/07/24 19:46	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**22.0**		3.75	2.78	mg/L			10/31/24 06:46	1

Client: AECOM
Job ID: 310-293758-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Trip Blank
Lab Sample ID: 310-293758-5
Date Collected: 10/25/24 00:00
Matrix: Water
Date Received: 10/25/24 16:20

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			10/30/24 18:51	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			10/30/24 18:51	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			10/30/24 18:51	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			10/30/24 18:51	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			10/30/24 18:51	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			10/30/24 18:51	1
1,1-Dichloropropene	<0.430		1.00	0.430	ug/L			10/30/24 18:51	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			10/30/24 18:51	1
1,2,4-Trichlorobenzene	<0.750		5.00	0.750	ug/L			10/30/24 18:51	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			10/30/24 18:51	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			10/30/24 18:51	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			10/30/24 18:51	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			10/30/24 18:51	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			10/30/24 18:51	1
1,3-Dichlorobenzene	<0.300		1.00	0.300	ug/L			10/30/24 18:51	1
1,3-Dichloropropane	<0.400		1.00	0.400	ug/L			10/30/24 18:51	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			10/30/24 18:51	1
2,2-Dichloropropane	<0.690		4.00	0.690	ug/L			10/30/24 18:51	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			10/30/24 18:51	1
2-Hexanone	<2.00		10.0	2.00	ug/L			10/30/24 18:51	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			10/30/24 18:51	1
Acetone	<3.10		10.0	3.10	ug/L			10/30/24 18:51	1
Acrolein	<3.60		10.0	3.60	ug/L			10/30/24 18:51	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			10/30/24 18:51	1
Allyl chloride	<0.700		2.00	0.700	ug/L			10/30/24 18:51	1
Benzene	<0.220		0.500	0.220	ug/L			10/30/24 18:51	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			10/30/24 18:51	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			10/30/24 18:51	1
Bromoform	<0.780		5.00	0.780	ug/L			10/30/24 18:51	1
Bromomethane	<1.10		4.00	1.10	ug/L			10/30/24 18:51	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			10/30/24 18:51	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			10/30/24 18:51	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			10/30/24 18:51	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			10/30/24 18:51	1
Chloroethane	<0.790		4.00	0.790	ug/L			10/30/24 18:51	1
Chloroform	<1.30		3.00	1.30	ug/L			10/30/24 18:51	1
Chloromethane	<0.610		3.00	0.610	ug/L			10/30/24 18:51	1
Chloroprene	<0.230		1.00	0.230	ug/L			10/30/24 18:51	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			10/30/24 18:51	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			10/30/24 18:51	1
Dibromomethane	<0.330		1.00	0.330	ug/L			10/30/24 18:51	1
Dichlorodifluoromethane	<0.250		3.00	0.250	ug/L			10/30/24 18:51	1
Ethyl methacrylate	<0.680		2.00	0.680	ug/L			10/30/24 18:51	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			10/30/24 18:51	1
Iodomethane	<7.00		10.0	7.00	ug/L			10/30/24 18:51	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			10/30/24 18:51	1
Methacrylonitrile	<3.30		10.0	3.30	ug/L			10/30/24 18:51	1
Methyl methacrylate	<0.760		2.00	0.760	ug/L			10/30/24 18:51	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			10/30/24 18:51	1

Client: AECOM
Job ID: 310-293758-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Trip Blank
Lab Sample ID: 310-293758-5
Date Collected: 10/25/24 00:00
Matrix: Water
Date Received: 10/25/24 16:20

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<3.00		5.00	3.00	ug/L			10/30/24 18:51	1
o-Xylene	<0.400		1.00	0.400	ug/L			10/30/24 18:51	1
Propionitrile	<3.40		10.0	3.40	ug/L			10/30/24 18:51	1
Styrene	<0.370		1.00	0.370	ug/L			10/30/24 18:51	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			10/30/24 18:51	1
Toluene	<0.430		1.00	0.430	ug/L			10/30/24 18:51	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			10/30/24 18:51	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			10/30/24 18:51	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			10/30/24 18:51	1
Trichloroethene	<0.430		1.00	0.430	ug/L			10/30/24 18:51	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			10/30/24 18:51	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			10/30/24 18:51	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			10/30/24 18:51	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			10/30/24 18:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*110*		*73 - 130*		*10/30/24 18:51*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*10/30/24 18:51*	*1*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*		*10/30/24 18:51*	*1*

Definitions/Glossary

Client: AECOM
Job ID: 310-293758-1
Project/Site: Black Hawk County Landfill (IDNR)

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Surrogate Summary

Client: AECOM
Job ID: 310-293758-1
Project/Site: Black Hawk County Landfill (IDNR)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Ground Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-293758-4	MW-409B-FD	111	97	104

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-293758-1	MW-712B	108	100	104
310-293758-2	Equipment Blank-2	114	96	105
310-293758-3	MW-409B	110	99	105
310-293758-3 MS	MW-409B	96	99	104
310-293758-3 MSD	MW-409B	98	98	102
310-293758-5	Trip Blank	110	96	103
LCS 310-438053/6	Lab Control Sample	102	101	101
LCS 310-438053/7	Lab Control Sample	107	98	104
MB 310-438053/5	Method Blank	113	96	104

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 310-438053/5
Matrix: Water
Analysis Batch: 438053

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			10/30/24 17:46	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			10/30/24 17:46	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			10/30/24 17:46	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			10/30/24 17:46	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			10/30/24 17:46	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			10/30/24 17:46	1
1,1-Dichloropropene	<0.430		1.00	0.430	ug/L			10/30/24 17:46	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			10/30/24 17:46	1
1,2,4-Trichlorobenzene	<0.750		5.00	0.750	ug/L			10/30/24 17:46	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			10/30/24 17:46	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			10/30/24 17:46	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			10/30/24 17:46	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			10/30/24 17:46	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			10/30/24 17:46	1
1,3-Dichlorobenzene	<0.300		1.00	0.300	ug/L			10/30/24 17:46	1
1,3-Dichloropropane	<0.400		1.00	0.400	ug/L			10/30/24 17:46	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			10/30/24 17:46	1
2,2-Dichloropropane	<0.690		4.00	0.690	ug/L			10/30/24 17:46	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			10/30/24 17:46	1
2-Hexanone	<2.00		10.0	2.00	ug/L			10/30/24 17:46	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			10/30/24 17:46	1
Acetone	<3.10		10.0	3.10	ug/L			10/30/24 17:46	1
Acrolein	<3.60		10.0	3.60	ug/L			10/30/24 17:46	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			10/30/24 17:46	1
Allyl chloride	<0.700		2.00	0.700	ug/L			10/30/24 17:46	1
Benzene	<0.220		0.500	0.220	ug/L			10/30/24 17:46	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			10/30/24 17:46	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			10/30/24 17:46	1
Bromoform	<0.780		5.00	0.780	ug/L			10/30/24 17:46	1
Bromomethane	<1.10		4.00	1.10	ug/L			10/30/24 17:46	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			10/30/24 17:46	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			10/30/24 17:46	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			10/30/24 17:46	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			10/30/24 17:46	1
Chloroethane	<0.790		4.00	0.790	ug/L			10/30/24 17:46	1
Chloroform	<1.30		3.00	1.30	ug/L			10/30/24 17:46	1
Chloromethane	<0.610		3.00	0.610	ug/L			10/30/24 17:46	1
Chloroprene	<0.230		1.00	0.230	ug/L			10/30/24 17:46	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			10/30/24 17:46	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			10/30/24 17:46	1
Dibromomethane	<0.330		1.00	0.330	ug/L			10/30/24 17:46	1
Dichlorodifluoromethane	<0.250		3.00	0.250	ug/L			10/30/24 17:46	1
Ethyl methacrylate	<0.680		2.00	0.680	ug/L			10/30/24 17:46	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			10/30/24 17:46	1
Iodomethane	<7.00		10.0	7.00	ug/L			10/30/24 17:46	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			10/30/24 17:46	1
Methacrylonitrile	<3.30		10.0	3.30	ug/L			10/30/24 17:46	1
Methyl methacrylate	<0.760		2.00	0.760	ug/L			10/30/24 17:46	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-438053/5
Matrix: Water
Analysis Batch: 438053

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylene Chloride	<1.70		5.00	1.70	ug/L			10/30/24 17:46	1
Naphthalene	<3.00		5.00	3.00	ug/L			10/30/24 17:46	1
o-Xylene	<0.400		1.00	0.400	ug/L			10/30/24 17:46	1
Propionitrile	<3.40		10.0	3.40	ug/L			10/30/24 17:46	1
Styrene	<0.370		1.00	0.370	ug/L			10/30/24 17:46	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			10/30/24 17:46	1
Toluene	<0.430		1.00	0.430	ug/L			10/30/24 17:46	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			10/30/24 17:46	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			10/30/24 17:46	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			10/30/24 17:46	1
Trichloroethene	<0.430		1.00	0.430	ug/L			10/30/24 17:46	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			10/30/24 17:46	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			10/30/24 17:46	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			10/30/24 17:46	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			10/30/24 17:46	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*113*		*73 - 130*		*10/30/24 17:46*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*10/30/24 17:46*	*1*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*		*10/30/24 17:46*	*1*

Lab Sample ID: LCS 310-438053/6
Matrix: Water
Analysis Batch: 438053

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	20.0	18.39		ug/L		92	71 - 120
1,1,1-Trichloroethane	20.0	18.28		ug/L		91	73 - 129
1,1,2,2-Tetrachloroethane	20.0	18.14		ug/L		91	68 - 124
1,1,2-Trichloroethane	20.0	19.34		ug/L		97	73 - 123
1,1-Dichloroethane	20.0	17.57		ug/L		88	70 - 127
1,1-Dichloroethene	20.0	17.12		ug/L		86	63 - 132
1,1-Dichloropropene	20.0	18.44		ug/L		92	69 - 132
1,2,3-Trichloropropane	20.0	18.75		ug/L		94	65 - 127
1,2,4-Trichlorobenzene	20.0	18.97		ug/L		95	68 - 124
1,2-Dibromo-3-Chloropropane	20.0	18.27		ug/L		91	50 - 150
1,2-Dibromoethane (EDB)	20.0	18.73		ug/L		94	75 - 125
1,2-Dichlorobenzene	20.0	18.03		ug/L		90	74 - 120
1,2-Dichloroethane	20.0	17.28		ug/L		86	71 - 125
1,2-Dichloropropane	20.0	18.77		ug/L		94	73 - 124
1,3-Dichlorobenzene	20.0	17.62		ug/L		88	72 - 120
1,3-Dichloropropane	20.0	18.81		ug/L		94	72 - 125
1,4-Dichlorobenzene	20.0	17.70		ug/L		89	72 - 120
2,2-Dichloropropane	20.0	16.92		ug/L		85	50 - 150
2-Butanone (MEK)	40.0	34.71		ug/L		87	50 - 150
2-Hexanone	40.0	40.69		ug/L		102	60 - 140
4-Methyl-2-pentanone (MIBK)	40.0	37.60		ug/L		94	60 - 139
Acetone	40.0	37.24		ug/L		93	50 - 150

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-438053/6
Matrix: Water
Analysis Batch: 438053

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Acrolein	95.5	84.38		ug/L		88	49 - 150
Acrylonitrile	200	181.7		ug/L		91	50 - 150
Allyl chloride	20.0	16.87		ug/L		84	49 - 150
Benzene	20.0	18.08		ug/L		90	72 - 124
Bromochloromethane	20.0	19.14		ug/L		96	73 - 130
Bromodichloromethane	20.0	17.25		ug/L		86	74 - 122
Bromoform	20.0	17.53		ug/L		88	61 - 122
Carbon disulfide	20.0	16.96		ug/L		85	59 - 135
Carbon tetrachloride	20.0	18.62		ug/L		93	67 - 132
Chlorobenzene	20.0	17.92		ug/L		90	76 - 120
Chlorodibromomethane	20.0	17.32		ug/L		87	71 - 121
Chloroform	20.0	17.44		ug/L		87	72 - 125
Chloroprene	20.0	18.59		ug/L		93	69 - 133
cis-1,2-Dichloroethene	20.0	17.88		ug/L		89	74 - 123
cis-1,3-Dichloropropene	20.0	18.57		ug/L		93	71 - 125
Dibromomethane	20.0	18.53		ug/L		93	74 - 125
Ethyl methacrylate	20.0	19.91		ug/L		100	70 - 129
Ethylbenzene	20.0	18.14		ug/L		91	74 - 122
Iodomethane	20.0	10.27		ug/L		51	10 - 150
Methacrylonitrile	200	175.4		ug/L		88	69 - 129
Methyl methacrylate	40.0	38.39		ug/L		96	68 - 131
Methylene Chloride	20.0	18.40		ug/L		92	50 - 150
Naphthalene	20.0	19.51		ug/L		98	50 - 150
Propionitrile	200	191.3		ug/L		96	63 - 135
Styrene	20.0	17.87		ug/L		89	74 - 121
Tetrachloroethene	20.0	18.58		ug/L		93	71 - 130
Toluene	20.0	17.86		ug/L		89	74 - 123
trans-1,2-Dichloroethene	20.0	17.59		ug/L		88	70 - 126
trans-1,3-Dichloropropene	20.0	17.89		ug/L		89	69 - 123
trans-1,4-Dichloro-2-butene	20.0	17.78		ug/L		89	50 - 150
Trichloroethene	20.0	17.70		ug/L		89	72 - 126
Vinyl acetate	40.0	32.51		ug/L		81	50 - 150
Xylenes, Total	40.0	36.64		ug/L		92	73 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*102*		*73 - 130*
Toluene-d8 (Surr)	*101*		*80 - 120*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*

Lab Sample ID: LCS 310-438053/7
Matrix: Water
Analysis Batch: 438053

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	13.78		ug/L		69	23 - 150
Chloroethane	20.0	16.25		ug/L		81	54 - 136
Chloromethane	20.0	15.50		ug/L		78	38 - 150
Dichlorodifluoromethane	20.0	15.20		ug/L		76	39 - 150

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-438053/7
Matrix: Water
Analysis Batch: 438053

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Trichlorofluoromethane			20.0	17.11		ug/L		86	54 - 149		
Vinyl chloride			20.0	16.25		ug/L		81	56 - 140		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*107*		*73 - 130*
Toluene-d8 (Surr)	*98*		*80 - 120*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*

Lab Sample ID: 310-293758-3 MS
Matrix: Water
Analysis Batch: 438053

Client Sample ID: MW-409B
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
1,1,1,2-Tetrachloroethane	<0.380		25.0	21.41		ug/L		86	55 - 130		
1,1,1-Trichloroethane	<0.190		25.0	20.62		ug/L		82	52 - 130		
1,1,2,2-Tetrachloroethane	<0.470		25.0	21.38		ug/L		86	54 - 130		
1,1,2-Trichloroethane	<0.450		25.0	22.05		ug/L		88	58 - 130		
1,1-Dichloroethane	<0.220		25.0	19.42		ug/L		78	49 - 130		
1,1-Dichloroethene	<0.560		25.0	20.64		ug/L		83	37 - 132		
1,1-Dichloropropene	<0.430		25.0	21.05		ug/L		84	50 - 132		
1,2,3-Trichloropropane	<0.590		25.0	21.76		ug/L		87	49 - 130		
1,2,4-Trichlorobenzene	<0.750		25.0	24.08		ug/L		96	55 - 130		
1,2-Dibromo-3-Chloropropane	<1.20		25.0	21.40		ug/L		86	38 - 150		
1,2-Dibromoethane (EDB)	<0.340		25.0	22.02		ug/L		88	60 - 130		
1,2-Dichlorobenzene	<0.370		25.0	21.83		ug/L		87	59 - 130		
1,2-Dichloroethane	<0.390		25.0	19.80		ug/L		79	51 - 130		
1,2-Dichloropropane	<0.270		25.0	21.38		ug/L		86	57 - 130		
1,3-Dichlorobenzene	<0.300		25.0	20.75		ug/L		83	57 - 130		
1,3-Dichloropropane	<0.400		25.0	21.61		ug/L		86	56 - 130		
1,4-Dichlorobenzene	<0.230		25.0	21.65		ug/L		87	57 - 130		
2,2-Dichloropropane	<0.690		25.0	17.25		ug/L		69	25 - 150		
2-Butanone (MEK)	<2.10		50.0	39.71		ug/L		79	38 - 150		
2-Hexanone	<2.00		50.0	45.95		ug/L		92	46 - 140		
4-Methyl-2-pentanone (MIBK)	<2.10		50.0	45.69		ug/L		91	47 - 139		
Acetone	<3.10		50.0	44.50		ug/L		89	31 - 150		
Acrolein	<3.60		119	105.5		ug/L		88	25 - 150		
Acrylonitrile	<2.20		250	208.7		ug/L		83	40 - 150		
Allyl chloride	<0.700		25.0	18.50		ug/L		74	28 - 150		
Benzene	<0.220		25.0	20.12		ug/L		80	46 - 130		
Bromochloromethane	<0.540		25.0	20.84		ug/L		83	57 - 130		
Bromodichloromethane	<0.390		25.0	18.54		ug/L		74	57 - 130		
Bromoform	<0.780		25.0	19.97		ug/L		80	44 - 130		
Carbon disulfide	<0.450		25.0	20.47		ug/L		82	38 - 135		
Carbon tetrachloride	<0.650		25.0	21.09		ug/L		84	45 - 132		
Chlorobenzene	<0.400		25.0	20.91		ug/L		84	59 - 130		
Chlorodibromomethane	<0.750		25.0	19.84		ug/L		79	54 - 130		
Chloroform	<1.30		25.0	19.69		ug/L		79	51 - 130		
Chloroprene	<0.230		25.0	21.03		ug/L		84	43 - 133		

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 310-293758-3 MS
Matrix: Water
Analysis Batch: 438053

Client Sample ID: MW-409B
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
cis-1,2-Dichloroethene	<0.210		25.0	20.77		ug/L		83	45 - 130
cis-1,3-Dichloropropene	<0.250		25.0	20.86		ug/L		83	53 - 130
Dibromomethane	<0.330		25.0	21.08		ug/L		84	59 - 130
Ethyl methacrylate	<0.680		25.0	22.98		ug/L		92	54 - 130
Ethylbenzene	<0.310		25.0	21.37		ug/L		85	45 - 130
Iodomethane	<7.00		25.0	14.20		ug/L		57	10 - 150
Methacrylonitrile	<3.30		250	204.8		ug/L		82	55 - 130
Methyl methacrylate	<0.760		50.0	43.65		ug/L		87	44 - 139
Methylene Chloride	<1.70		25.0	21.56		ug/L		86	37 - 150
Naphthalene	<3.00		25.0	25.07		ug/L		100	40 - 150
Propionitrile	<3.40		250	218.7		ug/L		87	49 - 135
Styrene	<0.370		25.0	20.78		ug/L		83	47 - 130
Tetrachloroethene	<0.480		25.0	21.25		ug/L		85	47 - 130
Toluene	<0.430		25.0	20.57		ug/L		82	51 - 130
trans-1,2-Dichloroethene	<0.270		25.0	19.26		ug/L		77	48 - 130
trans-1,3-Dichloropropene	<0.560		25.0	20.90		ug/L		84	50 - 130
trans-1,4-Dichloro-2-butene	<1.10		25.0	19.47		ug/L		78	26 - 150
Trichloroethene	<0.430		25.0	20.07		ug/L		80	51 - 130
Vinyl acetate	<2.50		50.0	36.11		ug/L		72	29 - 150
Xylenes, Total	<0.400		50.0	43.24		ug/L		86	43 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*96*		*73 - 130*
Toluene-d8 (Surr)	*99*		*80 - 120*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*

Lab Sample ID: 310-293758-3 MSD
Matrix: Water
Analysis Batch: 438053

Client Sample ID: MW-409B
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	<0.380		25.0	20.37		ug/L		81	55 - 130	5	20
1,1,1-Trichloroethane	<0.190		25.0	20.80		ug/L		83	52 - 130	1	20
1,1,2,2-Tetrachloroethane	<0.470		25.0	19.99		ug/L		80	54 - 130	7	20
1,1,2-Trichloroethane	<0.450		25.0	21.50		ug/L		86	58 - 130	3	20
1,1-Dichloroethane	<0.220		25.0	19.58		ug/L		78	49 - 130	1	20
1,1-Dichloroethene	<0.560		25.0	19.95		ug/L		80	37 - 132	3	26
1,1-Dichloropropene	<0.430		25.0	20.21		ug/L		81	50 - 132	4	20
1,2,3-Trichloropropane	<0.590		25.0	21.41		ug/L		86	49 - 130	2	26
1,2,4-Trichlorobenzene	<0.750		25.0	22.49		ug/L		90	55 - 130	7	20
1,2-Dibromo-3-Chloropropane	<1.20		25.0	19.32		ug/L		77	38 - 150	10	20
1,2-Dibromoethane (EDB)	<0.340		25.0	20.90		ug/L		84	60 - 130	5	20
1,2-Dichlorobenzene	<0.370		25.0	21.02		ug/L		84	59 - 130	4	20
1,2-Dichloroethane	<0.390		25.0	19.84		ug/L		79	51 - 130	0	20
1,2-Dichloropropane	<0.270		25.0	21.10		ug/L		84	57 - 130	1	20
1,3-Dichlorobenzene	<0.300		25.0	20.55		ug/L		82	57 - 130	1	20
1,3-Dichloropropane	<0.400		25.0	20.95		ug/L		84	56 - 130	3	20
1,4-Dichlorobenzene	<0.230		25.0	20.56		ug/L		82	57 - 130	5	20

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 310-293758-3 MSD
Client Sample ID: MW-409B
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 438053

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,2-Dichloropropane	<0.690		25.0	17.48		ug/L		70	25 - 150	1	25
2-Butanone (MEK)	<2.10		50.0	38.72		ug/L		77	38 - 150	3	20
2-Hexanone	<2.00		50.0	46.01		ug/L		92	46 - 140	0	20
4-Methyl-2-pentanone (MIBK)	<2.10		50.0	42.34		ug/L		85	47 - 139	8	20
Acetone	<3.10		50.0	41.93		ug/L		84	31 - 150	6	29
Acrolein	<3.60		119	105.8		ug/L		89	25 - 150	0	31
Acrylonitrile	<2.20		250	207.1		ug/L		83	40 - 150	1	20
Allyl chloride	<0.700		25.0	19.96		ug/L		80	28 - 150	8	35
Benzene	<0.220		25.0	19.79		ug/L		79	46 - 130	2	20
Bromochloromethane	<0.540		25.0	20.74		ug/L		83	57 - 130	0	20
Bromodichloromethane	<0.390		25.0	18.74		ug/L		75	57 - 130	1	20
Bromoform	<0.780		25.0	19.57		ug/L		78	44 - 130	2	20
Carbon disulfide	<0.450		25.0	19.48		ug/L		78	38 - 135	5	30
Carbon tetrachloride	<0.650		25.0	20.48		ug/L		82	45 - 132	3	20
Chlorobenzene	<0.400		25.0	19.94		ug/L		80	59 - 130	5	20
Chlorodibromomethane	<0.750		25.0	19.49		ug/L		78	54 - 130	2	20
Chloroform	<1.30		25.0	19.44		ug/L		78	51 - 130	1	20
Chloroprene	<0.230		25.0	19.62		ug/L		78	43 - 133	7	20
cis-1,2-Dichloroethene	<0.210		25.0	19.96		ug/L		80	45 - 130	4	20
cis-1,3-Dichloropropene	<0.250		25.0	20.58		ug/L		82	53 - 130	1	20
Dibromomethane	<0.330		25.0	20.60		ug/L		82	59 - 130	2	20
Ethyl methacrylate	<0.680		25.0	21.83		ug/L		87	54 - 130	5	20
Ethylbenzene	<0.310		25.0	20.55		ug/L		82	45 - 130	4	20
Iodomethane	<7.00		25.0	16.18		ug/L		65	10 - 150	13	35
Methacrylonitrile	<3.30		250	195.3		ug/L		78	55 - 130	5	20
Methyl methacrylate	<0.760		50.0	41.34		ug/L		83	44 - 139	5	20
Methylene Chloride	<1.70		25.0	20.51		ug/L		82	37 - 150	5	24
Naphthalene	<3.00		25.0	24.55		ug/L		98	40 - 150	2	30
Propionitrile	<3.40		250	214.9		ug/L		86	49 - 135	2	20
Styrene	<0.370		25.0	20.38		ug/L		82	47 - 130	2	20
Tetrachloroethene	<0.480		25.0	20.98		ug/L		84	47 - 130	1	20
Toluene	<0.430		25.0	20.16		ug/L		81	51 - 130	2	20
trans-1,2-Dichloroethene	<0.270		25.0	19.95		ug/L		80	48 - 130	4	22
trans-1,3-Dichloropropene	<0.560		25.0	20.12		ug/L		80	50 - 130	4	20
trans-1,4-Dichloro-2-butene	<1.10		25.0	18.48		ug/L		74	26 - 150	5	23
Trichloroethene	<0.430		25.0	20.07		ug/L		80	51 - 130	0	20
Vinyl acetate	<2.50		50.0	35.51		ug/L		71	29 - 150	2	23
Xylenes, Total	<0.400		50.0	41.73		ug/L		83	43 - 130	4	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*98*		*73 - 130*
Toluene-d8 (Surr)	*98*		*80 - 120*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-438447/1-A
Matrix: Water
Analysis Batch: 438811

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 438447

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		11/04/24 09:30	11/05/24 19:06	1
Arsenic	<0.530		2.00	0.530	ug/L		11/04/24 09:30	11/05/24 19:06	1
Barium	<0.660		2.00	0.660	ug/L		11/04/24 09:30	11/05/24 19:06	1
Beryllium	<0.330		1.00	0.330	ug/L		11/04/24 09:30	11/05/24 19:06	1
Cadmium	<0.100		0.200	0.100	ug/L		11/04/24 09:30	11/05/24 19:06	1
Chromium	<1.20		5.00	1.20	ug/L		11/04/24 09:30	11/05/24 19:06	1
Cobalt	<0.170		0.500	0.170	ug/L		11/04/24 09:30	11/05/24 19:06	1
Copper	<1.80		5.00	1.80	ug/L		11/04/24 09:30	11/05/24 19:06	1
Lead	<0.260		0.500	0.260	ug/L		11/04/24 09:30	11/05/24 19:06	1
Nickel	<2.10		5.00	2.10	ug/L		11/04/24 09:30	11/05/24 19:06	1
Selenium	<1.40		5.00	1.40	ug/L		11/04/24 09:30	11/05/24 19:06	1
Silver	<0.500		1.00	0.500	ug/L		11/04/24 09:30	11/05/24 19:06	1
Thallium	<0.570		1.00	0.570	ug/L		11/04/24 09:30	11/05/24 19:06	1
Vanadium	<1.10		5.00	1.10	ug/L		11/04/24 09:30	11/05/24 19:06	1
Zinc	<9.70		20.0	9.70	ug/L		11/04/24 09:30	11/05/24 19:06	1

Lab Sample ID: LCS 310-438447/2-A
Matrix: Water
Analysis Batch: 438811

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 438447

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	200	191.6		ug/L		96	80 - 120
Arsenic	200	207.6		ug/L		104	80 - 120
Barium	100	97.84		ug/L		98	80 - 120
Beryllium	100	98.83		ug/L		99	80 - 120
Cadmium	100	95.88		ug/L		96	80 - 120
Chromium	100	106.7		ug/L		107	80 - 120
Cobalt	100	103.5		ug/L		103	80 - 120
Copper	200	226.1		ug/L		113	80 - 120
Lead	200	205.4		ug/L		103	80 - 120
Nickel	200	215.2		ug/L		108	80 - 120
Selenium	400	392.6		ug/L		98	80 - 120
Silver	100	120.8	*+	ug/L		121	80 - 120
Thallium	100	108.4		ug/L		108	80 - 120
Vanadium	100	104.0		ug/L		104	80 - 120
Zinc	200	200.4		ug/L		100	80 - 120

Lab Sample ID: MB 310-438624/1-A
Matrix: Water
Analysis Batch: 438930

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 438624

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.530		2.00	0.530	ug/L		11/05/24 09:30	11/06/24 12:38	1
Barium	<0.660		2.00	0.660	ug/L		11/05/24 09:30	11/06/24 12:38	1
Beryllium	<0.330		1.00	0.330	ug/L		11/05/24 09:30	11/06/24 12:38	1
Cadmium	<0.100		0.200	0.100	ug/L		11/05/24 09:30	11/06/24 12:38	1
Chromium	<1.20		5.00	1.20	ug/L		11/05/24 09:30	11/06/24 12:38	1
Cobalt	<0.170		0.500	0.170	ug/L		11/05/24 09:30	11/06/24 12:38	1
Copper	<1.80		5.00	1.80	ug/L		11/05/24 09:30	11/06/24 12:38	1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 310-438624/1-A
Matrix: Water
Analysis Batch: 438930

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 438624

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	<0.260		0.500	0.260	ug/L		11/05/24 09:30	11/06/24 12:38	1
Nickel	<2.10		5.00	2.10	ug/L		11/05/24 09:30	11/06/24 12:38	1
Selenium	<1.40		5.00	1.40	ug/L		11/05/24 09:30	11/06/24 12:38	1
Thallium	<0.570		1.00	0.570	ug/L		11/05/24 09:30	11/06/24 12:38	1
Vanadium	<1.10		5.00	1.10	ug/L		11/05/24 09:30	11/06/24 12:38	1
Zinc	<9.70		20.0	9.70	ug/L		11/05/24 09:30	11/06/24 12:38	1

Lab Sample ID: MB 310-438624/1-A
Matrix: Water
Analysis Batch: 439075

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 438624

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		11/05/24 09:30	11/07/24 18:29	1
Silver	<0.500		1.00	0.500	ug/L		11/05/24 09:30	11/07/24 18:29	1
Thallium	<0.570		1.00	0.570	ug/L		11/05/24 09:30	11/07/24 18:29	1

Lab Sample ID: LCS 310-438624/2-A
Matrix: Water
Analysis Batch: 438930

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 438624

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	200	194.5		ug/L		97	80 - 120
Barium	100	98.01		ug/L		98	80 - 120
Beryllium	100	92.69		ug/L		93	80 - 120
Cadmium	100	95.47		ug/L		95	80 - 120
Chromium	100	96.59		ug/L		97	80 - 120
Cobalt	100	100.3		ug/L		100	80 - 120
Copper	200	192.5		ug/L		96	80 - 120
Lead	200	189.6		ug/L		95	80 - 120
Nickel	200	191.9		ug/L		96	80 - 120
Selenium	400	369.8		ug/L		92	80 - 120
Vanadium	100	92.89		ug/L		93	80 - 120
Zinc	200	182.4		ug/L		91	80 - 120

Lab Sample ID: LCS 310-438624/2-A
Matrix: Water
Analysis Batch: 439075

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 438624

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	200	188.8		ug/L		94	80 - 120
Silver	100	114.2		ug/L		114	80 - 120
Thallium	100	108.6		ug/L		109	80 - 120

Client: AECOM
Job ID: 310-293758-1
Project/Site: Black Hawk County Landfill (IDNR)

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: MB 310-438152/1
Matrix: Water
Analysis Batch: 438152

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<3.70		5.00	3.70	mg/L			10/31/24 06:46	1

Lab Sample ID: LCS 310-438152/2
Matrix: Water
Analysis Batch: 438152

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Suspended Solids			100	102.0		mg/L		102	81 - 116		

Lab Sample ID: 310-293758-3 DU
Matrix: Water
Analysis Batch: 438152

Client Sample ID: MW-409B
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Suspended Solids	29.5			29.50		mg/L				0	35

GC/MS VOA

Analysis Batch: 438053

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-293758-1	MW-712B	Total/NA	Water	8260D	
310-293758-2	Equipment Blank-2	Total/NA	Water	8260D	
310-293758-3	MW-409B	Total/NA	Water	8260D	
310-293758-4	MW-409B-FD	Total/NA	Ground Water	8260D	
310-293758-5	Trip Blank	Total/NA	Water	8260D	
MB 310-438053/5	Method Blank	Total/NA	Water	8260D	
LCS 310-438053/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-438053/7	Lab Control Sample	Total/NA	Water	8260D	
310-293758-3 MS	MW-409B	Total/NA	Water	8260D	
310-293758-3 MSD	MW-409B	Total/NA	Water	8260D	

Metals

Prep Batch: 438447

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-293758-1	MW-712B	Total/NA	Water	3005A	
310-293758-2	Equipment Blank-2	Total/NA	Water	3005A	
MB 310-438447/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-438447/2-A	Lab Control Sample	Total/NA	Water	3005A	

Prep Batch: 438624

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-293758-3	MW-409B	Total/NA	Water	3005A	
310-293758-4	MW-409B-FD	Total/NA	Ground Water	3005A	
MB 310-438624/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-438624/2-A	Lab Control Sample	Total/NA	Water	3005A	

Analysis Batch: 438811

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-293758-1	MW-712B	Total/NA	Water	6020B	438447
310-293758-2	Equipment Blank-2	Total/NA	Water	6020B	438447
MB 310-438447/1-A	Method Blank	Total/NA	Water	6020B	438447
LCS 310-438447/2-A	Lab Control Sample	Total/NA	Water	6020B	438447

Analysis Batch: 438930

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 310-438624/1-A	Method Blank	Total/NA	Water	6020B	438624
LCS 310-438624/2-A	Lab Control Sample	Total/NA	Water	6020B	438624

Analysis Batch: 439075

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-293758-3	MW-409B	Total/NA	Water	6020B	438624
310-293758-4	MW-409B-FD	Total/NA	Ground Water	6020B	438624
MB 310-438624/1-A	Method Blank	Total/NA	Water	6020B	438624
LCS 310-438624/2-A	Lab Control Sample	Total/NA	Water	6020B	438624

General Chemistry

Analysis Batch: 438152

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-293758-1	MW-712B	Total/NA	Water	I-3765-85	
310-293758-2	Equipment Blank-2	Total/NA	Water	I-3765-85	

General Chemistry (Continued)

Analysis Batch: 438152 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-293758-3	MW-409B	Total/NA	Water	I-3765-85	
310-293758-4	MW-409B-FD	Total/NA	Ground Water	I-3765-85	
MB 310-438152/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-438152/2	Lab Control Sample	Total/NA	Water	I-3765-85	
310-293758-3 DU	MW-409B	Total/NA	Water	I-3765-85	

Field Service / Mobile Lab

Analysis Batch: 437790

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-293758-1	MW-712B	Total/NA	Water	Field Sampling	
310-293758-3	MW-409B	Total/NA	Water	Field Sampling	

Lab Chronicle

Client: AECOM
Job ID: 310-293758-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: MW-712B
Lab Sample ID: 310-293758-1
Date Collected: 10/25/24 13:00
Matrix: Water
Date Received: 10/25/24 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	438053	WSE8	EET CF	10/30/24 21:45
Total/NA	Prep	3005A			438447	F5MW	EET CF	11/04/24 09:30
Total/NA	Analysis	6020B		1	438811	A6US	EET CF	11/05/24 20:48
Total/NA	Analysis	I-3765-85		1	438152	DGU1	EET CF	10/31/24 06:46
Total/NA	Analysis	Field Sampling		1	437790	BJ0R	EET CF	10/25/24 13:00

Client Sample ID: Equipment Blank-2
Lab Sample ID: 310-293758-2
Date Collected: 10/25/24 12:00
Matrix: Water
Date Received: 10/25/24 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	438053	WSE8	EET CF	10/30/24 19:13
Total/NA	Prep	3005A			438447	F5MW	EET CF	11/04/24 09:30
Total/NA	Analysis	6020B		1	438811	A6US	EET CF	11/05/24 20:51
Total/NA	Analysis	I-3765-85		1	438152	DGU1	EET CF	10/31/24 06:46

Client Sample ID: MW-409B
Lab Sample ID: 310-293758-3
Date Collected: 10/25/24 11:30
Matrix: Water
Date Received: 10/25/24 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	438053	WSE8	EET CF	10/30/24 22:06
Total/NA	Prep	3005A			438624	F5MW	EET CF	11/05/24 09:30
Total/NA	Analysis	6020B		1	439075	A6US	EET CF	11/07/24 19:43
Total/NA	Analysis	I-3765-85		1	438152	DGU1	EET CF	10/31/24 06:46
Total/NA	Analysis	Field Sampling		1	437790	BJ0R	EET CF	10/25/24 11:30

Client Sample ID: MW-409B-FD
Lab Sample ID: 310-293758-4
Date Collected: 10/25/24 00:00
Matrix: Ground Water
Date Received: 10/25/24 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	438053	WSE8	EET CF	10/30/24 22:28
Total/NA	Prep	3005A			438624	F5MW	EET CF	11/05/24 09:30
Total/NA	Analysis	6020B		1	439075	A6US	EET CF	11/07/24 19:46
Total/NA	Analysis	I-3765-85		1	438152	DGU1	EET CF	10/31/24 06:46

Client Sample ID: Trip Blank
Lab Sample ID: 310-293758-5
Date Collected: 10/25/24 00:00
Matrix: Water
Date Received: 10/25/24 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	438053	WSE8	EET CF	10/30/24 18:51

Lab Chronicle

Client: AECOM
Job ID: 310-293758-1
Project/Site: Black Hawk County Landfill (IDNR)

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Accreditation/Certification Summary

Client: AECOM
Job ID: 310-293758-1
Project/Site: Black Hawk County Landfill (IDNR)

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8260D		Ground Water	m,p-Xylene
8260D		Ground Water	o-Xylene
8260D		Water	1,2,4-Trichlorobenzene
8260D		Water	Allyl chloride
8260D		Water	Ethyl methacrylate
8260D		Water	m,p-Xylene
8260D		Water	o-Xylene
Field Sampling		Water	Field Turbidity

Method Summary

Client: AECOM
Job ID: 310-293758-1
Project/Site: Black Hawk County Landfill (IDNR)

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
Field Sampling	Field Sampling	EPA	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
5030B	Purge and Trap	SW846	EET CF

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

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310-293758 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: AECOM

City/State: CITY | STATE | Project:

Receipt Information

Date/Time Received: DATE 10.25.24 | TIME 1600 | Received By: CGC

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☑ Lab Courier (CGC) ☐ Lab Field Services ☑ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☑ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☐ Yes ☑ No *If yes:* Cooler # _____ of _____

Cooler Custody Seals Present? ☐ Yes ☑ No *If yes:* Cooler custody seals intact? ☐ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☑ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? HCl ☑ Yes ☐ No *If yes:* Which VOA samples are in cooler? ↓

All

Temperature Record

Coolant: ☑ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: P | Correction Factor (°C): 0

• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 0.3 | Corrected Temp (°C): C 3

• Sample Container Temperature

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

Eurofins Cedar Falls
3019 Venture Way

Cedar Falls, IA 50613
phone 319 277.2401 fax 319.277 2425

Chain of Custody Record

eurofins | Environment Testing America

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other IDNR

Eurofins Environment Testing America

Client Contact	**Project Manager: Chris Oelkers**		COC No
AECOM	Email Christopher Oelkers@aecom.com	**Site Contact:**	**Date:** 10-25-24	1 of 2 COCs
501 Sycamore Street, Suite 222	**Tel/Fax:319-296-6878**	**Lab Contact:**	**Carrier:**	TALS Project #
Waterloo, IA 50703	**Analysis Turnaround Time**			Sampler
(319) 232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS			**For Lab Use Only:**
(xxx) xxx-xxxx FAX	TAT if different from Below ____			Walk-in Client:
Project Name Black Hawk Co IDNR	☑ 2 weeks			Lab Sampling
Site Black Hawk County Landfill	☐ 1 week			Job / SDG No
P O #	☐ 2 days			
	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	Appendix I, TSS	Appendix II, TSS	2,4-D	4,4'-DDD	beta-BHC	delta BHC	Endosulfan I	Endosulfan sulfate	Endrin aldehyde	Silvex	Sulfide	Sample Specific Notes
MW-603B			G	GW		N		X											
MW-604B			G	GW		N		X											
MW-709B			G	GW		N		X											
MW-710B			G	GW		N		X											
MW-711B			G	GW		N		X											
MW-712B	10-25-24	1300	G	GW	5	N		X											Turbidity – 5.79 NTU
GUE-2			G	GW		N		X											
GUW1-1			G	GW		N		X											
GUW1-1-FD			G	GW		N		X											
GUW2-1			G	GW		N		X											
Equipment Blank-2	10-25-24	1200	G	GW	5	N		X											

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for ____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No | Cooler Temp. (°C) Obs'd.____ Corr'd.____ Therm ID No.____

Relinquished by: Ben Porter	Company: Aecom	Date/Time 10-25-24	Received by:	Company:	Date/Time 10-25-24 1600
Relinquished by:	Company:	Date/Time	Received by:	Company:	Date/Time
Relinquished by:	Company:	Date/Time	Received in Laboratory by:	Company:	Date/Time

Eurofins Cedar Falls
3019 Venture Way

Cedar Falls, IA 50613
phone 319.277.2401 fax 319.277 2425

Chain of Custody Record

eurofins Environment Testing America

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other IDNR

Eurofins Environment Testing America

Client Contact	Project Manager: Chris Oelkers	Site Contact:	Date: 10-25-24	COC No
AECOM	Email Christopher Oelkers@aecom com	Lab Contact:	Carrier:	2 of 2 COCs
501 Sycamore Street, Suite 222	Tel/Fax:319-296-6878			TALS Project #
Waterloo, IA 50703	Analysis Turnaround Time			Sampler
(319) 232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(xxx) xxx-xxxx FAX	TAT if different from Below _____			Walk-in Client:
Project Name Black Hawk Co IDNR	☑ 2 weeks			Lab Sampling.
Site Black Hawk County Landfill	☐ 1 week			Job / SDG No
P O #	☐ 2 days			
	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Appendix I, TSS	Appendix II, TSS	2,4-D	4,4'-DDD	beta-BHC	delta BHC	Endosulfan I	Endosulfan sulfate	Endrin aldehyde	Silvex	Sulfide	2,4,5-T	Bis(2-ethylhexyl)phthalate	Sample Specific Notes
OW-401B			G	GW		N		X		X		X	X		X	X	X	X			
OW-402B			G	GW		N		X		X		X			X		X	X	X	X	
MW-409B	10-25-24	1130	G	GW	5	N		X													Turbidity - 3.88 NTU
MW-409B-FD	10-25-24	1130	G	GW	5	N		X													
OW-413B			G	GW		N		X													
MW-501B			G	GW		N		X													
MW-602B			G	GW		N		X													
[redacted] Trip Blank	10-25-24	0600	G	W	3	N		X													

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No	Cooler Temp (°C) Obs'd _____ Corr'd. _____	Therm ID No. _____

Relinquished by	Company	Date/Time	Received by:	Company	Date/Time
1 Ben Porter	Aecom	10-25-24			10/25/24 1610
Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Relinquished by	Company	Date/Time	Received in Laboratory by	Company	Date/Time

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-293758-1

Login Number: 293758

List Number: 1

Creator: Hirsch, Preston

List Source: Eurofins Cedar Falls

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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1 2 3 4 5 6 7 8 9 10 11 12 13 14

ANALYTICAL REPORT

PREPARED FOR

Attn: Chris Oelkers
AECOM
501 Sycamore Street
Suite #222
Waterloo, Iowa 50703

Generated 11/7/2024 9:03:45 PM

JOB DESCRIPTION

Black Hawk County Landfill (IDNR)
Fall 2024

JOB NUMBER

310-294219-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

my EOL

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



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11/7/2024 9:03:45 PM

Authorized for release by
Zach Bindert, Senior Project Manager
Zach.Bindert@et.eurofinsus.com
(319)595-2016

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Job ID: 310-294219-1 — Eurofins Cedar Falls

Job Narrative
310-294219-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 11/1/2024 11:00 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 5.5°C.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Sample Summary

Client: AECOM
Job ID: 310-294219-1
Project/Site: Black Hawk County Landfill (IDNR)

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-294219-1	OW-226B	Water	11/01/24 10:00	11/01/24 11:00
310-294219-2	OW-227B	Water	11/01/24 10:30	11/01/24 11:00

Detection Summary

Client: AECOM
Job ID: 310-294219-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-226B
Lab Sample ID: 310-294219-1

No Detections.

Client Sample ID: OW-227B
Lab Sample ID: 310-294219-2

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: AECOM
Job ID: 310-294219-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-226B
Lab Sample ID: 310-294219-1
Date Collected: 11/01/24 10:00
Matrix: Water
Date Received: 11/01/24 11:00

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide (SW846 9034)	<1.41		3.00	1.41	mg/L		11/07/24 08:57	11/07/24 11:32	1

Client: AECOM
Job ID: 310-294219-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-227B
Lab Sample ID: 310-294219-2
Date Collected: 11/01/24 10:30
Matrix: Water
Date Received: 11/01/24 11:00

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide (SW846 9034)	<1.41		3.00	1.41	mg/L		11/07/24 08:57	11/07/24 11:32	1

Definitions/Glossary

Client: AECOM
Job ID: 310-294219-1
Project/Site: Black Hawk County Landfill (IDNR)

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Client: AECOM
Job ID: 310-294219-1
Project/Site: Black Hawk County Landfill (IDNR)

Method: 9034 - Sulfide, Acid soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 240-634309/1-A
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 634374
Prep Batch: 634309

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.41		3.00	1.41	mg/L		11/07/24 08:57	11/07/24 11:32	1

Lab Sample ID: LCS 240-634309/2-A
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 634374
Prep Batch: 634309

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Sulfide			7.87	7.467		mg/L		95	70 - 120		

QC Association Summary

Client: AECOM
Job ID: 310-294219-1
Project/Site: Black Hawk County Landfill (IDNR)

General Chemistry

Prep Batch: 634309

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-294219-1	OW-226B	Total/NA	Water	9030B	
310-294219-2	OW-227B	Total/NA	Water	9030B	
MB 240-634309/1-A	Method Blank	Total/NA	Water	9030B	
LCS 240-634309/2-A	Lab Control Sample	Total/NA	Water	9030B	

Analysis Batch: 634374

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-294219-1	OW-226B	Total/NA	Water	9034	634309
310-294219-2	OW-227B	Total/NA	Water	9034	634309
MB 240-634309/1-A	Method Blank	Total/NA	Water	9034	634309
LCS 240-634309/2-A	Lab Control Sample	Total/NA	Water	9034	634309

Lab Chronicle

Client: AECOM
Job ID: 310-294219-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-226B
Lab Sample ID: 310-294219-1
Date Collected: 11/01/24 10:00
Matrix: Water
Date Received: 11/01/24 11:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	9030B			634309	C5SV	EET CLE	11/07/24 08:57
Total/NA	Analysis	9034		1	634374	C5SV	EET CLE	11/07/24 11:32

Client Sample ID: OW-227B
Lab Sample ID: 310-294219-2
Date Collected: 11/01/24 10:30
Matrix: Water
Date Received: 11/01/24 11:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	9030B			634309	C5SV	EET CLE	11/07/24 08:57
Total/NA	Analysis	9034		1	634374	C5SV	EET CLE	11/07/24 11:32

Laboratory References:

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Accreditation/Certification Summary

Client: AECOM
Job ID: 310-294219-1
Project/Site: Black Hawk County Landfill (IDNR)

Laboratory: Eurofins Cleveland

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Iowa	State	421	06-01-25

Method Summary

Client: AECOM
Job ID: 310-294219-1
Project/Site: Black Hawk County Landfill (IDNR)

Method	Method Description	Protocol	Laboratory
9034	Sulfide, Acid soluble and Insoluble (Titrimetric)	SW846	EET CLE
9030B	Sulfide, Distillation (Acid Soluble and Insoluble)	SW846	EET CLE

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

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310-294219 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: Arcadis

City/State: CITY | STATE | Project:

Receipt Information

Date/Time Received: DATE 10-2-11-1-24 | TIME 1100 | Received By: CE

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☐ Lab Courier ☐ Lab Field Services ☒ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☒ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☐ Yes ☒ No *If yes:* Cooler # _____ of _____

Cooler Custody Seals Present? ☐ Yes ☐ No *If yes:* Cooler custody seals intact? ☐ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☐ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☐ Yes ☐ No *If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: U | Correction Factor (°C):

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): | Corrected Temp (°C):

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:	500 plastic	
Uncorrected Temp (°C):	5.5	
Corrected Temp (°C):	5.5	

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE. If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

Eurofins Cedar Falls
3019 Venture Way

Cedar Falls, IA 50613
phone 319.277.2401 fax 319.277 2425

Chain of Custody Record

eurofins Environment Testing America

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other IDNR

Eurofins Environment Testing America

Client Contact	**Project Manager: Chris Oelkers**	COC No 1 of 1 COCs
AECOM	Email Christopher Oelkers@aecom com	**Site Contact:** / **Date:** 11-1-24
501 Sycamore Street, Suite 222	**Tel/Fax:319-296-6878**	**Lab Contact:** / **Carrier:**
Waterloo, IA 50703	**Analysis Turnaround Time**	TALS Project #
(319) 232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS	Sampler
(xxx) xxx-xxxx FAX	TAT if different from Below	**For Lab Use Only:**
Project Name Black Hawk Co IDNR	☑ 2 weeks	Walk-in Client:
Site Black Hawk County Landfill	☐ 1 week	Lab Sampling
P O #	☐ 2 days	Job / SDG No
	☐ 1 day	

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Appendix I, TSS	Appendix II, TSS	2,4-D	4,4'-DDD	beta-BHC	delta BHC	Endosulfan I	Endosulfan sulfate	Endrin aldehyde	Silvex	Sulfide	Sample Specific Notes
OW-220B			G	GW		N		X		X							X		
OW-221B			G	GW		N		X											
OW-222B			G	GW		N		X											
OW-223B			G	GW		N		X											
OW-223B-FD			G	GW		N		X											
OW-224B			G	GW		N			X										
OW-225B			G	GW		N			X										
OW-226B	11-1-24	1000	G	GW	1	N												X	
OW-227B	11-1-24	1030	G	GW	1	N												X	
MW-319B			G	GW		N		X											
MW-320B			G	GW		N		X											
Equipment Blank-1			G	GW		N		X											

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No		Cooler Temp (°C) Obs'd. _____ Corr'd _____		Therm ID No. _____
Relinquished by: Ben Porter	Company: Accom	Date/Time: 11-1-24	Received by:	Company:	Date/Time
Relinquished by:	Company:	Date/Time	Received by:	Company:	Date/Time.
Relinquished by:	Company:	Date/Time	Received in Laboratory by: JH	Company:	Date/Time 11-1-24 1100

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11/7/2024

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone: 319-277-2401 Fax: 319-277-2425

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler: N/A	Lab PM: Bindert, Zach T	Carrier Tracking No(s): N/A	COC No: 310-77962.1
Client Contact: Shipping/Receiving	Phone: N/A	E-Mail: Zach.Bindert@et.eurofinsus.com	State of Origin: Iowa	Page: Page 1 of 1
Company: Eurofins Environment Testing North Centr		Accreditations Required (See note): State - Iowa; State Program - Iowa		Job #: 310-294219-1
Address: 180 S. Van Buren Avenue, .	Due Date Requested: 11/14/2024			
City: Barberton	TAT Requested (days): N/A			
State, Zip: OH, 44203				
Phone: 330-497-9396(Tel) 330-497-0772(Fax)	PO #: N/A			
Email: N/A	WO #: N/A			
Project Name: Black Hawk County Landfill (IDNR)	Project #: 31017149			
Site: 310 - Black Hawk County (IDNR)	SSOW#: N/A			

Analysis Requested

Preservation Codes: -

Other: N/A

GOES

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9034_Calc/9030B Sulfide	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
OW-226B (310-294219-1)	11/1/24	10:00 Central	G	Water			X	1	
OW-227B (310-294219-2)	11/1/24	10:30 Central	G	Water			X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing North Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing North Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing North Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing North Central, LLC.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	11/1/24 1545		S Collins	11-2-24 9:30	CUS
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ∆ Yes ∆ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Eurofins – Cleveland Sample Receipt Form/Narrative **Login # :**
Barberton Facility

Client Shipping/Receiving Site Name

Cooler unpacked by: JC

Cooler Received on 11-2-24 Opened on 11-2-24

FedEx· 1st Grd (Exp) UPS FAS Waypoint Client Drop Off Eurofins Courier Other

Receipt After-hours Drop-off Date/Time Storage Location

Eurofins Cooler # EC Foam Box Client Cooler Box Other

Packing material used: Bubble Wrap Foam (Plastic Bag) None Other

COOLANT (Wet Ice) Blue Ice Dry Ice Water None

1 Cooler temperature upon receipt ☐ See Multiple Cooler Form

IR GUN # 17 (CF +0.1 °C) Observed Cooler Temp: 2.8 °C Corrected Cooler Temp: 2.9 °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity	(Yes)	No
-Were the seals on the outside of the cooler(s) signed & dated?	Yes	(No) NA
-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)?	Yes	(No)
-Were tamper/custody seals intact and uncompromised?	(Yes)	No NA
3 Shippers' packing slip attached to the cooler(s)?	(Yes)	No
4. Did custody papers accompany the sample(s)?	(Yes)	No
5 Were the custody papers relinquished & signed in the appropriate place?	(Yes)	No
6. Was/were the person(s) who collected the samples clearly identified on the COC?	Yes	(No)
7 Did all bottles arrive in good condition (Unbroken)?	(Yes)	No
8 Could all bottle labels (ID/Date/Time) be reconciled with the COC?	(Yes)	No
9 For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)?	(Y)	(Y) (Y)
10 Were correct bottle(s) used for the test(s) indicated?	(Yes)	No
11 Sufficient quantity received to perform indicated analyses?	(Yes)	No
12. Are these work share samples and all listed on the COC?	(Yes)	No
If yes, Questions 13-17 have been checked at the originating laboratory		
13 Were all preserved sample(s) at the correct pH upon receipt?	Yes	No NA pH Strip Lot# HC447997
14 Were VOAs on the COC?	Yes	No
15 Were air bubbles >6 mm in any VOA vials? ● ← Larger than this.	Yes	No NA
16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot #	Yes	No
17 Was a LL Hg or Me Hg trip blank present?	Yes	No

Tests that are not checked for pH by Receiving:

VOAs
Oil and Grease
TOC

Contacted PM Date by via Verbal Voice Mail Other

Concerning

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES ☐ additional next page

Samples processed by:

19. SAMPLE CONDITION

Sample(s) were received after the recommended holding time had expired.

Sample(s) were received in a broken container

Sample(s) were received with bubble >6 mm in diameter (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) were further preserved in the laboratory

Time preserved. Preservative(s) added/Lot number(s)

VOA Sample Preservation - Date/Time VOAs Frozen.

ORIGIN ID ALOA (319) 277-2401
SAMPLE RECEIVING
EUROFINS TESTAMERICA
3019 VENTURE WAY

CEDAR FALLS, IA 60613
UNITED STATES US

SHIP DATE 01NOV24
ACTWGT 9.55 LB
CAD 0870970/CAFE3855

BILL SENDER

TO SHIPPING/RECEIVING
EUROFINS ENVIRONMENT TESTING NORTH
180 S. VAN BUREN AVENUE

BARBERTON OH 44203
(330) 497-9396
REF S310-100001

FedEx Express

SATURDAY 12:00P
PRIORITY OVERNIGHT

TRK# 0201 4085 8613 7012

XO CAKA

44203
OH-US CLE

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-294219-1

Login Number: 294219

List Source: Eurofins Cedar Falls

List Number: 1

Creator: Hirsch, Preston

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

ANALYTICAL REPORT

PREPARED FOR

Attn: Chris Oelkers
AECOM
501 Sycamore Street
Suite #222
Waterloo, Iowa 50703

Generated 11/11/2024 8:58:31 AM

JOB DESCRIPTION

Black Hawk County Landfill (IDNR)
Fall 2024

JOB NUMBER

310-293886-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

myEOL

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



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Authorized for release by
Zach Bindert, Senior Project Manager
Zach.Bindert@et.eurofinsus.com
(319)595-2016

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Job ID: 310-293886-1 — Eurofins Cedar Falls

Job Narrative
310-293886-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 10/29/2024 9:25 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.5°C.

GC/MS VOA
Method 8260D: The method requirement for no headspace was not met. The following volatile sample was analyzed with headspace in the sample container(s): Trip Blank (310-293886-3).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Field Service / Mobile Lab
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Sample Summary

Client: AECOM
Job ID: 310-293886-1
Project/Site: Black Hawk County Landfill (IDNR)

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-293886-1	P-604C	Water	10/28/24 14:00	10/29/24 09:25
310-293886-2	P-703C	Water	10/28/24 11:00	10/29/24 09:25
310-293886-3	Trip Blank	Water	10/28/24 06:00	10/29/24 09:25

Detection Summary

Client: AECOM
Job ID: 310-293886-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: P-604C — Lab Sample ID: 310-293886-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	14.7		2.00	0.660	ug/L	1		6020B	Total/NA
Cadmium	0.193	J	0.200	0.100	ug/L	1		6020B	Total/NA
Chromium	1.65	J	5.00	1.20	ug/L	1		6020B	Total/NA
Nickel	9.04		5.00	2.10	ug/L	1		6020B	Total/NA
Total Suspended Solids	6.63		1.88	1.39	mg/L	1		I-3765-85	Total/NA
Field Turbidity	1.31				NTU	1		Field Sampling	Total/NA

Client Sample ID: P-703C — Lab Sample ID: 310-293886-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	1.02	J	2.00	0.530	ug/L	1		6020B	Total/NA
Barium	81.2		2.00	0.660	ug/L	1		6020B	Total/NA
Cobalt	0.612		0.500	0.170	ug/L	1		6020B	Total/NA
Total Suspended Solids	2.38		1.88	1.39	mg/L	1		I-3765-85	Total/NA
Field Turbidity	4.11				NTU	1		Field Sampling	Total/NA

Client Sample ID: Trip Blank — Lab Sample ID: 310-293886-3

No Detections.

This Detection Summary does not include radiochemical test results.

Client: AECOM
Job ID: 310-293886-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: P-604C
Lab Sample ID: 310-293886-1
Date Collected: 10/28/24 14:00
Matrix: Water
Date Received: 10/29/24 09:25

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			10/31/24 13:51	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			10/31/24 13:51	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			10/31/24 13:51	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			10/31/24 13:51	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			10/31/24 13:51	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			10/31/24 13:51	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			10/31/24 13:51	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			10/31/24 13:51	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			10/31/24 13:51	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			10/31/24 13:51	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			10/31/24 13:51	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			10/31/24 13:51	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			10/31/24 13:51	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			10/31/24 13:51	1
2-Hexanone	<2.00		10.0	2.00	ug/L			10/31/24 13:51	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			10/31/24 13:51	1
Acetone	<3.10		10.0	3.10	ug/L			10/31/24 13:51	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			10/31/24 13:51	1
Benzene	<0.220		0.500	0.220	ug/L			10/31/24 13:51	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			10/31/24 13:51	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			10/31/24 13:51	1
Bromoform	<0.780		5.00	0.780	ug/L			10/31/24 13:51	1
Bromomethane	<1.10		4.00	1.10	ug/L			10/31/24 13:51	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			10/31/24 13:51	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			10/31/24 13:51	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			10/31/24 13:51	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			10/31/24 13:51	1
Chloroethane	<0.790		4.00	0.790	ug/L			10/31/24 13:51	1
Chloroform	<1.30		3.00	1.30	ug/L			10/31/24 13:51	1
Chloromethane	<0.610		3.00	0.610	ug/L			10/31/24 13:51	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			10/31/24 13:51	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			10/31/24 13:51	1
Dibromomethane	<0.330		1.00	0.330	ug/L			10/31/24 13:51	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			10/31/24 13:51	1
Iodomethane	<7.00		10.0	7.00	ug/L			10/31/24 13:51	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			10/31/24 13:51	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			10/31/24 13:51	1
o-Xylene	<0.400		1.00	0.400	ug/L			10/31/24 13:51	1
Styrene	<0.370		1.00	0.370	ug/L			10/31/24 13:51	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			10/31/24 13:51	1
Toluene	<0.430		1.00	0.430	ug/L			10/31/24 13:51	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			10/31/24 13:51	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			10/31/24 13:51	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			10/31/24 13:51	1
Trichloroethene	<0.430		1.00	0.430	ug/L			10/31/24 13:51	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			10/31/24 13:51	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			10/31/24 13:51	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			10/31/24 13:51	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			10/31/24 13:51	1

Client: AECOM
Job ID: 310-293886-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: P-604C
Lab Sample ID: 310-293886-1
Date Collected: 10/28/24 14:00
Matrix: Water
Date Received: 10/29/24 09:25

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*112*		*73 - 130*		*10/31/24 13:51*	*1*
Toluene-d8 (Surr)	*95*		*80 - 120*		*10/31/24 13:51*	*1*
4-Bromofluorobenzene (Surr)	*105*		*80 - 120*		*10/31/24 13:51*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		11/08/24 09:30	11/08/24 18:06	1
Arsenic	<0.530		2.00	0.530	ug/L		11/08/24 09:30	11/08/24 18:06	1
Barium	**14.7**		2.00	0.660	ug/L		11/08/24 09:30	11/08/24 18:06	1
Beryllium	<0.330		1.00	0.330	ug/L		11/08/24 09:30	11/08/24 18:06	1
Cadmium	**0.193**	**J**	0.200	0.100	ug/L		11/08/24 09:30	11/08/24 18:06	1
Chromium	**1.65**	**J**	5.00	1.20	ug/L		11/08/24 09:30	11/08/24 18:06	1
Cobalt	<0.170		0.500	0.170	ug/L		11/08/24 09:30	11/08/24 18:06	1
Copper	<1.80		5.00	1.80	ug/L		11/08/24 09:30	11/08/24 18:06	1
Lead	<0.260		0.500	0.260	ug/L		11/08/24 09:30	11/08/24 18:06	1
Nickel	**9.04**		5.00	2.10	ug/L		11/08/24 09:30	11/08/24 18:06	1
Selenium	<1.40		5.00	1.40	ug/L		11/08/24 09:30	11/08/24 18:06	1
Silver	<0.500		1.00	0.500	ug/L		11/08/24 09:30	11/08/24 18:06	1
Thallium	<0.570		1.00	0.570	ug/L		11/08/24 09:30	11/08/24 18:06	1
Vanadium	<1.10		5.00	1.10	ug/L		11/08/24 09:30	11/08/24 18:06	1
Zinc	<9.70		20.0	9.70	ug/L		11/08/24 09:30	11/08/24 18:06	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**6.63**		1.88	1.39	mg/L			10/31/24 12:07	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**1.31**				NTU			10/28/24 14:00	1

Client: AECOM
Job ID: 310-293886-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: P-703C
Lab Sample ID: 310-293886-2
Date Collected: 10/28/24 11:00
Matrix: Water
Date Received: 10/29/24 09:25

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			10/31/24 14:13	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			10/31/24 14:13	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			10/31/24 14:13	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			10/31/24 14:13	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			10/31/24 14:13	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			10/31/24 14:13	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			10/31/24 14:13	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			10/31/24 14:13	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			10/31/24 14:13	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			10/31/24 14:13	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			10/31/24 14:13	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			10/31/24 14:13	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			10/31/24 14:13	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			10/31/24 14:13	1
2-Hexanone	<2.00		10.0	2.00	ug/L			10/31/24 14:13	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			10/31/24 14:13	1
Acetone	<3.10		10.0	3.10	ug/L			10/31/24 14:13	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			10/31/24 14:13	1
Benzene	<0.220		0.500	0.220	ug/L			10/31/24 14:13	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			10/31/24 14:13	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			10/31/24 14:13	1
Bromoform	<0.780		5.00	0.780	ug/L			10/31/24 14:13	1
Bromomethane	<1.10		4.00	1.10	ug/L			10/31/24 14:13	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			10/31/24 14:13	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			10/31/24 14:13	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			10/31/24 14:13	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			10/31/24 14:13	1
Chloroethane	<0.790		4.00	0.790	ug/L			10/31/24 14:13	1
Chloroform	<1.30		3.00	1.30	ug/L			10/31/24 14:13	1
Chloromethane	<0.610		3.00	0.610	ug/L			10/31/24 14:13	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			10/31/24 14:13	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			10/31/24 14:13	1
Dibromomethane	<0.330		1.00	0.330	ug/L			10/31/24 14:13	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			10/31/24 14:13	1
Iodomethane	<7.00		10.0	7.00	ug/L			10/31/24 14:13	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			10/31/24 14:13	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			10/31/24 14:13	1
o-Xylene	<0.400		1.00	0.400	ug/L			10/31/24 14:13	1
Styrene	<0.370		1.00	0.370	ug/L			10/31/24 14:13	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			10/31/24 14:13	1
Toluene	<0.430		1.00	0.430	ug/L			10/31/24 14:13	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			10/31/24 14:13	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			10/31/24 14:13	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			10/31/24 14:13	1
Trichloroethene	<0.430		1.00	0.430	ug/L			10/31/24 14:13	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			10/31/24 14:13	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			10/31/24 14:13	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			10/31/24 14:13	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			10/31/24 14:13	1

Client: AECOM
Job ID: 310-293886-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: P-703C
Date Collected: 10/28/24 11:00
Date Received: 10/29/24 09:25

Lab Sample ID: 310-293886-2
Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*112*		*73 - 130*		*10/31/24 14:13*	*1*
Toluene-d8 (Surr)	*95*		*80 - 120*		*10/31/24 14:13*	*1*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*		*10/31/24 14:13*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		11/08/24 09:30	11/08/24 18:31	1
Arsenic	**1.02**	**J**	2.00	0.530	ug/L		11/08/24 09:30	11/08/24 18:31	1
Barium	**81.2**		2.00	0.660	ug/L		11/08/24 09:30	11/08/24 18:31	1
Beryllium	<0.330		1.00	0.330	ug/L		11/08/24 09:30	11/08/24 18:31	1
Cadmium	<0.100		0.200	0.100	ug/L		11/08/24 09:30	11/08/24 18:31	1
Chromium	<1.20		5.00	1.20	ug/L		11/08/24 09:30	11/08/24 18:31	1
Cobalt	**0.612**		0.500	0.170	ug/L		11/08/24 09:30	11/08/24 18:31	1
Copper	<1.80		5.00	1.80	ug/L		11/08/24 09:30	11/08/24 18:31	1
Lead	<0.260		0.500	0.260	ug/L		11/08/24 09:30	11/08/24 18:31	1
Nickel	<2.10		5.00	2.10	ug/L		11/08/24 09:30	11/08/24 18:31	1
Selenium	<1.40		5.00	1.40	ug/L		11/08/24 09:30	11/08/24 18:31	1
Silver	<0.500		1.00	0.500	ug/L		11/08/24 09:30	11/08/24 18:31	1
Thallium	<0.570		1.00	0.570	ug/L		11/08/24 09:30	11/08/24 18:31	1
Vanadium	<1.10		5.00	1.10	ug/L		11/08/24 09:30	11/08/24 18:31	1
Zinc	<9.70		20.0	9.70	ug/L		11/08/24 09:30	11/08/24 18:31	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**2.38**		1.88	1.39	mg/L			10/31/24 06:46	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**4.11**				NTU			10/28/24 11:00	1

Client: AECOM
Job ID: 310-293886-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Trip Blank
Lab Sample ID: 310-293886-3
Date Collected: 10/28/24 06:00
Matrix: Water
Date Received: 10/29/24 09:25

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			10/31/24 12:24	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			10/31/24 12:24	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			10/31/24 12:24	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			10/31/24 12:24	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			10/31/24 12:24	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			10/31/24 12:24	1
1,1-Dichloropropene	<0.430		1.00	0.430	ug/L			10/31/24 12:24	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			10/31/24 12:24	1
1,2,4-Trichlorobenzene	<0.750		5.00	0.750	ug/L			10/31/24 12:24	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			10/31/24 12:24	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			10/31/24 12:24	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			10/31/24 12:24	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			10/31/24 12:24	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			10/31/24 12:24	1
1,3-Dichlorobenzene	<0.300		1.00	0.300	ug/L			10/31/24 12:24	1
1,3-Dichloropropane	<0.400		1.00	0.400	ug/L			10/31/24 12:24	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			10/31/24 12:24	1
2,2-Dichloropropane	<0.690		4.00	0.690	ug/L			10/31/24 12:24	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			10/31/24 12:24	1
2-Hexanone	<2.00		10.0	2.00	ug/L			10/31/24 12:24	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			10/31/24 12:24	1
Acetone	<3.10		10.0	3.10	ug/L			10/31/24 12:24	1
Acrolein	<3.60		10.0	3.60	ug/L			10/31/24 12:24	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			10/31/24 12:24	1
Allyl chloride	<0.700		2.00	0.700	ug/L			10/31/24 12:24	1
Benzene	<0.220		0.500	0.220	ug/L			10/31/24 12:24	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			10/31/24 12:24	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			10/31/24 12:24	1
Bromoform	<0.780		5.00	0.780	ug/L			10/31/24 12:24	1
Bromomethane	<1.10		4.00	1.10	ug/L			10/31/24 12:24	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			10/31/24 12:24	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			10/31/24 12:24	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			10/31/24 12:24	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			10/31/24 12:24	1
Chloroethane	<0.790		4.00	0.790	ug/L			10/31/24 12:24	1
Chloroform	<1.30		3.00	1.30	ug/L			10/31/24 12:24	1
Chloromethane	<0.610		3.00	0.610	ug/L			10/31/24 12:24	1
Chloroprene	<0.230		1.00	0.230	ug/L			10/31/24 12:24	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			10/31/24 12:24	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			10/31/24 12:24	1
Dibromomethane	<0.330		1.00	0.330	ug/L			10/31/24 12:24	1
Dichlorodifluoromethane	<0.250		3.00	0.250	ug/L			10/31/24 12:24	1
Ethyl methacrylate	<0.680		2.00	0.680	ug/L			10/31/24 12:24	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			10/31/24 12:24	1
Iodomethane	<7.00		10.0	7.00	ug/L			10/31/24 12:24	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			10/31/24 12:24	1
Methacrylonitrile	<3.30		10.0	3.30	ug/L			10/31/24 12:24	1
Methyl methacrylate	<0.760		2.00	0.760	ug/L			10/31/24 12:24	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			10/31/24 12:24	1

Client: AECOM
Job ID: 310-293886-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Trip Blank
Lab Sample ID: 310-293886-3
Date Collected: 10/28/24 06:00
Matrix: Water
Date Received: 10/29/24 09:25

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<3.00		5.00	3.00	ug/L			10/31/24 12:24	1
o-Xylene	<0.400		1.00	0.400	ug/L			10/31/24 12:24	1
Propionitrile	<3.40		10.0	3.40	ug/L			10/31/24 12:24	1
Styrene	<0.370		1.00	0.370	ug/L			10/31/24 12:24	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			10/31/24 12:24	1
Toluene	<0.430		1.00	0.430	ug/L			10/31/24 12:24	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			10/31/24 12:24	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			10/31/24 12:24	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			10/31/24 12:24	1
Trichloroethene	<0.430		1.00	0.430	ug/L			10/31/24 12:24	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			10/31/24 12:24	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			10/31/24 12:24	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			10/31/24 12:24	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			10/31/24 12:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*117*		*73 - 130*		*10/31/24 12:24*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*10/31/24 12:24*	*1*
4-Bromofluorobenzene (Surr)	*106*		*80 - 120*		*10/31/24 12:24*	*1*

Definitions/Glossary

Client: AECOM
Job ID: 310-293886-1
Project/Site: Black Hawk County Landfill (IDNR)

Qualifiers

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Surrogate Summary

Client: AECOM
Job ID: 310-293886-1
Project/Site: Black Hawk County Landfill (IDNR)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)							
		DBFM	TOL	BFB					
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)					
310-293886-1	P-604C	112	95	105					
310-293886-2	P-703C	112	95	103					
310-293886-3	Trip Blank	117	97	106					
LCS 310-438192/6	Lab Control Sample	99	100	101					
LCS 310-438192/7	Lab Control Sample	110	94	104					
MB 310-438192/5	Method Blank	112	98	105					

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)

TOL = Toluene-d8 (Surr)

BFB = 4-Bromofluorobenzene (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 310-438192/5
Matrix: Water
Analysis Batch: 438192

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			10/31/24 09:52	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			10/31/24 09:52	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			10/31/24 09:52	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			10/31/24 09:52	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			10/31/24 09:52	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			10/31/24 09:52	1
1,1-Dichloropropene	<0.430		1.00	0.430	ug/L			10/31/24 09:52	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			10/31/24 09:52	1
1,2,4-Trichlorobenzene	<0.750		5.00	0.750	ug/L			10/31/24 09:52	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			10/31/24 09:52	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			10/31/24 09:52	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			10/31/24 09:52	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			10/31/24 09:52	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			10/31/24 09:52	1
1,3-Dichlorobenzene	<0.300		1.00	0.300	ug/L			10/31/24 09:52	1
1,3-Dichloropropane	<0.400		1.00	0.400	ug/L			10/31/24 09:52	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			10/31/24 09:52	1
2,2-Dichloropropane	<0.690		4.00	0.690	ug/L			10/31/24 09:52	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			10/31/24 09:52	1
2-Hexanone	<2.00		10.0	2.00	ug/L			10/31/24 09:52	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			10/31/24 09:52	1
Acetone	<3.10		10.0	3.10	ug/L			10/31/24 09:52	1
Acrolein	<3.60		10.0	3.60	ug/L			10/31/24 09:52	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			10/31/24 09:52	1
Allyl chloride	<0.700		2.00	0.700	ug/L			10/31/24 09:52	1
Benzene	<0.220		0.500	0.220	ug/L			10/31/24 09:52	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			10/31/24 09:52	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			10/31/24 09:52	1
Bromoform	<0.780		5.00	0.780	ug/L			10/31/24 09:52	1
Bromomethane	<1.10		4.00	1.10	ug/L			10/31/24 09:52	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			10/31/24 09:52	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			10/31/24 09:52	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			10/31/24 09:52	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			10/31/24 09:52	1
Chloroethane	<0.790		4.00	0.790	ug/L			10/31/24 09:52	1
Chloroform	<1.30		3.00	1.30	ug/L			10/31/24 09:52	1
Chloromethane	<0.610		3.00	0.610	ug/L			10/31/24 09:52	1
Chloroprene	<0.230		1.00	0.230	ug/L			10/31/24 09:52	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			10/31/24 09:52	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			10/31/24 09:52	1
Dibromomethane	<0.330		1.00	0.330	ug/L			10/31/24 09:52	1
Dichlorodifluoromethane	<0.250		3.00	0.250	ug/L			10/31/24 09:52	1
Ethyl methacrylate	<0.680		2.00	0.680	ug/L			10/31/24 09:52	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			10/31/24 09:52	1
Iodomethane	<7.00		10.0	7.00	ug/L			10/31/24 09:52	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			10/31/24 09:52	1
Methacrylonitrile	<3.30		10.0	3.30	ug/L			10/31/24 09:52	1
Methyl methacrylate	<0.760		2.00	0.760	ug/L			10/31/24 09:52	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-438192/5
Matrix: Water
Analysis Batch: 438192

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylene Chloride	<1.70		5.00	1.70	ug/L			10/31/24 09:52	1
Naphthalene	<3.00		5.00	3.00	ug/L			10/31/24 09:52	1
o-Xylene	<0.400		1.00	0.400	ug/L			10/31/24 09:52	1
Propionitrile	<3.40		10.0	3.40	ug/L			10/31/24 09:52	1
Styrene	<0.370		1.00	0.370	ug/L			10/31/24 09:52	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			10/31/24 09:52	1
Toluene	<0.430		1.00	0.430	ug/L			10/31/24 09:52	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			10/31/24 09:52	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			10/31/24 09:52	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			10/31/24 09:52	1
Trichloroethene	<0.430		1.00	0.430	ug/L			10/31/24 09:52	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			10/31/24 09:52	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			10/31/24 09:52	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			10/31/24 09:52	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			10/31/24 09:52	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*112*		*73 - 130*		*10/31/24 09:52*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*10/31/24 09:52*	*1*
4-Bromofluorobenzene (Surr)	*105*		*80 - 120*		*10/31/24 09:52*	*1*

Lab Sample ID: LCS 310-438192/6
Matrix: Water
Analysis Batch: 438192

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	20.0	17.56		ug/L		88	71 - 120
1,1,1-Trichloroethane	20.0	16.66		ug/L		83	73 - 129
1,1,2,2-Tetrachloroethane	20.0	16.94		ug/L		85	68 - 124
1,1,2-Trichloroethane	20.0	17.86		ug/L		89	73 - 123
1,1-Dichloroethane	20.0	16.54		ug/L		83	70 - 127
1,1-Dichloroethene	20.0	16.59		ug/L		83	63 - 132
1,1-Dichloropropene	20.0	16.96		ug/L		85	69 - 132
1,2,3-Trichloropropane	20.0	18.43		ug/L		92	65 - 127
1,2,4-Trichlorobenzene	20.0	16.99		ug/L		85	68 - 124
1,2-Dibromo-3-Chloropropane	20.0	16.32		ug/L		82	50 - 150
1,2-Dibromoethane (EDB)	20.0	17.46		ug/L		87	75 - 125
1,2-Dichlorobenzene	20.0	16.33		ug/L		82	74 - 120
1,2-Dichloroethane	20.0	15.15		ug/L		76	71 - 125
1,2-Dichloropropane	20.0	18.15		ug/L		91	73 - 124
1,3-Dichlorobenzene	20.0	15.78		ug/L		79	72 - 120
1,3-Dichloropropane	20.0	17.66		ug/L		88	72 - 125
1,4-Dichlorobenzene	20.0	15.99		ug/L		80	72 - 120
2,2-Dichloropropane	20.0	16.32		ug/L		82	50 - 150
2-Butanone (MEK)	40.0	32.06		ug/L		80	50 - 150
2-Hexanone	40.0	38.98		ug/L		97	60 - 140
4-Methyl-2-pentanone (MIBK)	40.0	35.32		ug/L		88	60 - 139
Acetone	40.0	32.84		ug/L		82	50 - 150

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-438192/6
Matrix: Water
Analysis Batch: 438192

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Acrolein	95.5	88.61		ug/L		93	49 - 150
Acrylonitrile	200	169.5		ug/L		85	50 - 150
Allyl chloride	20.0	17.05		ug/L		85	49 - 150
Benzene	20.0	16.81		ug/L		84	72 - 124
Bromochloromethane	20.0	16.98		ug/L		85	73 - 130
Bromodichloromethane	20.0	15.76		ug/L		79	74 - 122
Bromoform	20.0	16.75		ug/L		84	61 - 122
Carbon disulfide	20.0	15.62		ug/L		78	59 - 135
Carbon tetrachloride	20.0	16.76		ug/L		84	67 - 132
Chlorobenzene	20.0	16.49		ug/L		82	76 - 120
Chlorodibromomethane	20.0	16.51		ug/L		83	71 - 121
Chloroform	20.0	16.14		ug/L		81	72 - 125
Chloroprene	20.0	17.57		ug/L		88	69 - 133
cis-1,2-Dichloroethene	20.0	16.56		ug/L		83	74 - 123
cis-1,3-Dichloropropene	20.0	17.82		ug/L		89	71 - 125
Dibromomethane	20.0	17.26		ug/L		86	74 - 125
Ethyl methacrylate	20.0	18.77		ug/L		94	70 - 129
Ethylbenzene	20.0	16.40		ug/L		82	74 - 122
Iodomethane	20.0	10.16		ug/L		51	10 - 150
Methacrylonitrile	200	169.3		ug/L		85	69 - 129
Methyl methacrylate	40.0	35.50		ug/L		89	68 - 131
Methylene Chloride	20.0	17.45		ug/L		87	50 - 150
Naphthalene	20.0	17.42		ug/L		87	50 - 150
Propionitrile	200	174.4		ug/L		87	63 - 135
Styrene	20.0	16.44		ug/L		82	74 - 121
Tetrachloroethene	20.0	16.99		ug/L		85	71 - 130
Toluene	20.0	16.73		ug/L		84	74 - 123
trans-1,2-Dichloroethene	20.0	15.95		ug/L		80	70 - 126
trans-1,3-Dichloropropene	20.0	17.22		ug/L		86	69 - 123
trans-1,4-Dichloro-2-butene	20.0	16.07		ug/L		80	50 - 150
Trichloroethene	20.0	16.91		ug/L		85	72 - 126
Vinyl acetate	40.0	29.84		ug/L		75	50 - 150
Xylenes, Total	40.0	33.16		ug/L		83	73 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*99*		*73 - 130*
Toluene-d8 (Surr)	*100*		*80 - 120*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*

Lab Sample ID: LCS 310-438192/7
Matrix: Water
Analysis Batch: 438192

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	15.11		ug/L		76	23 - 150
Chloroethane	20.0	17.46		ug/L		87	54 - 136
Chloromethane	20.0	17.25		ug/L		86	38 - 150
Dichlorodifluoromethane	20.0	17.25		ug/L		86	39 - 150

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-438192/7
Matrix: Water
Analysis Batch: 438192

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Trichlorofluoromethane	20.0	18.17		ug/L		91	54 - 149
Vinyl chloride	20.0	17.90		ug/L		89	56 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*110*		*73 - 130*
Toluene-d8 (Surr)	*94*		*80 - 120*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-439044/1-A
Matrix: Water
Analysis Batch: 439231

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 439044

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		11/08/24 09:30	11/08/24 18:00	1
Arsenic	<0.530		2.00	0.530	ug/L		11/08/24 09:30	11/08/24 18:00	1
Barium	<0.660		2.00	0.660	ug/L		11/08/24 09:30	11/08/24 18:00	1
Beryllium	<0.330		1.00	0.330	ug/L		11/08/24 09:30	11/08/24 18:00	1
Cadmium	<0.100		0.200	0.100	ug/L		11/08/24 09:30	11/08/24 18:00	1
Chromium	<1.20		5.00	1.20	ug/L		11/08/24 09:30	11/08/24 18:00	1
Cobalt	<0.170		0.500	0.170	ug/L		11/08/24 09:30	11/08/24 18:00	1
Copper	<1.80		5.00	1.80	ug/L		11/08/24 09:30	11/08/24 18:00	1
Lead	<0.260		0.500	0.260	ug/L		11/08/24 09:30	11/08/24 18:00	1
Nickel	<2.10		5.00	2.10	ug/L		11/08/24 09:30	11/08/24 18:00	1
Selenium	<1.40		5.00	1.40	ug/L		11/08/24 09:30	11/08/24 18:00	1
Silver	<0.500		1.00	0.500	ug/L		11/08/24 09:30	11/08/24 18:00	1
Thallium	<0.570		1.00	0.570	ug/L		11/08/24 09:30	11/08/24 18:00	1
Vanadium	<1.10		5.00	1.10	ug/L		11/08/24 09:30	11/08/24 18:00	1
Zinc	<9.70		20.0	9.70	ug/L		11/08/24 09:30	11/08/24 18:00	1

Lab Sample ID: LCS 310-439044/2-A
Matrix: Water
Analysis Batch: 439231

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 439044

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	200	192.1		ug/L		96	80 - 120
Arsenic	200	201.8		ug/L		101	80 - 120
Barium	100	99.65		ug/L		100	80 - 120
Beryllium	100	98.92		ug/L		99	80 - 120
Cadmium	100	95.80		ug/L		96	80 - 120
Chromium	100	101.6		ug/L		102	80 - 120
Cobalt	100	101.9		ug/L		102	80 - 120
Copper	200	205.5		ug/L		103	80 - 120
Lead	200	198.6		ug/L		99	80 - 120
Nickel	200	204.1		ug/L		102	80 - 120
Selenium	400	397.3		ug/L		99	80 - 120
Silver	100	110.1		ug/L		110	80 - 120
Thallium	100	111.3		ug/L		111	80 - 120

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 310-439044/2-A
Matrix: Water
Analysis Batch: 439231

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 439044

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Vanadium	100	101.6		ug/L		102	80 - 120
Zinc	200	192.9		ug/L		96	80 - 120

Lab Sample ID: 310-293886-1 MS
Matrix: Water
Analysis Batch: 439231

Client Sample ID: P-604C
Prep Type: Total/NA
Prep Batch: 439044

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	<1.00		200	206.7		ug/L		103	75 - 125
Arsenic	<0.530		200	204.9		ug/L		102	75 - 125
Barium	14.7		100	120.6		ug/L		106	75 - 125
Beryllium	<0.330		100	95.41		ug/L		95	75 - 125
Cadmium	0.193	J	100	98.38		ug/L		98	75 - 125
Chromium	1.65	J	100	100.7		ug/L		99	75 - 125
Cobalt	<0.170		100	96.03		ug/L		96	75 - 125
Copper	<1.80		200	189.0		ug/L		95	75 - 125
Lead	<0.260		200	201.7		ug/L		101	75 - 125
Nickel	9.04		200	198.4		ug/L		95	75 - 125
Selenium	<1.40		400	406.0		ug/L		102	75 - 125
Silver	<0.500		100	102.2		ug/L		102	75 - 125
Thallium	<0.570		100	106.4		ug/L		106	75 - 125
Vanadium	<1.10		100	101.2		ug/L		101	75 - 125
Zinc	<9.70		200	187.2		ug/L		94	75 - 125

Lab Sample ID: 310-293886-1 MSD
Matrix: Water
Analysis Batch: 439231

Client Sample ID: P-604C
Prep Type: Total/NA
Prep Batch: 439044

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Antimony	<1.00		200	207.3		ug/L		104	75 - 125	0	20
Arsenic	<0.530		200	211.1		ug/L		106	75 - 125	3	20
Barium	14.7		100	120.1		ug/L		105	75 - 125	0	20
Beryllium	<0.330		100	97.18		ug/L		97	75 - 125	2	20
Cadmium	0.193	J	100	99.17		ug/L		99	75 - 125	1	20
Chromium	1.65	J	100	103.2		ug/L		102	75 - 125	2	20
Cobalt	<0.170		100	98.20		ug/L		98	75 - 125	2	20
Copper	<1.80		200	193.6		ug/L		97	75 - 125	2	20
Lead	<0.260		200	204.0		ug/L		102	75 - 125	1	20
Nickel	9.04		200	205.1		ug/L		98	75 - 125	3	20
Selenium	<1.40		400	420.8		ug/L		105	75 - 125	4	20
Silver	<0.500		100	105.9		ug/L		106	75 - 125	4	20
Thallium	<0.570		100	107.5		ug/L		107	75 - 125	1	20
Vanadium	<1.10		100	102.9		ug/L		103	75 - 125	2	20
Zinc	<9.70		200	192.3		ug/L		96	75 - 125	3	20

Client: AECOM
Job ID: 310-293886-1
Project/Site: Black Hawk County Landfill (IDNR)

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: MB 310-438152/1
Matrix: Water
Analysis Batch: 438152

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<3.70		5.00	3.70	mg/L			10/31/24 06:46	1

Lab Sample ID: LCS 310-438152/2
Matrix: Water
Analysis Batch: 438152

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	102.0		mg/L		102	81 - 116

Lab Sample ID: MB 310-438235/1
Matrix: Water
Analysis Batch: 438235

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<3.70		5.00	3.70	mg/L			10/31/24 12:07	1

Lab Sample ID: LCS 310-438235/2
Matrix: Water
Analysis Batch: 438235

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	93.00		mg/L		93	81 - 116

QC Association Summary

Client: AECOM
Job ID: 310-293886-1
Project/Site: Black Hawk County Landfill (IDNR)

GC/MS VOA

Analysis Batch: 438192

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-293886-1	P-604C	Total/NA	Water	8260D	
310-293886-2	P-703C	Total/NA	Water	8260D	
310-293886-3	Trip Blank	Total/NA	Water	8260D	
MB 310-438192/5	Method Blank	Total/NA	Water	8260D	
LCS 310-438192/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-438192/7	Lab Control Sample	Total/NA	Water	8260D	

Metals

Prep Batch: 439044

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-293886-1	P-604C	Total/NA	Water	3005A	
310-293886-2	P-703C	Total/NA	Water	3005A	
MB 310-439044/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-439044/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-293886-1 MS	P-604C	Total/NA	Water	3005A	
310-293886-1 MSD	P-604C	Total/NA	Water	3005A	

Analysis Batch: 439231

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-293886-1	P-604C	Total/NA	Water	6020B	439044
310-293886-2	P-703C	Total/NA	Water	6020B	439044
MB 310-439044/1-A	Method Blank	Total/NA	Water	6020B	439044
LCS 310-439044/2-A	Lab Control Sample	Total/NA	Water	6020B	439044
310-293886-1 MS	P-604C	Total/NA	Water	6020B	439044
310-293886-1 MSD	P-604C	Total/NA	Water	6020B	439044

General Chemistry

Analysis Batch: 438152

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-293886-2	P-703C	Total/NA	Water	I-3765-85	
MB 310-438152/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-438152/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Analysis Batch: 438235

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-293886-1	P-604C	Total/NA	Water	I-3765-85	
MB 310-438235/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-438235/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Field Service / Mobile Lab

Analysis Batch: 438682

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-293886-1	P-604C	Total/NA	Water	Field Sampling	
310-293886-2	P-703C	Total/NA	Water	Field Sampling	

Lab Chronicle

Client: AECOM
Job ID: 310-293886-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: P-604C
Lab Sample ID: 310-293886-1
Date Collected: 10/28/24 14:00
Matrix: Water
Date Received: 10/29/24 09:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	438192	WSE8	EET CF	10/31/24 13:51
Total/NA	Prep	3005A			439044	F5MW	EET CF	11/08/24 09:30
Total/NA	Analysis	6020B		1	439231	A6US	EET CF	11/08/24 18:06
Total/NA	Analysis	I-3765-85		1	438235	DGU1	EET CF	10/31/24 12:07
Total/NA	Analysis	Field Sampling		1	438682	BJ0R	EET CF	10/28/24 14:00

Client Sample ID: P-703C
Lab Sample ID: 310-293886-2
Date Collected: 10/28/24 11:00
Matrix: Water
Date Received: 10/29/24 09:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	438192	WSE8	EET CF	10/31/24 14:13
Total/NA	Prep	3005A			439044	F5MW	EET CF	11/08/24 09:30
Total/NA	Analysis	6020B		1	439231	A6US	EET CF	11/08/24 18:31
Total/NA	Analysis	I-3765-85		1	438152	DGU1	EET CF	10/31/24 06:46
Total/NA	Analysis	Field Sampling		1	438682	BJ0R	EET CF	10/28/24 11:00

Client Sample ID: Trip Blank
Lab Sample ID: 310-293886-3
Date Collected: 10/28/24 06:00
Matrix: Water
Date Received: 10/29/24 09:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	438192	WSE8	EET CF	10/31/24 12:24

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Accreditation/Certification Summary

Client: AECOM
Job ID: 310-293886-1
Project/Site: Black Hawk County Landfill (IDNR)

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8260D		Water	1,2,4-Trichlorobenzene
8260D		Water	Allyl chloride
8260D		Water	Ethyl methacrylate
8260D		Water	m,p-Xylene
8260D		Water	o-Xylene
Field Sampling		Water	Field Turbidity

Method Summary

Client: AECOM
Job ID: 310-293886-1
Project/Site: Black Hawk County Landfill (IDNR)

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
Field Sampling	Field Sampling	EPA	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
5030B	Purge and Trap	SW846	EET CF

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

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310-293886 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: AECOM

City/State: CITY Waterloo STATE IA Project:

Receipt Information

Date/Time Received: DATE 10/29/24 TIME 925 Received By: PH

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☐ Lab Courier ☐ Lab Field Services ☑ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☑ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☐ Yes ☑ No *If yes:* Cooler # _____ of _____

Cooler Custody Seals Present? ☐ Yes ☑ No *If yes:* Cooler custody seals intact? ☐ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☑ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☑ Yes ☐ No *If yes:* Which VOA samples are in cooler? ↓

All

Temperature Record

Coolant: ☑ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: P Correction Factor (°C): 0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 1.5 Corrected Temp (°C): 1.5

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE: If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

Eurofins Cedar Falls
3019 Venture Way

Cedar Falls, IA 50613
phone 319 277.2401 fax 319.277 2425

Chain of Custody Record

eurofins | Environment Testing America

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other IDNR

Eurofins Environment Testing America

Client Contact	**Project Manager: Chris Oelkers**		COC No
AECOM	Email Christopher Oelkers@aecom.com	**Site Contact:**	**Date:** 10-29-24 — 1 of 1 COCs
501 Sycamore Street, Suite 222	**Tel/Fax:319-296-6878**	**Lab Contact:**	**Carrier:** — TALS Project #
Waterloo, IA 50703	**Analysis Turnaround Time** ☑ CALENDAR DAYS ☐ WORKING DAYS		Sampler
(319) 232-6531 Phone	TAT if different from Below ☑ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day		**For Lab Use Only:** Walk-in Client: / Lab Sampling
(xxx) xxx-xxxx FAX			
Project Name Black Hawk Co IDNR			Job / SDG No
Site Black Hawk County Landfill			
P O #			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Appendix I, TSS	Appendix II, TSS	2,4-D	4,4'-DDD	beta-BHC	delta BHC	Endosulfan I	Endosulfan sulfate	Endrin aldehyde	Silvex	Sulfide	Sample Specific Notes
GUW3-1			G	GW		N		X											
GUX-1			G	GW		N		X											
P-213C			G	GW		N		X											
P-214CR			G	GW		N		X											
P-215CR			G	GW		N		X											
P-216CR			G	GW		N		X											
P-216CR-FD			G	GW		N		X											
P-604C	10-28-24	1400	G	GW	5	N		X											Turbidity – 1.31 NTU
P-703C	10-28-24	1100	G	GW	5	N		X											Turbidity – 4.11 NTU
Trip Blank	10-28-24	0600	G	W	3	N		X											

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No | Cooler Temp (°C) Obs'd._____ Corr'd._____ Therm ID No._____

Relinquished by: Ben Porter	Company: Accom	Date/Time: 10-29-24	Received by:	Company:	Date/Time
Relinquished by:	Company:	Date/Time	Received by:	Company:	Date/Time
Relinquished by:	Company:	Date/Time	Received in Laboratory by:	Company:	Date/Time: 10/29/24 0925

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11/11/2024

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-293886-1

Login Number: 293886

List Source: Eurofins Cedar Falls

List Number: 1

Creator: Bunker, Xavier M

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Chris Oelkers
AECOM
501 Sycamore Street
Suite #222
Waterloo, Iowa 50703

Generated 11/12/2024 8:59:05 AM

JOB DESCRIPTION

Black Hawk County Landfill (IDNR)
Fall 2024

JOB NUMBER

310-294168-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



Generated
11/12/2024 8:59:05 AM

Authorized for release by
Zach Bindert, Senior Project Manager
Zach.Bindert@et.eurofinsus.com
(319)595-2016

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Job ID: 310-294168-1 — Eurofins Cedar Falls

Job Narrative
310-294168-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 11/1/2024 6:19 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was -0.1°C.

GC/MS VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Field Service / Mobile Lab
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Sample Summary

Client: AECOM
Job ID: 310-294168-1
Project/Site: Black Hawk County Landfill (IDNR)

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-294168-1	P-213C	Water	10/30/24 10:45	11/01/24 06:19
310-294168-2	Trip Blank	Water	10/30/24 06:00	11/01/24 06:19

Detection Summary

Client: AECOM
Job ID: 310-294168-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: P-213C
Lab Sample ID: 310-294168-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	2.68		2.00	0.530	ug/L	1		6020B	Total/NA
Barium	9.32		2.00	0.660	ug/L	1		6020B	Total/NA
Chromium	36.4		5.00	1.20	ug/L	1		6020B	Total/NA
Cobalt	1.22		0.500	0.170	ug/L	1		6020B	Total/NA
Nickel	4.40	J	5.00	2.10	ug/L	1		6020B	Total/NA
Total Suspended Solids	3.13		1.88	1.39	mg/L	1		I-3765-85	Total/NA
Field Turbidity	1.57				NTU	1		Field Sampling	Total/NA

Client Sample ID: Trip Blank
Lab Sample ID: 310-294168-2

No Detections.

This Detection Summary does not include radiochemical test results.

Client: AECOM
Job ID: 310-294168-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: P-213C
Lab Sample ID: 310-294168-1
Date Collected: 10/30/24 10:45
Matrix: Water
Date Received: 11/01/24 06:19

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			11/02/24 00:19	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			11/02/24 00:19	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			11/02/24 00:19	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			11/02/24 00:19	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			11/02/24 00:19	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			11/02/24 00:19	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			11/02/24 00:19	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			11/02/24 00:19	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			11/02/24 00:19	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			11/02/24 00:19	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			11/02/24 00:19	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			11/02/24 00:19	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			11/02/24 00:19	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			11/02/24 00:19	1
2-Hexanone	<2.00		10.0	2.00	ug/L			11/02/24 00:19	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			11/02/24 00:19	1
Acetone	<3.10		10.0	3.10	ug/L			11/02/24 00:19	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			11/02/24 00:19	1
Benzene	<0.220		0.500	0.220	ug/L			11/02/24 00:19	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			11/02/24 00:19	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			11/02/24 00:19	1
Bromoform	<0.780		5.00	0.780	ug/L			11/02/24 00:19	1
Bromomethane	<1.10		4.00	1.10	ug/L			11/02/24 00:19	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			11/02/24 00:19	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			11/02/24 00:19	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			11/02/24 00:19	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			11/02/24 00:19	1
Chloroethane	<0.790		4.00	0.790	ug/L			11/02/24 00:19	1
Chloroform	<1.30		3.00	1.30	ug/L			11/02/24 00:19	1
Chloromethane	<0.610		3.00	0.610	ug/L			11/02/24 00:19	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			11/02/24 00:19	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			11/02/24 00:19	1
Dibromomethane	<0.330		1.00	0.330	ug/L			11/02/24 00:19	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			11/02/24 00:19	1
Iodomethane	<7.00		10.0	7.00	ug/L			11/02/24 00:19	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			11/02/24 00:19	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			11/02/24 00:19	1
o-Xylene	<0.400		1.00	0.400	ug/L			11/02/24 00:19	1
Styrene	<0.370		1.00	0.370	ug/L			11/02/24 00:19	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			11/02/24 00:19	1
Toluene	<0.430		1.00	0.430	ug/L			11/02/24 00:19	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			11/02/24 00:19	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			11/02/24 00:19	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			11/02/24 00:19	1
Trichloroethene	<0.430		1.00	0.430	ug/L			11/02/24 00:19	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			11/02/24 00:19	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			11/02/24 00:19	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			11/02/24 00:19	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			11/02/24 00:19	1

Client: AECOM
Job ID: 310-294168-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: P-213C
Lab Sample ID: 310-294168-1
Date Collected: 10/30/24 10:45
Matrix: Water
Date Received: 11/01/24 06:19

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*111*		*73 - 130*		*11/02/24 00:19*	*1*
Toluene-d8 (Surr)	*95*		*80 - 120*		*11/02/24 00:19*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*		*11/02/24 00:19*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		11/11/24 09:30	11/11/24 20:53	1
Arsenic	**2.68**		2.00	0.530	ug/L		11/11/24 09:30	11/11/24 20:53	1
Barium	**9.32**		2.00	0.660	ug/L		11/11/24 09:30	11/11/24 20:53	1
Beryllium	<0.330		1.00	0.330	ug/L		11/11/24 09:30	11/11/24 20:53	1
Cadmium	<0.100		0.200	0.100	ug/L		11/11/24 09:30	11/11/24 20:53	1
Chromium	**36.4**		5.00	1.20	ug/L		11/11/24 09:30	11/11/24 20:53	1
Cobalt	**1.22**		0.500	0.170	ug/L		11/11/24 09:30	11/11/24 20:53	1
Copper	<1.80		5.00	1.80	ug/L		11/11/24 09:30	11/11/24 20:53	1
Lead	<0.260		0.500	0.260	ug/L		11/11/24 09:30	11/11/24 20:53	1
Nickel	**4.40**	**J**	5.00	2.10	ug/L		11/11/24 09:30	11/11/24 20:53	1
Selenium	<1.40		5.00	1.40	ug/L		11/11/24 09:30	11/11/24 20:53	1
Silver	<0.500		1.00	0.500	ug/L		11/11/24 09:30	11/11/24 20:53	1
Thallium	<0.570		1.00	0.570	ug/L		11/11/24 09:30	11/11/24 20:53	1
Vanadium	<1.10		5.00	1.10	ug/L		11/11/24 09:30	11/11/24 20:53	1
Zinc	<9.70		20.0	9.70	ug/L		11/11/24 09:30	11/11/24 20:53	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**3.13**		1.88	1.39	mg/L			11/04/24 08:29	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**1.57**				NTU			10/30/24 10:45	1

Client: AECOM
Job ID: 310-294168-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Trip Blank
Lab Sample ID: 310-294168-2
Date Collected: 10/30/24 06:00
Matrix: Water
Date Received: 11/01/24 06:19

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			11/01/24 23:35	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			11/01/24 23:35	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			11/01/24 23:35	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			11/01/24 23:35	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			11/01/24 23:35	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			11/01/24 23:35	1
1,1-Dichloropropene	<0.430		1.00	0.430	ug/L			11/01/24 23:35	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			11/01/24 23:35	1
1,2,4-Trichlorobenzene	<0.750		5.00	0.750	ug/L			11/01/24 23:35	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			11/01/24 23:35	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			11/01/24 23:35	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			11/01/24 23:35	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			11/01/24 23:35	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			11/01/24 23:35	1
1,3-Dichlorobenzene	<0.300		1.00	0.300	ug/L			11/01/24 23:35	1
1,3-Dichloropropane	<0.400		1.00	0.400	ug/L			11/01/24 23:35	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			11/01/24 23:35	1
2,2-Dichloropropane	<0.690		4.00	0.690	ug/L			11/01/24 23:35	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			11/01/24 23:35	1
2-Hexanone	<2.00		10.0	2.00	ug/L			11/01/24 23:35	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			11/01/24 23:35	1
Acetone	<3.10		10.0	3.10	ug/L			11/01/24 23:35	1
Acrolein	<3.60		10.0	3.60	ug/L			11/01/24 23:35	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			11/01/24 23:35	1
Allyl chloride	<0.700		2.00	0.700	ug/L			11/01/24 23:35	1
Benzene	<0.220		0.500	0.220	ug/L			11/01/24 23:35	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			11/01/24 23:35	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			11/01/24 23:35	1
Bromoform	<0.780		5.00	0.780	ug/L			11/01/24 23:35	1
Bromomethane	<1.10		4.00	1.10	ug/L			11/01/24 23:35	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			11/01/24 23:35	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			11/01/24 23:35	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			11/01/24 23:35	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			11/01/24 23:35	1
Chloroethane	<0.790		4.00	0.790	ug/L			11/01/24 23:35	1
Chloroform	<1.30		3.00	1.30	ug/L			11/01/24 23:35	1
Chloromethane	<0.610		3.00	0.610	ug/L			11/01/24 23:35	1
Chloroprene	<0.230		1.00	0.230	ug/L			11/01/24 23:35	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			11/01/24 23:35	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			11/01/24 23:35	1
Dibromomethane	<0.330		1.00	0.330	ug/L			11/01/24 23:35	1
Dichlorodifluoromethane	<0.250		3.00	0.250	ug/L			11/01/24 23:35	1
Ethyl methacrylate	<0.680		2.00	0.680	ug/L			11/01/24 23:35	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			11/01/24 23:35	1
Iodomethane	<7.00		10.0	7.00	ug/L			11/01/24 23:35	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			11/01/24 23:35	1
Methacrylonitrile	<3.30		10.0	3.30	ug/L			11/01/24 23:35	1
Methyl methacrylate	<0.760		2.00	0.760	ug/L			11/01/24 23:35	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			11/01/24 23:35	1

Client: AECOM
Job ID: 310-294168-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Trip Blank
Lab Sample ID: 310-294168-2
Date Collected: 10/30/24 06:00
Matrix: Water
Date Received: 11/01/24 06:19

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<3.00		5.00	3.00	ug/L			11/01/24 23:35	1
o-Xylene	<0.400		1.00	0.400	ug/L			11/01/24 23:35	1
Propionitrile	<3.40		10.0	3.40	ug/L			11/01/24 23:35	1
Styrene	<0.370		1.00	0.370	ug/L			11/01/24 23:35	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			11/01/24 23:35	1
Toluene	<0.430		1.00	0.430	ug/L			11/01/24 23:35	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			11/01/24 23:35	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			11/01/24 23:35	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			11/01/24 23:35	1
Trichloroethene	<0.430		1.00	0.430	ug/L			11/01/24 23:35	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			11/01/24 23:35	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			11/01/24 23:35	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			11/01/24 23:35	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			11/01/24 23:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*113*		*73 - 130*		*11/01/24 23:35*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*11/01/24 23:35*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*11/01/24 23:35*	*1*

Definitions/Glossary

Client: AECOM
Job ID: 310-294168-1
Project/Site: Black Hawk County Landfill (IDNR)

Qualifiers

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Surrogate Summary

Client: AECOM
Job ID: 310-294168-1
Project/Site: Black Hawk County Landfill (IDNR)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)							
		DBFM	TOL	BFB					
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)					
310-294168-1	P-213C	111	95	102					
310-294168-2	Trip Blank	113	98	101					
LCS 310-438357/6	Lab Control Sample	100	101	101					
LCS 310-438357/7	Lab Control Sample	112	96	101					
MB 310-438357/5	Method Blank	110	94	102					

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 310-438357/5
Matrix: Water
Analysis Batch: 438357

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			11/01/24 20:41	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			11/01/24 20:41	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			11/01/24 20:41	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			11/01/24 20:41	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			11/01/24 20:41	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			11/01/24 20:41	1
1,1-Dichloropropene	<0.430		1.00	0.430	ug/L			11/01/24 20:41	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			11/01/24 20:41	1
1,2,4-Trichlorobenzene	<0.750		5.00	0.750	ug/L			11/01/24 20:41	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			11/01/24 20:41	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			11/01/24 20:41	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			11/01/24 20:41	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			11/01/24 20:41	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			11/01/24 20:41	1
1,3-Dichlorobenzene	<0.300		1.00	0.300	ug/L			11/01/24 20:41	1
1,3-Dichloropropane	<0.400		1.00	0.400	ug/L			11/01/24 20:41	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			11/01/24 20:41	1
2,2-Dichloropropane	<0.690		4.00	0.690	ug/L			11/01/24 20:41	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			11/01/24 20:41	1
2-Hexanone	<2.00		10.0	2.00	ug/L			11/01/24 20:41	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			11/01/24 20:41	1
Acetone	<3.10		10.0	3.10	ug/L			11/01/24 20:41	1
Acrolein	<3.60		10.0	3.60	ug/L			11/01/24 20:41	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			11/01/24 20:41	1
Allyl chloride	<0.700		2.00	0.700	ug/L			11/01/24 20:41	1
Benzene	<0.220		0.500	0.220	ug/L			11/01/24 20:41	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			11/01/24 20:41	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			11/01/24 20:41	1
Bromoform	<0.780		5.00	0.780	ug/L			11/01/24 20:41	1
Bromomethane	<1.10		4.00	1.10	ug/L			11/01/24 20:41	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			11/01/24 20:41	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			11/01/24 20:41	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			11/01/24 20:41	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			11/01/24 20:41	1
Chloroethane	<0.790		4.00	0.790	ug/L			11/01/24 20:41	1
Chloroform	<1.30		3.00	1.30	ug/L			11/01/24 20:41	1
Chloromethane	<0.610		3.00	0.610	ug/L			11/01/24 20:41	1
Chloroprene	<0.230		1.00	0.230	ug/L			11/01/24 20:41	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			11/01/24 20:41	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			11/01/24 20:41	1
Dibromomethane	<0.330		1.00	0.330	ug/L			11/01/24 20:41	1
Dichlorodifluoromethane	<0.250		3.00	0.250	ug/L			11/01/24 20:41	1
Ethyl methacrylate	<0.680		2.00	0.680	ug/L			11/01/24 20:41	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			11/01/24 20:41	1
Iodomethane	<7.00		10.0	7.00	ug/L			11/01/24 20:41	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			11/01/24 20:41	1
Methacrylonitrile	<3.30		10.0	3.30	ug/L			11/01/24 20:41	1
Methyl methacrylate	<0.760		2.00	0.760	ug/L			11/01/24 20:41	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-438357/5
Matrix: Water
Analysis Batch: 438357

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylene Chloride	<1.70		5.00	1.70	ug/L			11/01/24 20:41	1
Naphthalene	<3.00		5.00	3.00	ug/L			11/01/24 20:41	1
o-Xylene	<0.400		1.00	0.400	ug/L			11/01/24 20:41	1
Propionitrile	<3.40		10.0	3.40	ug/L			11/01/24 20:41	1
Styrene	<0.370		1.00	0.370	ug/L			11/01/24 20:41	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			11/01/24 20:41	1
Toluene	<0.430		1.00	0.430	ug/L			11/01/24 20:41	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			11/01/24 20:41	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			11/01/24 20:41	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			11/01/24 20:41	1
Trichloroethene	<0.430		1.00	0.430	ug/L			11/01/24 20:41	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			11/01/24 20:41	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			11/01/24 20:41	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			11/01/24 20:41	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			11/01/24 20:41	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*110*		*73 - 130*		*11/01/24 20:41*	*1*
Toluene-d8 (Surr)	*94*		*80 - 120*		*11/01/24 20:41*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*		*11/01/24 20:41*	*1*

Lab Sample ID: LCS 310-438357/6
Matrix: Water
Analysis Batch: 438357

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	20.0	19.93		ug/L		100	71 - 120
1,1,1-Trichloroethane	20.0	20.43		ug/L		102	73 - 129
1,1,2,2-Tetrachloroethane	20.0	19.30		ug/L		97	68 - 124
1,1,2-Trichloroethane	20.0	20.90		ug/L		104	73 - 123
1,1-Dichloroethane	20.0	19.72		ug/L		99	70 - 127
1,1-Dichloroethene	20.0	19.79		ug/L		99	63 - 132
1,1-Dichloropropene	20.0	20.45		ug/L		102	69 - 132
1,2,3-Trichloropropane	20.0	20.33		ug/L		102	65 - 127
1,2,4-Trichlorobenzene	20.0	20.19		ug/L		101	68 - 124
1,2-Dibromo-3-Chloropropane	20.0	18.85		ug/L		94	50 - 150
1,2-Dibromoethane (EDB)	20.0	19.92		ug/L		100	75 - 125
1,2-Dichlorobenzene	20.0	19.87		ug/L		99	74 - 120
1,2-Dichloroethane	20.0	17.56		ug/L		88	71 - 125
1,2-Dichloropropane	20.0	19.53		ug/L		98	73 - 124
1,3-Dichlorobenzene	20.0	19.89		ug/L		99	72 - 120
1,3-Dichloropropane	20.0	19.38		ug/L		97	72 - 125
1,4-Dichlorobenzene	20.0	19.64		ug/L		98	72 - 120
2,2-Dichloropropane	20.0	16.76		ug/L		84	50 - 150
2-Butanone (MEK)	40.0	33.32		ug/L		83	50 - 150
2-Hexanone	40.0	38.26		ug/L		96	60 - 140
4-Methyl-2-pentanone (MIBK)	40.0	37.87		ug/L		95	60 - 139
Acetone	40.0	37.02		ug/L		93	50 - 150

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-438357/6
Matrix: Water
Analysis Batch: 438357

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Acrolein	95.5	90.27		ug/L		95	49 - 150
Acrylonitrile	200	189.9		ug/L		95	50 - 150
Allyl chloride	20.0	19.34		ug/L		97	49 - 150
Benzene	20.0	19.49		ug/L		97	72 - 124
Bromochloromethane	20.0	20.16		ug/L		101	73 - 130
Bromodichloromethane	20.0	17.84		ug/L		89	74 - 122
Bromoform	20.0	18.45		ug/L		92	61 - 122
Carbon disulfide	20.0	18.72		ug/L		94	59 - 135
Carbon tetrachloride	20.0	20.65		ug/L		103	67 - 132
Chlorobenzene	20.0	19.93		ug/L		100	76 - 120
Chlorodibromomethane	20.0	18.60		ug/L		93	71 - 121
Chloroform	20.0	19.71		ug/L		99	72 - 125
Chloroprene	20.0	20.53		ug/L		103	69 - 133
cis-1,2-Dichloroethene	20.0	20.06		ug/L		100	74 - 123
cis-1,3-Dichloropropene	20.0	19.43		ug/L		97	71 - 125
Dibromomethane	20.0	19.46		ug/L		97	74 - 125
Ethyl methacrylate	20.0	19.69		ug/L		98	70 - 129
Ethylbenzene	20.0	20.04		ug/L		100	74 - 122
Iodomethane	20.0	12.47		ug/L		62	10 - 150
Methacrylonitrile	200	169.0		ug/L		85	69 - 129
Methyl methacrylate	40.0	37.14		ug/L		93	68 - 131
Methylene Chloride	20.0	20.48		ug/L		102	50 - 150
Naphthalene	20.0	20.28		ug/L		101	50 - 150
Propionitrile	200	194.2		ug/L		97	63 - 135
Styrene	20.0	19.95		ug/L		100	74 - 121
Tetrachloroethene	20.0	20.86		ug/L		104	71 - 130
Toluene	20.0	19.86		ug/L		99	74 - 123
trans-1,2-Dichloroethene	20.0	20.00		ug/L		100	70 - 126
trans-1,3-Dichloropropene	20.0	19.46		ug/L		97	69 - 123
trans-1,4-Dichloro-2-butene	20.0	17.47		ug/L		87	50 - 150
Trichloroethene	20.0	19.44		ug/L		97	72 - 126
Vinyl acetate	40.0	33.50		ug/L		84	50 - 150
Xylenes, Total	40.0	40.59		ug/L		101	73 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*100*		*73 - 130*
Toluene-d8 (Surr)	*101*		*80 - 120*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*

Lab Sample ID: LCS 310-438357/7
Matrix: Water
Analysis Batch: 438357

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	17.84		ug/L		89	23 - 150
Chloroethane	20.0	17.88		ug/L		89	54 - 136
Chloromethane	20.0	18.46		ug/L		92	38 - 150
Dichlorodifluoromethane	20.0	17.39		ug/L		87	39 - 150

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-438357/7
Matrix: Water
Analysis Batch: 438357

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Trichlorofluoromethane	20.0	18.55		ug/L		93	54 - 149
Vinyl chloride	20.0	18.37		ug/L		92	56 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*112*		*73 - 130*
Toluene-d8 (Surr)	*96*		*80 - 120*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-439163/1-A
Matrix: Water
Analysis Batch: 439376

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 439163

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		11/11/24 09:30	11/11/24 19:22	1
Arsenic	<0.530		2.00	0.530	ug/L		11/11/24 09:30	11/11/24 19:22	1
Barium	<0.660		2.00	0.660	ug/L		11/11/24 09:30	11/11/24 19:22	1
Beryllium	<0.330		1.00	0.330	ug/L		11/11/24 09:30	11/11/24 19:22	1
Cadmium	<0.100		0.200	0.100	ug/L		11/11/24 09:30	11/11/24 19:22	1
Chromium	<1.20		5.00	1.20	ug/L		11/11/24 09:30	11/11/24 19:22	1
Cobalt	<0.170		0.500	0.170	ug/L		11/11/24 09:30	11/11/24 19:22	1
Copper	<1.80		5.00	1.80	ug/L		11/11/24 09:30	11/11/24 19:22	1
Lead	<0.260		0.500	0.260	ug/L		11/11/24 09:30	11/11/24 19:22	1
Nickel	<2.10		5.00	2.10	ug/L		11/11/24 09:30	11/11/24 19:22	1
Selenium	<1.40		5.00	1.40	ug/L		11/11/24 09:30	11/11/24 19:22	1
Silver	<0.500		1.00	0.500	ug/L		11/11/24 09:30	11/11/24 19:22	1
Thallium	<0.570		1.00	0.570	ug/L		11/11/24 09:30	11/11/24 19:22	1
Vanadium	<1.10		5.00	1.10	ug/L		11/11/24 09:30	11/11/24 19:22	1
Zinc	<9.70		20.0	9.70	ug/L		11/11/24 09:30	11/11/24 19:22	1

Lab Sample ID: LCS 310-439163/2-A
Matrix: Water
Analysis Batch: 439376

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 439163

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	200	207.0		ug/L		103	80 - 120
Arsenic	200	206.2		ug/L		103	80 - 120
Barium	100	106.2		ug/L		106	80 - 120
Beryllium	100	101.5		ug/L		102	80 - 120
Cadmium	100	102.2		ug/L		102	80 - 120
Chromium	100	104.3		ug/L		104	80 - 120
Cobalt	100	103.3		ug/L		103	80 - 120
Copper	200	207.0		ug/L		103	80 - 120
Lead	200	224.0		ug/L		112	80 - 120
Nickel	200	210.3		ug/L		105	80 - 120
Selenium	400	403.9		ug/L		101	80 - 120
Silver	100	116.8		ug/L		117	80 - 120
Thallium	100	117.3		ug/L		117	80 - 120

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 310-439163/2-A
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 439376
Prep Batch: 439163

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Vanadium	100	106.3		ug/L		106	80 - 120
Zinc	200	189.8		ug/L		95	80 - 120

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: MB 310-438524/1
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 438524

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<3.70		5.00	3.70	mg/L			11/04/24 08:29	1

Lab Sample ID: LCS 310-438524/2
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 438524

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	97.00		mg/L		97	81 - 116

QC Association Summary

Client: AECOM
Job ID: 310-294168-1
Project/Site: Black Hawk County Landfill (IDNR)

GC/MS VOA

Analysis Batch: 438357

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-294168-1	P-213C	Total/NA	Water	8260D	
310-294168-2	Trip Blank	Total/NA	Water	8260D	
MB 310-438357/5	Method Blank	Total/NA	Water	8260D	
LCS 310-438357/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-438357/7	Lab Control Sample	Total/NA	Water	8260D	

Metals

Prep Batch: 439163

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-294168-1	P-213C	Total/NA	Water	3005A	
MB 310-439163/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-439163/2-A	Lab Control Sample	Total/NA	Water	3005A	

Analysis Batch: 439376

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-294168-1	P-213C	Total/NA	Water	6020B	439163
MB 310-439163/1-A	Method Blank	Total/NA	Water	6020B	439163
LCS 310-439163/2-A	Lab Control Sample	Total/NA	Water	6020B	439163

General Chemistry

Analysis Batch: 438524

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-294168-1	P-213C	Total/NA	Water	I-3765-85	
MB 310-438524/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-438524/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Field Service / Mobile Lab

Analysis Batch: 438682

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-294168-1	P-213C	Total/NA	Water	Field Sampling	

Lab Chronicle

Client: AECOM
Job ID: 310-294168-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: P-213C
Lab Sample ID: 310-294168-1
Date Collected: 10/30/24 10:45
Matrix: Water
Date Received: 11/01/24 06:19

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	438357	WSE8	EET CF	11/02/24 00:19
Total/NA	Prep	3005A			439163	F5MW	EET CF	11/11/24 09:30
Total/NA	Analysis	6020B		1	439376	A6US	EET CF	11/11/24 20:53
Total/NA	Analysis	I-3765-85		1	438524	DGU1	EET CF	11/04/24 08:29
Total/NA	Analysis	Field Sampling		1	438682	BJ0R	EET CF	10/30/24 10:45

Client Sample ID: Trip Blank
Lab Sample ID: 310-294168-2
Date Collected: 10/30/24 06:00
Matrix: Water
Date Received: 11/01/24 06:19

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	438357	WSE8	EET CF	11/01/24 23:35

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Accreditation/Certification Summary

Client: AECOM
Job ID: 310-294168-1
Project/Site: Black Hawk County Landfill (IDNR)

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8260D		Water	1,2,4-Trichlorobenzene
8260D		Water	Allyl chloride
8260D		Water	Ethyl methacrylate
8260D		Water	m,p-Xylene
8260D		Water	o-Xylene
Field Sampling		Water	Field Turbidity

Method Summary

Client: AECOM
Job ID: 310-294168-1
Project/Site: Black Hawk County Landfill (IDNR)

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
Field Sampling	Field Sampling	EPA	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
5030B	Purge and Trap	SW846	EET CF

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

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310-294168 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: AECOM

City/State: CITY Waterloo STATE IA Project:

Receipt Information

Date/Time Received: DATE 10/31/24 TIME 1600 Received By:

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☐ Lab Courier ☐ Lab Field Services ☑ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☑ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☐ Yes ☑ No *If yes:* Cooler # _____ of _____

Cooler Custody Seals Present? ☐ Yes ☑ No *If yes:* Cooler custody seals intact? ☐ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☑ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☐ Yes ☑ No *If yes:* Which VOA samples are in cooler? ↓

All

Temperature Record

Coolant: ☑ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: R Correction Factor (°C): 0

• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): -0.1 Corrected Temp (°C): -0.1

• Sample Container Temperature

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☑ No

NOTE If yes, contact PM before proceeding If no, proceed with login

Additional Comments

Eurofins Cedar Falls
3019 Venture Way

Cedar Falls, IA 50613
phone 319.277.2401 fax 319.277.2425

Chain of Custody Record

eurofins Environment Testing America

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other IDNR

Eurofins Environment Testing America

Client Contact	**Project Manager: Chris Oelkers**	COC No
AECOM	Email Christopher Oelkers@aecom.com	**Site Contact:** / **Date:** 10-31-24	1 of 1 COCs
501 Sycamore Street, Suite 222	**Tel/Fax:319-296-6878**	**Lab Contact:** / **Carrier:**	TALS Project #
Waterloo, IA 50703	**Analysis Turnaround Time**		Sampler
(319) 232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS		**For Lab Use Only:**
(xxx) xxx-xxxx FAX	TAT if different from Below _____		Walk-in Client:
Project Name Black Hawk Co IDNR	☑ 2 weeks		Lab Sampling
Site Black Hawk County Landfill	☐ 1 week		
P O #	☐ 2 days		Job / SDG No
	☐ 1 day		

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Appendix I, TSS	Appendix II, TSS	2,4-D	4,4'-DDD	beta-BHC	delta BHC	Endosulfan I	Endosulfan sulfate	Endrin aldehyde	Silvex	Sulfide	Sample Specific Notes
GUW3-1			G	GW		N		X											
GUX-1			G	GW		N		X											
P-213C	10-30-24	1045	G	GW	5	N		X											Turbidity – 1.57NTU
P-214CR			G	GW		N		X											
P-215CR			G	GW		N		X											
P-216CR			G	GW		N		X											
P-216CR-FD			G	GW		N		X											
P-604C			G	GW		N		X											
P-703C			G	GW		N		X											
Trip Blank	10-30-24	0600	G	W	3	N		X											

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No		Cooler Temp (°C) Obs'd._____ Corr'd._____		Therm ID No._____
Relinquished by: Ben Pohl	Company: Aecom	Date/Time: 10-31-24	Received by:	Company:	Date/Time
Relinquished by:	Company:	Date/Time	Received by:	Company:	Date/Time
Relinquished by:	Company:	Date/Time	Received in Laboratory by: WH	Company:	Date/Time: 10/31/24 1600

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-294168-1

Login Number: 294168

List Source: Eurofins Cedar Falls

List Number: 1

Creator: Homolar, Dana J

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Chris Oelkers
AECOM
501 Sycamore Street
Suite #222
Waterloo, Iowa 50703

Generated 1/15/2025 3:03:19 PM

JOB DESCRIPTION

Black Hawk County Landfill (IDNR)
December 2024 Resampling

JOB NUMBER

310-298510-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



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Authorized for release by
Zach Bindert, Senior Project Manager
Zach.Bindert@et.eurofinsus.com
(319)595-2016

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Job ID: 310-298510-1 — Eurofins Cedar Falls

Job Narrative
310-298510-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 1/10/2025 9:35 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 4.6°C.

GC/MS VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Field Service / Mobile Lab
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Sample Summary

Client: AECOM
Job ID: 310-298510-1
Project/Site: Black Hawk County Landfill (IDNR)

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-298510-1	OW-221B	Water	01/09/25 11:45	01/10/25 09:35
310-298510-2	OW-223B	Water	01/09/25 12:15	01/10/25 09:35
310-298510-3	MW-409B	Water	01/09/25 11:00	01/10/25 09:35
310-298510-4	MW-712B	Water	01/09/25 10:20	01/10/25 09:35
310-298510-5	P-213C	Water	01/09/25 15:00	01/10/25 09:35
310-298510-6	Trip Blank	Water	01/09/25 06:00	01/10/25 09:35

Detection Summary

Client: AECOM
Job ID: 310-298510-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-221B — Lab Sample ID: 310-298510-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.585	J	1.00	0.210	ug/L	1		8260D	Total/NA
Benzene	0.596		0.500	0.220	ug/L	1		8260D	Total/NA
Field Turbidity	0.71				NTU	1		Field Sampling	Total/NA

Client Sample ID: OW-223B — Lab Sample ID: 310-298510-2

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Field Turbidity	0.67				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-409B — Lab Sample ID: 310-298510-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	2.82		2.00	0.530	ug/L	1		6020B	Total/NA
Total Suspended Solids	17.0		15.0	11.1	mg/L	1		I-3765-85	Total/NA
Field Turbidity	24.29				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-712B — Lab Sample ID: 310-298510-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cobalt	4.34		0.500	0.170	ug/L	1		6020B	Total/NA
Field Turbidity	0.75				NTU	1		Field Sampling	Total/NA

Client Sample ID: P-213C — Lab Sample ID: 310-298510-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chromium	52.7		5.00	1.20	ug/L	1		6020B	Total/NA
Field Turbidity	0.00				NTU	1		Field Sampling	Total/NA

Client Sample ID: Trip Blank — Lab Sample ID: 310-298510-6

No Detections.

This Detection Summary does not include radiochemical test results.

Client: AECOM
Job ID: 310-298510-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-221B
Lab Sample ID: 310-298510-1
Date Collected: 01/09/25 11:45
Matrix: Water
Date Received: 01/10/25 09:35

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	0.585	J	1.00	0.210	ug/L			01/13/25 12:26	1
Benzene	0.596		0.500	0.220	ug/L			01/13/25 12:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*90*		*73 - 130*		*01/13/25 12:26*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*01/13/25 12:26*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*01/13/25 12:26*	*1*

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	0.71				NTU			01/09/25 11:45	1

Client Sample Results

Client: AECOM
Job ID: 310-298510-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-223B
Lab Sample ID: 310-298510-2

Date Collected: 01/09/25 12:15
Matrix: Water

Date Received: 01/10/25 09:35

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Thallium	<0.570		1.00	0.570	ug/L		01/14/25 09:00	01/14/25 16:16	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	<3.70		5.00	3.70	mg/L			01/10/25 20:33	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**0.67**				NTU			01/09/25 12:15	1

Client: AECOM
Job ID: 310-298510-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: MW-409B
Lab Sample ID: 310-298510-3
Date Collected: 01/09/25 11:00
Matrix: Water
Date Received: 01/10/25 09:35

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	2.82		2.00	0.530	ug/L		01/14/25 09:00	01/14/25 16:19	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	17.0		15.0	11.1	mg/L			01/10/25 20:33	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	24.29				NTU			01/09/25 11:00	1

Client: AECOM
Job ID: 310-298510-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: MW-712B
Lab Sample ID: 310-298510-4
Date Collected: 01/09/25 10:20
Matrix: Water
Date Received: 01/10/25 09:35

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	4.34		0.500	0.170	ug/L		01/14/25 09:00	01/14/25 16:22	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	<3.70		5.00	3.70	mg/L			01/10/25 20:33	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	0.75				NTU			01/09/25 10:20	1

Client Sample Results

Client: AECOM
Job ID: 310-298510-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: P-213C
Lab Sample ID: 310-298510-5

Date Collected: 01/09/25 15:00
Matrix: Water

Date Received: 01/10/25 09:35

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	**52.7**		5.00	1.20	ug/L		01/14/25 09:00	01/14/25 16:25	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	<3.70		5.00	3.70	mg/L			01/10/25 20:33	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**0.00**				NTU			01/09/25 15:00	1

Client: AECOM
Job ID: 310-298510-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Trip Blank
Lab Sample ID: 310-298510-6
Date Collected: 01/09/25 06:00
Matrix: Water
Date Received: 01/10/25 09:35

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			01/13/25 12:04	1
Benzene	<0.220		0.500	0.220	ug/L			01/13/25 12:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*91*		*73 - 130*		*01/13/25 12:04*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*01/13/25 12:04*	*1*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*01/13/25 12:04*	*1*

Definitions/Glossary

Client: AECOM
Job ID: 310-298510-1
Project/Site: Black Hawk County Landfill (IDNR)

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Surrogate Summary

Client: AECOM
Job ID: 310-298510-1
Project/Site: Black Hawk County Landfill (IDNR)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)								
		DBFM	TOL	BFB						
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)						
310-298510-1	OW-221B	90	96	101						
310-298510-1 MS	OW-221B	96	102	99						
310-298510-1 MSD	OW-221B	94	103	100						
310-298510-6	Trip Blank	91	99	99						
LCS 310-444489/6	Lab Control Sample	90	102	98						
MB 310-444489/5	Method Blank	88	96	100						

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)

TOL = Toluene-d8 (Surr)

BFB = 4-Bromofluorobenzene (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 310-444489/5
Matrix: Water
Analysis Batch: 444489

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			01/13/25 10:13	1
Benzene	<0.220		0.500	0.220	ug/L			01/13/25 10:13	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*88*		*73 - 130*		*01/13/25 10:13*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*01/13/25 10:13*	*1*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*		*01/13/25 10:13*	*1*

Lab Sample ID: LCS 310-444489/6
Matrix: Water
Analysis Batch: 444489

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
cis-1,2-Dichloroethene			20.0	18.78		ug/L		94	74 - 123		
Benzene			20.0	19.67		ug/L		98	72 - 124		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*90*		*73 - 130*
Toluene-d8 (Surr)	*102*		*80 - 120*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*

Lab Sample ID: 310-298510-1 MS
Matrix: Water
Analysis Batch: 444489

Client Sample ID: OW-221B
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
cis-1,2-Dichloroethene	0.585	J	25.0	21.61		ug/L		84	45 - 130		
Benzene	0.596		25.0	22.65		ug/L		88	46 - 130		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*96*		*73 - 130*
Toluene-d8 (Surr)	*102*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*

Lab Sample ID: 310-298510-1 MSD
Matrix: Water
Analysis Batch: 444489

Client Sample ID: OW-221B
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
cis-1,2-Dichloroethene	0.585	J	25.0	20.90		ug/L		81	45 - 130	3	20
Benzene	0.596		25.0	22.17		ug/L		86	46 - 130	2	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*94*		*73 - 130*
Toluene-d8 (Surr)	*103*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*

Client: AECOM
Project/Site: Black Hawk County Landfill (IDNR)

Job ID: 310-298510-1

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-444522/1-A
Matrix: Water
Analysis Batch: 444671

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 444522

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.530		2.00	0.530	ug/L		01/14/25 09:00	01/14/25 15:41	1
Chromium	<1.20		5.00	1.20	ug/L		01/14/25 09:00	01/14/25 15:41	1
Cobalt	<0.170		0.500	0.170	ug/L		01/14/25 09:00	01/14/25 15:41	1
Thallium	<0.570		1.00	0.570	ug/L		01/14/25 09:00	01/14/25 15:41	1

Lab Sample ID: LCS 310-444522/2-A
Matrix: Water
Analysis Batch: 444671

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 444522

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	200	197.4		ug/L		99	80 - 120
Chromium	100	104.4		ug/L		104	80 - 120
Cobalt	100	96.77		ug/L		97	80 - 120
Thallium	100	93.68		ug/L		94	80 - 120

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: MB 310-444453/1
Matrix: Water
Analysis Batch: 444453

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<3.70		5.00	3.70	mg/L			01/10/25 20:33	1

Lab Sample ID: LCS 310-444453/2
Matrix: Water
Analysis Batch: 444453

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	92.00		mg/L		92	81 - 116

Lab Sample ID: 310-298510-3 DU
Matrix: Water
Analysis Batch: 444453

Client Sample ID: MW-409B
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Suspended Solids	17.0		15.00		mg/L		13	35

QC Association Summary

Client: AECOM
Job ID: 310-298510-1
Project/Site: Black Hawk County Landfill (IDNR)

GC/MS VOA

Analysis Batch: 444489

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-298510-1	OW-221B	Total/NA	Water	8260D	
310-298510-6	Trip Blank	Total/NA	Water	8260D	
MB 310-444489/5	Method Blank	Total/NA	Water	8260D	
LCS 310-444489/6	Lab Control Sample	Total/NA	Water	8260D	
310-298510-1 MS	OW-221B	Total/NA	Water	8260D	
310-298510-1 MSD	OW-221B	Total/NA	Water	8260D	

Metals

Prep Batch: 444522

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-298510-2	OW-223B	Total/NA	Water	3005A	
310-298510-3	MW-409B	Total/NA	Water	3005A	
310-298510-4	MW-712B	Total/NA	Water	3005A	
310-298510-5	P-213C	Total/NA	Water	3005A	
MB 310-444522/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-444522/2-A	Lab Control Sample	Total/NA	Water	3005A	

Analysis Batch: 444671

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-298510-2	OW-223B	Total/NA	Water	6020B	444522
310-298510-3	MW-409B	Total/NA	Water	6020B	444522
310-298510-4	MW-712B	Total/NA	Water	6020B	444522
310-298510-5	P-213C	Total/NA	Water	6020B	444522
MB 310-444522/1-A	Method Blank	Total/NA	Water	6020B	444522
LCS 310-444522/2-A	Lab Control Sample	Total/NA	Water	6020B	444522

General Chemistry

Analysis Batch: 444453

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-298510-2	OW-223B	Total/NA	Water	I-3765-85	
310-298510-3	MW-409B	Total/NA	Water	I-3765-85	
310-298510-4	MW-712B	Total/NA	Water	I-3765-85	
310-298510-5	P-213C	Total/NA	Water	I-3765-85	
MB 310-444453/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-444453/2	Lab Control Sample	Total/NA	Water	I-3765-85	
310-298510-3 DU	MW-409B	Total/NA	Water	I-3765-85	

Field Service / Mobile Lab

Analysis Batch: 444756

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-298510-1	OW-221B	Total/NA	Water	Field Sampling	
310-298510-2	OW-223B	Total/NA	Water	Field Sampling	
310-298510-3	MW-409B	Total/NA	Water	Field Sampling	
310-298510-4	MW-712B	Total/NA	Water	Field Sampling	
310-298510-5	P-213C	Total/NA	Water	Field Sampling	

Lab Chronicle

Client: AECOM
Job ID: 310-298510-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: OW-221B
Lab Sample ID: 310-298510-1
Date Collected: 01/09/25 11:45
Matrix: Water
Date Received: 01/10/25 09:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	444489	WSE8	EET CF	01/13/25 12:26
Total/NA	Analysis	Field Sampling		1	444756	BJ0R	EET CF	01/09/25 11:45

Client Sample ID: OW-223B
Lab Sample ID: 310-298510-2
Date Collected: 01/09/25 12:15
Matrix: Water
Date Received: 01/10/25 09:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			444522	F5MW	EET CF	01/14/25 09:00
Total/NA	Analysis	6020B		1	444671	NFT2	EET CF	01/14/25 16:16
Total/NA	Analysis	I-3765-85		1	444453	MDU9	EET CF	01/10/25 20:33
Total/NA	Analysis	Field Sampling		1	444756	BJ0R	EET CF	01/09/25 12:15

Client Sample ID: MW-409B
Lab Sample ID: 310-298510-3
Date Collected: 01/09/25 11:00
Matrix: Water
Date Received: 01/10/25 09:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			444522	F5MW	EET CF	01/14/25 09:00
Total/NA	Analysis	6020B		1	444671	NFT2	EET CF	01/14/25 16:19
Total/NA	Analysis	I-3765-85		1	444453	MDU9	EET CF	01/10/25 20:33
Total/NA	Analysis	Field Sampling		1	444756	BJ0R	EET CF	01/09/25 11:00

Client Sample ID: MW-712B
Lab Sample ID: 310-298510-4
Date Collected: 01/09/25 10:20
Matrix: Water
Date Received: 01/10/25 09:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			444522	F5MW	EET CF	01/14/25 09:00
Total/NA	Analysis	6020B		1	444671	NFT2	EET CF	01/14/25 16:22
Total/NA	Analysis	I-3765-85		1	444453	MDU9	EET CF	01/10/25 20:33
Total/NA	Analysis	Field Sampling		1	444756	BJ0R	EET CF	01/09/25 10:20

Client Sample ID: P-213C
Lab Sample ID: 310-298510-5
Date Collected: 01/09/25 15:00
Matrix: Water
Date Received: 01/10/25 09:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			444522	F5MW	EET CF	01/14/25 09:00
Total/NA	Analysis	6020B		1	444671	NFT2	EET CF	01/14/25 16:25
Total/NA	Analysis	I-3765-85		1	444453	MDU9	EET CF	01/10/25 20:33
Total/NA	Analysis	Field Sampling		1	444756	BJ0R	EET CF	01/09/25 15:00

Lab Chronicle

Client: AECOM
Job ID: 310-298510-1
Project/Site: Black Hawk County Landfill (IDNR)

Client Sample ID: Trip Blank
Lab Sample ID: 310-298510-6

Date Collected: 01/09/25 06:00
Matrix: Water

Date Received: 01/10/25 09:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	444489	WSE8	EET CF	01/13/25 12:04

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Accreditation/Certification Summary

Client: AECOM
Job ID: 310-298510-1
Project/Site: Black Hawk County Landfill (IDNR)

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
Field Sampling		Water	Field Turbidity

Method Summary

Client: AECOM
Job ID: 310-298510-1
Project/Site: Black Hawk County Landfill (IDNR)

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
Field Sampling	Field Sampling	EPA	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
5030B	Purge and Trap	SW846	EET CF

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: AECOM

City/State: CITY Water loo STATE IA. Project: Black Hk Co. FDNR

Receipt Information

Date/Time Received: DATE 1/16/25 TIME 9:35 Received By: JL

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☐ Lab Courier ☐ Lab Field Services ☑ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☑ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☐ Yes ☑ No *If yes:* Cooler # _____ of _____

Cooler Custody Seals Present? ☐ Yes ☑ No *If yes:* Cooler custody seals intact? ☐ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☑ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☐ Yes ☑ No *If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☑ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: 4 Correction Factor (°C): 0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 4.6 Corrected Temp (°C). 4.6

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE. If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

Eurofins Cedar Falls
3019 Venture Way

Cedar Falls, IA 50613
phone 319 277.2401 fax 319.277.2425

Chain of Custody Record

eurofins | Environment Testing America

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other IDNR

Eurofins Environment Testing America

Client Contact	Project Manager: Chris Oelkers	Site Contact:	Date: 1-10-25	COC No
AECOM	Email: Christopher.Oelkers@aecom.com	Lab Contact:	Carrier:	___ of ___ COCs
501 Sycamore Street, Suite 222	Tel/Fax:319-296-6878			TALS Project #
Waterloo, IA 50703	Analysis Turnaround Time			Sampler
(319) 232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(xxx) xxx-xxxx FAX	TAT if different from Below ___			Walk-in Client
Project Name: Black Hawk Co IDNR	☑ 2 weeks			Lab Sampling
Site: Black Hawk County Landfill	☐ 1 week			
P O #	☐ 2 days			Job / SDG No
	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	TSS	Arsenic	Benzene	Chromium	Cis-1,2-Dichloroethylene	Cobalt	Thallium	Sample Specific Notes
OW-221B	1-9-25	1145	G	GW	3	N				X		X			0.71 NTU
OW-223B		1215	G	GW	2	N		X						X	0.67 NTU
MW-409B		1100	G	GW	2	N		X	X						24.29 NTU
MW-712B		1020	G	GW	2	N		X					X		0.75 NTU
P-213C		1500	G	GW	2	N		X			X				0.00 NTU
	▽	0600	G	W	3										

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ___

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for ___ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No | Cooler Temp (°C) Obs'd.___ Corr'd.___ Therm ID No.___

Relinquished by	Company	Date/Time	Received by	Company	Date/Time
[signature]	Aecom	1-10-25	[signature]		1/10/25 / 9:35
Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Relinquished by	Company	Date/Time	Received in Laboratory by	Company	Date/Time

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1/15/2025

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-298510-1

Login Number: 298510

List Source: Eurofins Cedar Falls

List Number: 1

Creator: Homolar, Dana J

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Appendix C - Groundwater Sampling Field Data

APPENDIX C-1
SPRING WELL PURGING & SAMPLING COLLECTION

AECOM

Well Purging and Sampling Collection

Site: BHCL-IDNR SPRING SAMPLE Well ID: OW-227B

Weather Conditions: Sunny 75° Project No.:

Sample Method (circle one): Pumped Other: Bailed

Pump Type: (circle one) 0.85" dia. SS Bladder SS Mega-Monsoon 0.675" dia. SS Bladder Other:

Day 1 Date: 5-23-24

Pre-Purge Depth to Water: 9.23 feet Time: 1540

Post-Purge Depth to Water: 10.37 feet Time: 1710

Pump Dial Setting: 165 Flow Rate: 100 ml/min

Total Purge Volume (actual): 1000 ml @ sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date:

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0 163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = S + P = gallons

Depth to Bottom: 21.75 feet Time: (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system.

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond.	Temp.	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
5-23-24	1545			6.74	5657.9	24.68	Clear	8.30	2.14	48.6
	1555			6.61	5393	17.37	Clearish	9.52	1.84	34.4

Comments: Sampled @ 1700
Initial purge was clear with low turbidity
Sample was clear
Equipment Blank #3 taken
6 bottles collected

Duplicate - Sample ID.: Time:

Field Blank - Sample ID.: #3 Time: 1700

(If no quality control samples were collected cross-out, initial, and date)

Signature: Date: 5-23-24

AECOM

Well Purging and Sampling Collection

Site: BHCL-IDNR SPRING SAMPLE Well ID: OW-226B

Weather Conditions: Sunny 73° Project No.:

Sample Method (circle one): Pumped Other: Bailed

Pump Type: (circle one) 0.85" dia. SS Bladder SS Mega-Monsoon 0.675" dia. SS Bladder Other:

Day 1 Date: 5-23-24

Pre-Purge Depth to Water: 11.91 feet Time: 1450

Post-Purge Depth to Water: 12.06 feet Time: 1535

Pump Dial Setting: 165 Flow Rate: 100 ml/min

Total Purge Volume (actual): 1000 ml ⊕ sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = S + P = gallons

Depth to Bottom: 21.49 feet Time: (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system.

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond.	Temp.	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
5-23-24	1500			6.90	7137.4	28.01	Clearish	16.36	2.36	153.2
	1510			6.86	6474.6	18.75	Clearish	24.86	1.70	50.8

Comments: Sampled @ 1550
Initial purge volume was clearish with low turbidity
Sample was clearish
6 bottles collected

Duplicate - Sample ID Time

Field Blank - Sample ID.: Time

(If no quality control samples were collected cross-out, initial, and date)

Signature: Date: 5-23-24

AECOM

Well Purging and Sampling Collection

Site: BHCL - IDNR SPRING SAMPLE Well ID: OW-113B

Weather Conditions: Sunny Project No.:

Sample Method (circle one): Pumped Other: Bailed

Pump Type: (circle one) 0.85" dia. SS Bladder SS Mega-Monsoon 0.675" dia. SS Bladder Other:

Day 1 Date: 5-23-24

Pre-Purge Depth to Water: 4.23 feet Time 1345

Post-Purge Depth to Water: 4.73 feet Time 1445

Pump Dial Setting: 165 Flow Rate:

Total Purge Volume (actual): 1000 ml @ Sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date:

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = **S** + **P** = gallons

Depth to Bottom: 22.00 feet Time (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system.

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond	Temp	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
5-23-22	1350			6.61	2226.6	23.26	Cloudy	100.70	1.74	250
	1400			6.41	2247.3	18.43	Cloudy	135.60	1.10	246.3

Comments: Sampled @ 1415
Initial purge volume was cloudy with high turbidity
Sample was cloudy
Duplicate #5 taken
6 bottles collected

Duplicate - Sample ID.: #5 Time: 1415

Field Blank - Sample ID.: — Time: —

(If no quality control samples were collected cross-out, initial, and date)

Signature: Date: 5-23-24

AECOM

Well Purging and Sampling Collection

Site: BHCL - IDNR SPRING SAMPLE Well ID: P-214GR

Weather Conditions: Overcast 73° Project No.:

Sample Method (circle one): Pumped Other: Bailed

Pump Type: (circle one) 0.85" dia. SS Bladder SS Mega-Monsoon 0.675" dia. SS Bladder Other:

Day 1 Date: 5-23-24

Pre-Purge Depth to Water: 96.58 feet Time: 1245

Post-Purge Depth to Water: 97.11 feet Time: 1335

Pump Dial Setting: 108 Flow Rate: 100 ml/min

Total Purge Volume (actual): 1000 ml @ sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date:

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = **S** + **P** = gallons

Depth to Bottom: 110.62 feet Time: (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system.

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond.	Temp	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
5-23-24	1255			8.49	1016.2	24.85	Clear	35.88	2.40	161
	1305			8.17	1066.9	21.93	Clear	35.53	0.97	173.9

Comments: Sampled @ 1330

Initial purge volume was clear with lower turbidity

Sample was clear

5 bottles collected

Duplicate - Sample ID.: Time:

Field Blank - Sample ID.: Time:

(If no quality control samples were collected cross-out, initial, and date)

Signature: Date. 5-23-24

AECOM

Well Purging and Sampling Collection

Site: BHCL-IDNR SPRING SAMPLE Well ID: P-213C

Weather Conditions: Sunny 67° Project No.:

Sample Method (circle one): Pumped Other: Bailed

Pump Type: (circle one) 0.85" dia. SS Bladder SS Mega-Monsoon 0.675" dia. SS Bladder Other:

Day 1 Date: 5-23-24

Pre-Purge Depth to Water: 110.79 feet Time: 0900

Post-Purge Depth to Water: 111.93 feet Time: 1200

Pump Dial Setting: 108 Flow Rate: 100 ml/min

Total Purge Volume (actual): 1000 ml ⊕ Sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date.

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = S + P = gallons

Depth to Bottom: 129.43 feet Time: (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system.

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond.	Temp.	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
5-23-24	0950			7.18	1322.4	20.32	Clear	1.05	2.85	202.3
	1000			7.11	1320.5	19.89	Clear	0.66	1.06	203.6

Comments Sampled @ 1030
Initial purge volume was clear with low turbidity
Sample was clear
18 bottles collected

Duplicate - Sample ID.: — Time: —

Field Blank - Sample ID.: — Time: —

(If no quality control samples were collected cross-out, initial, and date)

Signature: Date: 5-23-24

AECOM

Well Purging and Sampling Collection

Site: BHCL - IDW SPRING SAMPLE Well ID: P-215CR

Weather Conditions: Sunny 70° Project No.:

Sample Method (circle one): Pumped Other: Bailed

Pump Type (circle one): 0.85" dia. SS Bladder SS Mega-Monsoon 0.675" dia. SS Bladder Other:

Day 1 Date: 5-22-24

Pre-Purge Depth to Water: 103.94 feet Time: 1430

Post-Purge Depth to Water: 104.06 feet Time: 1630

Pump Dial Setting: 108 Flow Rate: 100 ml/min

Total Purge Volume (actual): 1000 ml @ sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date:

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = **S** + **P** = gallons

Depth to Bottom: 124.14 feet Time (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system.

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond	Temp	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
5-22-24	1445			9.03	1141.9	25.83	Clear	26.73	4.01	112.7
	1495			8.53	1176.3	23.45	Clear	13.62	1.53	125.3

Comments: Sampled @ 1600
Initial purge volume was clear with low turbidity
Sample was clear

5 bottles collected

Duplicate - Sample ID.: — Time: —

Field Blank - Sample ID.: — Time: —

(If no quality control samples were collected cross-out, initial, and date)

Signature: Date: 5-22-24

AECOM

Well Purging and Sampling Collection

Site: BHCL - IDNR SPRING SAMPLE Well ID: P-216CR

Weather Conditions: Sunny 70° Project No.:

Sample Method (circle one): Pumped Other: Bailed

Pump Type: (circle one) 0.85" dia. SS Bladder SS Mega-Monsoon 0.675" dia. SS Bladder Other:

Day 1 Date: 5-22-24

Pre-Purge Depth to Water: 112.55 feet Time: 1320

Post-Purge Depth to Water: 112.74 feet Time: 1415

Pump Dial Setting: 108 Flow Rate: 100 ml/min

Total Purge Volume (actual): 1000 ml @ sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date.

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0 163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = **S** + P = gallons

Depth to Bottom: 136.20 feet Time: (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system.

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond.	Temp.	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
5-22-24	1330			10.56	901.00	23.58	Clear	15.97	6.33	88.6
	1341			9.39	1056	21.25	Clear	12.82	2.89	99.7

Comments | Sampled @ 1400

Initial purge volume was clear with low turbidity

Sample was clear

5 bottles collected

Duplicate - Sample ID.: — Time: —

Field Blank - Sample ID.: — Time: —

(If no quality control samples were collected cross-out, initial, and date)

Signature: Date. 5-22-24

AECOM

Well Purging and Sampling Collection

Site: BHCL - IDNR SPRING SAMPLE Well ID: P-402A

Weather Conditions: Overcast 56° Project No.:

Sample Method (circle one): Pumped Other: _____ Bailed

Pump Type: (circle one) 0.85" dia. SS Bladder SS Mega-Monsoon 0.675" dia. SS Bladder Other: _____

Day 1 Date: 5-22-24

Pre-Purge Depth to Water: 17.58 feet Time: 1140

Post-Purge Depth to Water: 18.73 feet Time: 1235

Pump Dial Setting: 165 Flow Rate: 100 ml/min

Total Purge Volume (actual): 1000 ml + sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date _____

Pre-Purge Depth to Water: _____ feet Time: _____

Post-Purge Depth to Water: _____ feet Time: _____

Total Purge Volume: _____ gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = _____ feet h_t = Length of Tubing in Well = _____ feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = _____ gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = _____ gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = _____ gallons

T = Total Purge Volume (Gallons) = S + P = _____ gallons

Depth to Bottom: 56.26 feet Time: _____ (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system.

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond.	Temp.	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
5-22-24	1145			9.64	415.69	23.44	Clear	1.50	7.54	92.4
	1155			9.61	411.10	20.91	Clear	1.02	7.31	98.1

Comments: Sampled @ 1230

Initial purge volume was clear with low turbidity

Sample was clear

5 bottles collected

Duplicate - Sample ID.: _____ Time _____

Field Blank - Sample ID.: _____ Time: _____

(If no quality control samples were collected cross-out, initial, and date)

Signature: _____ Date: 5-22-24

AECOM

Well Purging and Sampling Collection

Site: BHCL - IDNR SPRING SAMPLE Well ID: P-402C

Weather Conditions: Sunny Project No.:

Sample Method (circle one): Pumped Other: Bailed

Pump Type: (circle one) 0.85" dia. SS Bladder SS Mega-Monsoon 0.675" dia. SS Bladder Other:

Day 1 Date: 5-22-24

Pre-Purge Depth to Water: 116.97 feet Time: 1030

Post-Purge Depth to Water: 116.99 feet Time: 1130

Pump Dial Setting: 108 Flow Rate: 100 ml/min

Total Purge Volume (actual): 1000 ml @ 5min/ft gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0 163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = **S** + **P** = gallons

Depth to Bottom: 133.68 feet Time: (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system.

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond.	Temp.	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
5-22-24	1045			7.43	709.72	24.92	Clear	1.59	3.85	151
	1055			7.25	692.07	19.32	Clear	0.70	1.31	162.5

Comments: Sampled @ 1100

Initial purge volume was clear with low turbidity

Sample was clear

5 bottles collected

Duplicate - Sample ID.: Time:

Field Blank - Sample ID.: Time:

(If no quality control samples were collected cross-out, initial, and date)

Signature: Date: 5-22-24

AECOM

Well Purging and Sampling Collection

Site: BHCL - IDNR SPRING SAMPLE Well ID: P-703C

Weather Conditions: Sunny Windy Project No.:

Sample Method (circle one): Pumped Other: Bailed

Pump Type: (circle one) 0.85" dia. SS Bladder SS Mega-Monsoon 0.675" dia. SS Bladder Other:

Day 1 Date: 5-22-24

Pre-Purge Depth to Water: 90.51 feet Time: 0905

Post-Purge Depth to Water: 91.57 feet Time 1020

Pump Dial Setting: 108 Flow Rate: 100 ml/min

Total Purge Volume (actual): 1000 ml @ Sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date.

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = S + P = gallons

Depth to Bottom: 121.14 feet Time (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system.

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond.	Temp	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
5-22-24	0910			7.31	995.53	15.54	Clear	3.90	5.59	180.9
	0920			7.26	963.35	15.04	Clear	1.24	3.07	186.6

Comments: Sampled @ 0945

Initial purge volume was clear with low turbidity

Sample was clear

5 bottles collected

Duplicate - Sample ID.: Time:

Field Blank - Sample ID.: Time:

(If no quality control samples were collected cross-out, initial, and date)

Signature: Date. 5-22-24

AECOM

Well Purging and Sampling Collection

Site: BHCL - IDNR SPRING SAMPLE Well ID: P-604C

Weather Conditions: Sunny 56° Project No.:

Sample Method (circle one): Pumped Other: Bailed

Pump Type (circle one): 0.85" dia. SS Bladder SS Mega-Monsoon 0.675" dia. SS Bladder Other:

Day 1 Date: 5-22-24

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Pump Dial Setting: 108 Flow Rate: 100 ml/min

Total Purge Volume (actual): gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date:

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = **S** + **P** = gallons

Depth to Bottom: 121.71 feet Time: (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond.	Temp	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
5-22-24	0810			6.44	2810.6	14.68	Clearish	88.54	3.40	211.4
	0820			6.32	2830.4	13.78	Clearish	59.32	1.21	243.6

Comments: Sampled @ 0830
Initial purge volume appeared clear/but had high turbidity
Sample was clearish
5 bottles collected

Duplicate - Sample ID.: — Time. —

Field Blank - Sample ID.: — Time: —

(If no quality control samples were collected cross-out, initial, and date)

Signature: Date. 5-22-24

Model

AECOM

Well Purging and Sampling Collection

Site: BHCL-IDNR SPRING SAMPLE Well ID: MW-320B

Weather Conditions: Sunny 73° Project No.:

Sample Method (circle one): Pumped Other: Bailed

Pump Type: (circle one) 0.85" dia. SS Bladder SS Mega-Monsoon 0.675" dia. SS Bladder Other:

Day 1 Date: 5-16-24

Pre-Purge Depth to Water: 5.58 feet Time: 1355

Post-Purge Depth to Water: feet Time:

Pump Dial Setting: 165 Flow Rate: 100 ml/min

Total Purge Volume (actual): 1000 ml @ Sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date:

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = S + P = gallons

Depth to Bottom: 19.37 feet Time: (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system.

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond.	Temp.	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
5-16-24	1400			7.61	929.81	25.35	Clear	12.49	2.60	15.4
	1410			6.93	768.67	21.78	Clear	19.41	2.40	44.2

Comments: Sampled @ 1500
Initial purge volume was clear with low turbidity
Sample was clear
Duplicate #4 & Equipment Blank #2 taken
5 bottles collected

Duplicate - Sample ID.: #4 Time: 1500

Field Blank - Sample ID.: #2 Time: 1600

(If no quality control samples were collected cross-out, initial, and date)

Signature: Date: 5-16-24

AECOM

Well Purging and Sampling Collection

Site: BHCL-IDNR [redacted] SPRING SAMPLE Well ID. OW-2203

Weather Conditions: Sunny 71° Project No.:

Sample Method (circle one): Pumped Other: Bailed

Pump Type: (circle one) 0.85" dia. SS Bladder SS Mega-Monsoon 0.675" dia. SS Bladder Other:

Day 1 Date: 5-16-24

Pre-Purge Depth to Water: 13.54 feet Time: 1245

Post-Purge Depth to Water: feet Time:

Pump Dial Setting: 165 Flow Rate: 100 ml/min

Total Purge Volume (actual): 1000 ml @ Sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0 163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = **S** + **P** = gallons

Depth to Bottom: 23.24 feet Time (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system.

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond	Temp.	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
5-16-24	1250			6.58	6072.6	19.81	Clear	7.09	0.88	49.4
	1300			6.49	6096.4	17.42	Clear	4.72	0.17	24

Comments Sampled @ 1330
Initial purge volume was clear with low turbidity
Sample was clear
7 bottles collected

Duplicate - Sample ID.: — Time: —

Field Blank - Sample ID.: — Time: —

(If no quality control samples were collected cross-out, initial, and date)

Signature: Date. 5-16-24

AECOM

Well Purging and Sampling Collection

Site: BHCL - IDNR SPRING SAMPLE Well ID: OW-409B

Weather Conditions: Overcast 70° Project No.:

Sample Method (circle one): Pumped Other: Bailed

Pump Type: (circle one) 0.85" dia. SS Bladder SS Mega-Monsoon 0.675" dia. SS Bladder Other:

Day 1 Date: 5-16-24

Pre-Purge Depth to Water: 20.19 feet Time: 1155

Post-Purge Depth to Water: 21.19 feet Time: 1240

Pump Dial Setting: 165 Flow Rate: 100 ml/min

Total Purge Volume (actual): 1000 ml @ sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date:

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0 163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = **S** + **P** = gallons

Depth to Bottom: 25.64 feet Time (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond.	Temp.	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
5-14-24	1200			6.95	2234.4	21.54	clear	15.24	2.29	38.4
	1210			6.76	1939.2	18.75	Clear	18.42	2.67	37.8

Comments: Sampled @ 1230

Initial purge volume was clear with low turbidity

Sample was clear

5 bottles collected

Duplicate - Sample ID.: Time

Field Blank - Sample ID.: Time.

(If no quality control samples were collected cross-out, initial, and date)

Signature: Date: 5-16-24

AECOM

Well Purging and Sampling Collection

Site: BHCL - IDNR SPRING SAMPLE Well ID: OW - 410B

Weather Conditions: Overcast 70° Project No.:

Sample Method (circle one): Pumped Other: ____ Bailed

Pump Type: (circle one) 0.85" dia. SS Bladder SS Mega-Monsoon 0.675" dia. SS Bladder Other: ____

Day 1 Date: 5-16-24

Pre-Purge Depth to Water: 13.18 feet Time: 1100

Post-Purge Depth to Water: 13.26 feet Time: 1145

Pump Dial Setting: 165 Flow Rate: 100 ml/min

Total Purge Volume (actual): 1000 ml ⊕ sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date: ____

Pre-Purge Depth to Water: ____ feet Time: ____

Post-Purge Depth to Water: ____ feet Time: ____

Total Purge Volume: ____ gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = ____ feet h_t = Length of Tubing in Well = ____ feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = ____ gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = ____ gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = ____ gallons

T = Total Purge Volume (Gallons) = **S** + **P** = ____ gallons

Depth to Bottom: 24.89 feet Time: ____ (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system.

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond.	Temp	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
5-16-24	1115			6.64	4650.3	21.10	Clearish	26.67	1.77	231.6
	1125			6.63	4750.3	18.56	Cloudy	182.75	2.52	199.7

Comments: Sampled @ 1130

Initial purge volume was clearish with lower turbidity
Sample was cloudy and turbidity increased
5 bottles collected

Duplicate - Sample ID.: — Time: —

Field Blank - Sample ID.: — Time: —

(If no quality control samples were collected cross-out, initial, and date)

Signature: Date 5-16-24

AECOM

Well Purging and Sampling Collection

Site: BHCL – IDNR SPRING SAMPLE Well ID: OW-402B

Weather Conditions: Sunny 67° Project No.:

Sample Method (circle one): Pumped Other: ____ / Bailed

Pump Type (circle one): 0.85" dia. SS Bladder / SS Mega-Monsoon / 0.675" dia. SS Bladder / Other: ____

Day 1 Date: 5-15-24

Pre-Purge Depth to Water: 15.49 feet Time: 1255

Post-Purge Depth to Water: 15.84 feet Time: 1505

Pump Dial Setting: 165 Flow Rate: 100 ml/min

Total Purge Volume (actual): 1000 ml @ sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date.

Pre-Purge Depth to Water: ____ feet Time: ____

Post-Purge Depth to Water: ____ feet Time: ____

Total Purge Volume: ____ gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = ____ feet h_t = Length of Tubing in Well = ____ feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = ____ gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = ____ gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = ____ gallons

T = Total Purge Volume (Gallons) = S + P = ____ gallons

Depth to Bottom: 25.25 feet Time: ____ (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system.

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond.	Temp.	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
5-15-24	1305			6.73	1542.6	23.45	Clear	4.49	1.75	48.2
	1315			6.44	1541.5	18.00	Clear	0.82	0.29	69.9

Comments: Sampled @ 1500
Initial purge volume was clear with low turbidity
Sample was clear
5 bottles collected

Duplicate - Sample ID.: ____ Time: ____

Field Blank - Sample ID.: ____ Time: ____

(If no quality control samples were collected cross-out, initial, and date)

Signature: Date: 5-15-24

AECOM

Well Purging and Sampling Collection

Site: BHCL - IDNR SPRING SAMPLE Well ID: OW-413B

Weather Conditions: Sunny 65° Project No.:

Sample Method (circle one): Pumped Other: Bailed

Pump Type: (circle one) 0.85" dia. SS Bladder SS Mega-Monsoon 0.675" dia. SS Bladder Other:

Day 1 Date: 5-15-24

Pre-Purge Depth to Water: 10.07 feet Time: 1215

Post-Purge Depth to Water: 10.10 feet Time: 1250

Pump Dial Setting: 165 Flow Rate: 100 ml/min

Total Purge Volume (actual): 1000 ml @ sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date.

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = **S** + **P** = gallons

Depth to Bottom: 21.36 feet Time (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system.

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal)	pH	Cond	Temp.	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
5-15-24	1220			6.52	1709.5	24.31	Clear	9.05	1.95	101.6
	1230			6.42	1668.7	19.98	Cloudy	81.81	2.04	83.5

Comments Sampled @ 1245

Initial purge volume was clear with low turbidity

Sample was ~~clear~~ cloudy & turbidity increased

5 bottles collected

Duplicate - Sample ID.: — Time: —

Field Blank - Sample ID.: — Time: —

(If no quality control samples were collected cross-out, initial, and date)

Signature: Date. 5-15-24

AECOM

Well Purging and Sampling Collection

Site: BHCL - IDNR SPRING SAMPLE Well ID: OW-412B

Weather Conditions: Sunny 65° Project No.:

Sample Method (circle one): Pumped Other: Bailed

Pump Type (circle one): 0.85" dia. SS Bladder SS Mega-Monsoon 0.675" dia. SS Bladder Other:

Day 1 Date: 5-15-24

Pre-Purge Depth to Water: 20.14 feet Time: 1120

Post-Purge Depth to Water: 21.72 feet Time: 1205

Pump Dial Setting: 165 Flow Rate: 100 ml/min

Total Purge Volume (actual): 1000 ml @ sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date.

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = **S** + **P** = gallons

Depth to Bottom: 32.79 feet Time: (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system.

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond.	Temp	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
5-15-24	1125			6.73	2581.4	24.33	Cloudy	82.01	3.01	40.6
	1135			6.76	2462.8	19.34	Clearish	47.33	4.54	57.7

Comments: Sampled @ 1145
Initial purge volume was cloudy with higher turbidity
Sample was clearish
5 bottles collected

Duplicate - Sample ID.: Time:

Field Blank - Sample ID.: Time:

(If no quality control samples were collected cross-out, initial, and date)

Signature: Date: 5-15-24

AECOM

Well Purging and Sampling Collection

Site: BHCL- IDNR SPRING SAMPLE Well ID: OW-411B

Weather Conditions: Sunny 64° Project No.:

Sample Method (circle one): Pumped Other: Bailed

Pump Type: (circle one) 0.85" dia. SS Bladder SS Mega-Monsoon 0.675" dia. SS Bladder Other:

Day 1 Date: 5-15-24

Pre-Purge Depth to Water: feet Time: 1000

Post-Purge Depth to Water: feet Time:

Pump Dial Setting: 165 Flow Rate: 100 ml/min

Total Purge Volume (actual): 1000 ml @ sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date.

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = S + P = gallons

Depth to Bottom: 37.14 feet Time: (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system.

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond.	Temp	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
5-15-24	1020			6.51	3333.5	19.45	Clear	1.98	2.72	187.3
	1030			6.47	3390.3	19.45	Clear	0.77	1.40	97

Comments: Sampled @ 1045
Initial purge volume was clear with low turbidity
Sample was clear
5 bottles collected

Duplicate - Sample ID.: — Time: —

Field Blank - Sample ID.: — Time: —

(If no quality control samples were collected cross-out, initial, and date)

Signature: Date: 5-15-24

AECOM

Well Purging and Sampling Collection

Site: BHCL-IDNR SPRING SAMPLE Well ID: MW-603B

Weather Conditions: Overcast 65° Project No.:

Sample Method (circle one): Pumped / Bailed Other:

Pump Type: (circle one) 0.85" dia. SS Bladder / 0.675" dia. SS Bladder / SS Mega-Monsoon / Other:

Day 1 Date: 5-14-24

Pre-Purge Depth to Water: 10.28 feet Time: 1335

Post-Purge Depth to Water: 12.59 feet Time: 1500

Pump Dial Setting: 165 Flow Rate: 100 ml/min

Total Purge Volume (actual): 1000 ml ⊕ sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date:

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet

h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = **S** + **P** = gallons

Depth to Bottom: 27.60 feet Time: (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system.

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond.	Temp.	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
5-14-24	1340			8.12	846.79	18.46	Clear	2.47	1.44	97.9
	1350			8.02	855.20	17.75	Clear	1.86	1.74	41.7

Comments: Sampled @ 1400

Initial purge volume was clear with low turbidity

Sample was clear

5 bottles collected

Duplicate - Sample ID.: Time:

Field Blank - Sample ID.: Time:

(If no quality control samples were collected cross-out, initial, and date)

Signature. Date: 5-14-24

AECOM

Well Purging and Sampling Collection

Site: BHCL - IDNR SPRING SAMPLE Well ID. GUW 1-1

Weather Conditions: _____ Project No.: _____

Sample Method (circle one): Pumped Other: _____ Bailed

Pump Type: (circle one) 0.85" dia. SS Bladder SS Mega-Monsoon 0.675" dia. SS Bladder Other: _____

Day 1 Date: 5-14-24

Pre-Purge Depth to Water: _____ feet Time: _____

Post-Purge Depth to Water: _____ feet Time: _____

Pump Dial Setting: _____ Flow Rate: _____

Total Purge Volume (actual): _____ gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date _____

Pre-Purge Depth to Water: _____ feet Time: _____

Post-Purge Depth to Water: _____ feet Time: _____

Total Purge Volume: _____ gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = _____ feet

h_t = Length of Tubing in Well = _____ feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = _____ gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = _____ gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = _____ gallons

T = Total Purge Volume (Gallons) = **S** + **P** = _____ gallons

Depth to Bottom: _____ feet Time: _____ (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system.

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond.	Temp	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential

Comments: No sample taken - no flow

Duplicate - Sample ID.: _____ Time: _____

Field Blank - Sample ID.: _____ Time: _____

(If no quality control samples were collected cross-out, initial. and date)

Signature: _____ Date: 5-14-24

AECOM

Well Purging and Sampling Collection

Site: BHCL-IDNR SPRING SAMPLE Well ID: GUE-1

Weather Conditions: _____ Project No.: _____

Sample Method (circle one): ~~Pumped~~ Other: _____ Bailed

Pump Type: (circle one) 0.85" dia. SS Bladder SS Mega-Monsoon 0.675" dia. SS Bladder Other: _____

Day 1 Date: 5-14-24

Pre-Purge Depth to Water: _____ feet Time: _____

Post-Purge Depth to Water: _____ feet Time: _____

Pump Dial Setting: _____ Flow Rate: _____

Total Purge Volume (actual): _____ gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date _____

Pre-Purge Depth to Water: _____ feet Time: _____

Post-Purge Depth to Water: _____ feet Time: _____

Total Purge Volume: _____ gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = _____ feet h_t = Length of Tubing in Well = _____ feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = _____ gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = _____ gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = _____ gallons

T = Total Purge Volume (Gallons) = **S** + **P** = _____ gallons

Depth to Bottom: _____ feet Time: _____ (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system.

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond.	Temp.	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential

Comments: No sample taken - Not functional

Duplicate - Sample ID.: _____ Time: _____

Field Blank - Sample ID.: _____ Time: _____

(If no quality control samples were collected cross-out, initial, and date)

Signature: _____ Date: 5-14-24

AECOM

Well Purging and Sampling Collection

Site: BHCL - IDNR SPRING SAMPLE Well ID: GUW2-1

Weather Conditions: Overcast 65° Project No.:

Sample Method (circle one): Pumped Other: Grab / Bailed

Pump Type: (circle one) 0.85" dia. SS Bladder SS Mega-Monsoon / 0.675" dia. SS Bladder Other:

Day 1 Date: 5-14-24

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Pump Dial Setting: Flow Rate:

Total Purge Volume (actual): gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date:

Pre-Purge Oepth to Water: feet Time:

Post-Purge Oepth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = **S** + P = gallons

Depth to Bottom. feet Time: (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system.

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond.	Temp	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
5-14-24	1330			7.13	15.88	22.7	Clear	9.74	—	87

Comments: Sampled @ 1330
Sample was clear
Duplicate # 3 taken
5 bottles collected

Duplicate - Sample ID.: #3 Time: 1330
Field Blank - Sample ID.: Time:
(If no quality control samples were collected cross-out, initial, and date)

Signature: Date: 5-14-24

AECOM

Well Purging and Sampling Collection

Site: BHCL - IDNR SPRING SAMPLE Well ID: OW-216BR

Weather Conditions: Overcast 64° Project No.:

Sample Method (circle one): Pumped / Bailed Other:

Pump Type (circle one): 0.85" dia. SS Bladder / 0.675" dia. SS Bladder / SS Mega-Monsoon / Other:

Day 1 Date: 5-14-24

Pre-Purge Depth to Water: 5.48 feet Time: 1215

Post-Purge Depth to Water: 8.36 feet Time:

Pump Dial Setting: 165 Flow Rate: 100 ml/min

Total Purge Volume (actual): 1000 ml @ Sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date:

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet

h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = S + P = gallons

Depth to Bottom 21.60 feet Time: (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system.

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond	Temp	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
5-14-24	1230			7.50	769.34	18.68	Clear	3.27	3.73	102.8
	1240			7.24	733.53	15.83	Clear	3.71	4.03	116.9

Comments: Sampled @ 1300
Initial purge volume was clear with low turbidity
Sample was clear
5 bottles collected

Duplicate - Sample ID.: Time.

Field Blank - Sample ID.: Time:

(If no quality control samples were collected cross-out, initial, and date)

Signature: Date: 5-14-24

AECOM

Well Purging and Sampling Collection

Site: BHCL- IDNR SPRING SAMPLE Well ID OW-114B

Weather Conditions: Overcast 61° Project No.:

Sample Method (circle one): Pumped Other: Bailed

Pump Type (circle one): 0.85" dia. SS Bladder SS Mega-Monsoon 0.675" dia. SS Bladder Other:

Day 1 Date: 5-14-24

Pre-Purge Depth to Water: 5.51 feet Time: 1100

Post-Purge Depth to Water: 6.18 feet Time: 1205

Pump Dial Setting: 165 Flow Rate: 100ml/min

Total Purge Volume (actual): 1000 ml @ Sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date.

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = **S** + **P** = gallons

Depth to Bottom: 22.70 feet Time: (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system.

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond.	Temp	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
5-14-24	1110			7.03	1706.5	17.25	Clear	34.14	1.93	1.4
	1120			6.77	1593.6	14.64	Clear	19.11	2.83	39.4

Comments: Sampled @ 1100
Initial purge volume was clear with low turbidity
Sample was clear
5 bottles collected

Duplicate - Sample ID.: Time:

Field Blank - Sample ID.: Time:

(If no quality control samples were collected cross-out, initial, and date)

Signature: Date. 5-14-24

AECOM

Well Purging and Sampling Collection

Site: BHCL- IDNR SPRING SAMPLE Well ID: OW-401B

Weather Conditions: Overcast 60° Project No.:

Sample Method (circle one): Pumped Other: Bailed

Pump Type (circle one): 0.85" dia. SS Bladder SS Mega-Monsoon 0.675" dia. SS Bladder Other:

Day 1 Date: 5-14-24

Pre-Purge Depth to Water: 14.67 feet Time: 0900

Post-Purge Depth to Water: 26.23 feet Time: 1055

Pump Dial Setting: 165 Flow Rate: 100 ml/min

Total Purge Volume (actual): 1000 ml ⊕ Sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = **S** + **P** = gallons

Depth to Bottom: 30.04 feet Time: (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system.

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond.	Temp	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
5-14-24	0950			6.50	4320.3	16.23	Clear	1.72	1.25	138.6
	1000			6.53	4302.5	14.95	Clear	3.37	1.31	68.9

Comments: Sampled @ 1030
Initial purge volume was clear with low turbidity
Sample was clear
10 bottles collected

Duplicate - Sample ID.: Time:

Field Blank - Sample ID.: Time:

(If no quality control samples were collected cross-out, initial, and date)

Signature: Date: 5-14-24

AECOM

Well Purging and Sampling Collection

Site: BHCL-IDNR SPRING SAMPLE Well ID: OW-101B

Weather Conditions: Cloudy 63° Project No.:

Sample Method (circle one): Pumped / Bailed Other:

Pump Type (circle one): 0.85" dia. SS Bladder / 0.675" dia. SS Bladder / SS Mega-Monsoon / Other:

Day 1 Date: 5-8-24

Pre-Purge Depth to Water: 6.79 feet Time: 0900

Post-Purge Depth to Water: 8.14 feet Time: 1020

Pump Dial Setting: 165 Flow Rate: 100 ml/min

Total Purge Volume (actual): 1000 ml @ sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date:

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = **S** + P = gallons

Depth to Bottom: 33.00 feet Time: (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond.	Temp	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
5-8-24	0948			7.32	601.10	16.51	Clear	7.49	4.35	178.5
	0955			7.24	591.20	13.62	Clear	3.50	2.32	194.1

Comments: Sampled @ 1000
Initial purge volume was clear with low turbidity
Sample was clear
5 bottles collected

Duplicate - Sample ID.: Time:

Field Blank - Sample ID.: Time:

(If no quality control samples were collected cross-out, initial, and date)

Signature: Date: 5-8-24

AECOM

Well Purging and Sampling Collection

Site: BHCL - IDNR SPRING SAMPLE Well ID: OW-414B

Weather Conditions: Cloudy 63° Project No.:

Sample Method (circle one): Pumped Other: Bailed

Pump Type (circle one): 0.85" dia. SS Bladder SS Mega-Monsoon 0.675" dia. SS Bladder Other:

Day 1 Date: 5-8-24

Pre-Purge Depth to Water: 23.29 feet Time: 1130

Post-Purge Depth to Water: 23.42 feet Time: 1305

Pump Dial Setting: 165 Flow Rate: 100 ml/min

Total Purge Volume (actual): 1000 ml @ sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date:

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = **S** + **P** = gallons

Depth to Bottom: 31.89 feet Time: (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system.

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond.	Temp.	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
5-8-24	1140			6.41	2807.6	22.88	Clear	4.08	1.80	192.9
	1150			6.36	2804.6	20.13	clear	1.01	0.43	63.4

Comments: Sampled @ 1300
Initial purge volume was clear with low turbidity
Sample was clear
5 bottles collected

Duplicate - Sample ID.: Time:

Field Blank - Sample ID.: Time:

(If no quality control samples were collected cross-out, initial, and date)

Signature: Date: 5-8-24

AECOM

Well Purging and Sampling Collection

Site: BHCL- IDNR SPRING SAMPLE Well ID: OW-319B

Weather Conditions: Cloudy 64° Project No.:

Sample Method (circle one): Pumped Other: Bailed

Pump Type: (circle one) 0.85" dia. SS Bladder SS Mega-Monsoon 0.675" dia. SS Bladder Other:

Day 1 Date: 5-8-24

Pre-Purge Depth to Water: 7.21 feet Time: 1030

Post-Purge Depth to Water: 8.75 feet Time: 1110

Pump Dial Setting: 165 Flow Rate: 100 ml/min

Total Purge Volume (actual): 1000 ml (1) sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date.

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = **S** + **P** = gallons

Depth to Bottom: 19.30 feet Time (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system.

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond.	Temp	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
5-8-24	1040			7.45	610.77	17.15	Clear	2.23	8.62	201.9
	1050			7.40	807.22	14.40	Clear	6.36	9.19	209.8

Comments: Sampled @ 1100
Initial purge volume was clear with low turbidity.
Sample was clear
5 bottles collected

Duplicate - Sample ID.: Time:

Field Blank - Sample ID.: Time:

(If no quality control samples were collected cross-out, initial, and date)

Signature: Date: 5-8-24

AECOM

Well Purging and Sampling Collection

Site: BHCL- IDNR SPRING SAMPLE Well ID: OW-105B

Weather Conditions: Sunny 73° Project No.:

Sample Method (circle one): Pumped Other: ____ Bailed

Pump Type (circle one): 0.85" dia. SS Bladder SS Mega-Monsoon 0.675" dia. SS Bladder Other: ____

Day 1 Date: 5-7-24

Pre-Purge Depth to Water: 15.24 feet Time: 1415

Post-Purge Depth to Water: 17.43 feet Time: 1530

Pump Dial Setting: 165 Flow Rate: 100 ml/min

Total Purge Volume (actual): 1000 ml @ sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date.

Pre-Purge Depth to Water: ____ feet Time: ____

Post-Purge Depth to Water: ____ feet Time: ____

Total Purge Volume: ____ gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = ____ feet h_t = Length of Tubing in Well = ____ feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = ____ gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = ____ gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = ____ gallons

T = Total Purge Volume (Gallons) = **S** + **P** = ____ gallons

Depth to Bottom 34.37 feet Time ____ (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond	Temp	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
5-7-24	1425			7.11	993.64	23.30	Clear	1.09	4.15	223.5
	1435			7.07	953.01	20.36	Clear	4.15	4.09	236.7

Comments: Sampled @ 1445
Initial purge volume was clear with low turbidity
Sample was clear

5 bottles collected

Duplicate - Sample ID.: ____ Time: ____

Field Blank - Sample ID.: ____ Time: ____

(If no quality control samples were collected cross-out, initial, and date)

Signature: Date: 5-7-24

AECOM

Well Purging and Sampling Collection

Site: BHCL IDNR SPRING SAMPLE Well ID: GUE-2

Weather Conditions: Sunny 71° Project No.:

Sample Method (circle one): Pumped / Bailed Other: Grab

Pump Type: (circle one) 0.85" dia. SS Bladder / 0.675" dia. SS Bladder / SS Mega-Monsoon / Other:

Day 1 Date: 6-7-24

Pre-Purge Depth to Water: _____ feet Time: _____

Post-Purge Depth to Water: _____ feet Time: _____

Pump Dial Setting: _____ Flow Rate: _____

Total Purge Volume (actual): _____ gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date: _____

Pre-Purge Depth to Water: _____ feet Time: _____

Post-Purge Depth to Water: _____ feet Time: _____

Total Purge Volume: _____ gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = _____ feet

h_t = Length of Tubing in Well = _____ feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = _____ gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = _____ gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = _____ gallons

T = Total Purge Volume (Gallons) = **S** + **P** = _____ gallons

Depth to Bottom: _____ feet Time: _____ (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system.

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond.	Temp.	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
6-7-24				7.37	3133	14.9	Clear	11.73	—	185

Comments: Sampled @ 1300
Sample was clear
5 bottles collected

Duplicate - Sample ID.: — Time: —

Field Blank - Sample ID.: — Time: —

(If no quality control samples were collected cross-out, initial, and date)

Signature: Date: 6-7-24

AECOM

Well Purging and Sampling Collection

Site: BHCL - IDNR SPRING SAMPLE Well ID: OW-213BR

Weather Conditions: Sunny Windy 70° Project No.:

Sample Method (circle one): Pumped Other: Bailed

Pump Type: (circle one) 0.85" dia. SS Bladder SS Mega-Monsoon 0.675" dia. SS Bladder Other:

Day 1 Date: 5-6-24

Pre-Purge Depth to Water: 9.33 feet Time: 1515

Post-Purge Depth to Water: 9.91 feet Time: 1650

Pump Dial Setting: 165 Flow Rate: 100 ml/min

Total Purge Volume (actual): 1000 ml @ sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet

h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0 163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8' diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = **S** + P = gallons

Depth to Bottom: 23.25 feet Time: (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system.

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond.	Temp	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
5-6-24	1525			6.90	1401.8	22.65	Clear	1.44	3.11	262.7
	1535			6.52	1409.2	17.20	Clear	2.49	0.82	268.9

Comments: Sampled @ 1600
Initial purge volume was clear with low turbidity
Sample was clear
5 bottles collected

Duplicate - Sample ID.: Time:

Field Blank - Sample ID.: Time:

(If no quality control samples were collected cross-out, initial, and date)

Signature: Date: 5-6-24

Well Purging and Sampling Collection

Site: BHCL - SPRING SAMPLE IDNR Well ID: OW-219B

Weather Conditions: Sunny 71° Project No.:

Sample Method (circle one): Pumped Other: Bailed

Pump Type: (circle one) 0.85" dia. SS Bladder SS Mega-Monsoon 0.675" dia. SS Bladder Other:

Day 1 Date: 5-6-24

Pre-Purge Depth to Water: 5.41 feet Time: 1410

Post-Purge Depth to Water: 5.93 feet Time: 1500

Pump Dial Setting: 165 Flow Rate: 100 ml/min

Total Purge Volume (actual): 1000 ml @ sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = S + P = gallons

Depth to Bottom: 20.11 feet Time: (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system.

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond.	Temp	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
5-6-24	1415			7.03	1408.3	22.32	Clear	10.67	2.49	244.7
	1425			6.75	1374.9	18.48	Clear	3.31	1.35	259.8

Comments: Sampled @ 1445
Initial purge volume was clear with low turbidity
Sample was clear
Dup. #2 & Equipment Blank #1 taken
5 bottles collected

Duplicate - Sample ID.: #2 Time. 1445

Field Blank - Sample ID.: #1 Time: 1500

(If no quality control samples were collected cross-out, initial, and date)

Signature: Date: 5-6-24

AECOM

Well Purging and Sampling Collection

Site: BHCL - IDNR SPRING SAMPLE Well ID: OW-2123

Weather Conditions: Sunny Windy Project No.:

Sample Method (circle one): Pumped Other: / Bailed

Pump Type (circle one): 0.85" dia. SS Bladder SS Mega-Monsoon 0.675" dia. SS Bladder Other:

Day 1 Date: 5-6-24

Pre-Purge Depth to Water: 6.71 feet Time: 1250

Post-Purge Depth to Water: 9.57 feet Time: 1355

Pump Dial Setting: 165 Flow Rate: 100 ml/min

Total Purge Volume (actual): 1000 ml @ Sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = S + P = gallons

Depth to Bottom: 21.60 feet Time: (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system.

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond.	Temp.	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
5-6-24	1305		~~0~~	6.76	2121.9	21.21	Clear	9.22	1.34	241.2
	1315			6.70	2162.2	18.14	Clear	6.46	6.62	246.7

Comments Sampled @ 1330
Initial purge volume was clear with low turbidity
Sample was clear
5 bottles collected

Duplicate - Sample ID.: — Time: —

Field Blank - Sample ID.: — Time: —

(If no quality control samples were collected cross-out, initial. and date)

Signature Date: 5-6-24

AECOM

Well Purging and Sampling Collection

Site: BHCL - SPRING SAMPLE Well ID: OW-209B

Weather Conditions: Sunny Windy 69° Project No.:

Sample Method (circle one): Pumped Bailed Other:

Pump Type: (circle one) 0.85" dia. SS Bladder SS Mega-Monsoon 0.675" dia. SS Bladder Other:

Day 1 Date: 5-6-24

Pre-Purge Depth to Water: 5.49 feet Time: 1115

Post-Purge Depth to Water: 9.27 feet Time: 1235

Pump Dial Setting: 165 Flow Rate: 100 ml/min

Total Purge Volume (actual): 1000 ml @ Sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date:

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = S + P = gallons

Depth to Bottom: 25.96 feet Time: (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond.	Temp	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
5-6-24	1200			6.77	1116.1	20.90	Clear	14.40	2.51	200.6
	1210			6.78	1104.2	17.96	Clear	2.28	2.57	214.4

Comments: Sampled @ 1220
Initial purge volume was clear with low turbidity
Sample was clear
5 bottles collected

Duplicate - Sample ID.: Time:

Field Blank - Sample ID.: Time:

(If no quality control samples were collected cross-out, initial, and date)

Signature: Date: 5-6-24

Well Purging and Sampling Collection

Site: BHCL - IDNR SPRING SAMPLE Well ID: GUW-3-1

Weather Conditions: Sunny 51 Project No.:

Sample Method (circle one): Pumped Bailed Other: Grab

Pump Type: (circle one) 0.85" dia. SS Bladder SS Mega-Monsoon 0.675" dia. SS Bladder Other:

Day 1 Date: 5-3-24

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Pump Dial Setting: Flow Rate:

Total Purge Volume (actual): gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date.

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0 006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = **S** + P = gallons

Depth to Bottom: feet Time: (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond	Temp	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
5-3-24	0830			7.01	1829	13.4	Clear	9.27	—	34

Comments: Sampled @ 0830

Sample was clear S Settles

Duplicate - Sample ID.: Time.

Field Blank - Sample ID.: Time:

(If no quality control samples were collected cross-out, initial, and date)

Signature: Date: 5-3-24

AECOM

Well Purging and Sampling Collection

Site: BHCL-IDNR SPRING SAMPLE Well ID: GUX-1

Weather Conditions: Sunny 50° Project No.:

Sample Method (circle one): Pumped Other: Grab / Bailed

Pump Type: (circle one) 0.85" dia. SS Bladder SS Mega-Monsoon / 0.675" dia. SS Bladder Other:

Day 1 Date: 5-3-24

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Pump Dial Setting: Flow Rate:

Total Purge Volume (actual): gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date.

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time.

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0 163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = S + **P** = gallons

Depth to Bottom: feet Time: (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system.

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond.	Temp.	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
5-3-24	0745			7.65	1641	18.1	Clear	11.42	—	118

Comments: Sampled @ 0745
Sample was clear
5 bottles collected

Duplicate - Sample ID.: — Time: —

Field Blank - Sample ID.: — Time: —

(If no quality control samples were collected cross-out, initial, and date)

Signature: Date: 5-3-24

AECOM

Well Purging and Sampling Collection

Site: BHCL-IDNR SPRING SAMPLE Well ID: MW-604B

Weather Conditions: Cloudy - 60 Project No.:

Sample Method (circle one): Pumped Other: Bailed

Pump Type: (circle one) 0.85" dia. SS Bladder SS Mega-Monsoon 0.675" dia. SS Bladder Other:

Day 1 Date: 5-1-24

Pre-Purge Depth to Water: 11.07 feet Time: 1400

Post-Purge Depth to Water: 13.92 feet Time: 1545

Pump Dial Setting: 165 Flow Rate: 120 ml/min

Total Purge Volume (actual): 1000 ml @ Sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0 163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = **S** + **P** = gallons

Depth to Bottom: 27.60 feet Time: (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond.	Temp.	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
5-1-24	1410			7.30	998.46	17.50	Clear	0.78	3.26	230.6
	1420			7.08	1008.4	15.81	Clear	6.52	3.38	237.3

Comments Sampled @ 1530

Initial purge volume was clear with low turbidity

Sample was clear

5 bottles collected

Duplicate - Sample ID.: Time

Field Blank - Sample ID.: Time:

(If no quality control samples were collected cross-out, initial, and date)

Signature: Date: 5-1-24

AECOM

Well Purging and Sampling Collection

Site: BHCL - IDNR SPRING SAMPLE Well ID. MW-710B

Weather Conditions: Sunny - Windy 60° Project No.:

Sample Method (circle one): Pumped Other: Bailed

Pump Type: (circle one) 0.85" dia. SS Bladder SS Mega-Monsoon 0.675" dia. SS Bladder Other:

Day 1 Date: 5-1-24

Pre-Purge Depth to Water: 16.04 feet Time: 1210

Post-Purge Depth to Water: 16.15 feet Time: 1255

Pump Dial Setting: 165 Flow Rate: 100 ml/min

Total Purge Volume (actual): 1000 ml ⊕ sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = **S** + **P** = gallons

Depth to Bottom: 28.00 feet Time: (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system.

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond.	Temp.	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
5-1-24	1215			7.21	896.33	17.62	Clear	1.25	4.98	220.5
	1225			6.98	888.39	15.21	Clear	4.49	4.09	231.3

Comments: Sampled @ 1245
Initial purge volume was clear with low turbidity
Sample was clear

5 bottles collected

Duplicate - Sample ID.: — Time. —

Field Blank - Sample ID.: — Time: —

(If no quality control samples were collected cross-out, initial, and date)

Signature: Date. 5-1-24

AECOM

Well Purging and Sampling Collection

Site: BHCL - IDNR SPRING SAMPLE Well ID: MW-501B

Weather Conditions: Sunny 60° Project No.:

Sample Method (circle one): Pumped Other: Bailed

Pump Type: (circle one) 0.85" dia. SS Bladder SS Mega-Monsoon 0.675" dia. SS Bladder Other:

Day 1 Date: 5-1-24

Pre-Purge Depth to Water: 9.11 feet Time: 1300

Post-Purge Depth to Water: 9.87 feet Time: 1350

Pump Dial Setting: 165 Flow Rate: 100 ml/min

Total Purge Volume (actual): 1000 ml @ sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date:

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = **S** + P = gallons

Depth to Bottom: 31.23 feet Time (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system.

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond.	Temp.	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
5-1-24	1310			7.45	681.95	18.64	Clear	0.32	2.35	216.9
	1320			7.46	676.85	15.88	Clear	2.96	2.14	216.6

Comments: Sampled @ 1330
Initial purge volume was clear with low turbidity
Sample was clear

5 bottles collected

Duplicate - Sample ID.: — Time. —

Field Blank - Sample ID.: — Time: —

(If no quality control samples were collected cross-out, initial, and date)

Signature: Date: 5-1-24

AECOM

Well Purging and Sampling Collection

Site: BHCL - IDNR SPRING SAMPLE Well ID. MW-7113

Weather Conditions: Part./Sunny 64° Project No.:

Sample Method (circle one): Pumped Other: Bailed

Pump Type: (circle one) 0.85" dia. SS Bladder SS Mega-Monsoon 0.675" dia. SS Bladder Other:

Day 1 Date: 4-30-24

Pre-Purge Depth to Water: 8.51 feet Time: 1200

Post-Purge Depth to Water: 8.52 feet Time: 1250

Pump Dial Setting: 165 Flow Rate: 100 ml/min

Total Purge Volume (actual): 1000 ml @ sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date.

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = S + P = gallons

Depth to Bottom: 23.50 feet Time (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond.	Temp	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
4-30-24	1205			6.73	1618.6	20.01	Clear	6.37	2.65	266.8
	1215			6.67	1625.5	18.79	Clear	26.14	2.98	265.4

Comments: Sampled @ 1220
Initial purge volume was clear with low turbidity
Sample was clear

5 bottles collected

Duplicate - Sample ID.: Time:

Field Blank - Sample ID.: Time:

(If no quality control samples were collected cross-out, initial, and date)

Signature: Date. 4-30-24

Well Purging and Sampling Collection

Site: BHCL-JDNR SPRING SAMPLE Well ID: MW-712B

Weather Conditions: Part/Cloudy 65° windy Project No.:

Sample Method (circle one): Pumped Other: Bailed

Pump Type: (circle one) 0.85" dia. SS Bladder SS Mega-Monsoon 0.675" dia. SS Bladder Other:

Day 1 Date: 4-30-24

Pre-Purge Depth to Water: 13.56 feet Time: 1310

Post-Purge Depth to Water: 14.24 feet Time: 1450

Pump Dial Setting: 165 Flow Rate: 100 ml/min

Total Purge Volume (actual): 1000 ml @ sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date:

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = **S** + **P** = gallons

Depth to Bottom: 22.66 feet Time (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system.

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond	Temp.	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
4-30-24	1315			6.63	1598.3	21.63	Clear	2.98	2.04	278.9
	1325			6.48	1587.3	18.84	Clear	2.63	0.65	282.7

Comments Sampled @ 1345

Initial purge volume was clear with low turbidity

Sample was clear

5 bottles collected

Duplicate - Sample ID.: Time:

Field Blank - Sample ID.: Time:

(If no quality control samples were collected cross-out, initial, and date)

Signature: Date: 4-30-24

AECOM

Well Purging and Sampling Collection

Site: BHCL - IDNR SPRING SAMPLE Well ID: MW-602B

Weather Conditions: Cloudy - Windy 60° Project No.:

Sample Method (circle one): Pumped Other: ____ Bailed

Pump Type: (circle one) 0.85" dia. SS Bladder SS Mega-Monsoon 0.675" dia. SS Bladder Other: ____

Day 1 Date: 5-1-24

Pre-Purge Depth to Water: 11.99 feet Time: 1030

Post-Purge Depth to Water: 12.98 feet Time: 1200

Pump Dial Setting: 165 Flow Rate: 100 ml/min

Total Purge Volume (actual): 1000 ml ⊕ Sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date: ____

Pre-Purge Depth to Water: ____ feet Time: ____

Post-Purge Depth to Water: ____ feet Time: ____

Total Purge Volume: ____ gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = ____ feet h_t = Length of Tubing in Well = ____ feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = ____ gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = ____ gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = ____ gallons

T = Total Purge Volume (Gallons) = S + P = ____ gallons

Depth to Bottom: 22.65 feet Time: ____ (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system.

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond.	Temp	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
5-1-24	1110			7.13	1171.5	15.88	Clear	1.26	2.53	224.8
	1120			7.07	1159.7	14.87	Clear	1.09	0.63	230.5

Comments: Sampled @ 1130
Initial purge volume was clear with low turbidity
Sample was clear
Duplicate #1 taken
5 bottles collected

Duplicate - Sample ID.: #1 Time. ____

Field Blank - Sample ID.: — Time: —

(If no quality control samples were collected cross-out, initial, and date)

Signature: Date. 5-1-24

AECOM

Well Purging and Sampling Collection

Site: BHCL-IDNR SPRING SAMPLE Well ID: MW-709B

Weather Conditions: Sunny 64° Project No.:

Sample Method (circle one): Pumped Other: Bailed

Pump Type: (circle one) 0.85" dia. SS Bladder SS Mega-Monsoon 0.675" dia. SS Bladder Other:

Day 1 Date: 4-30-24

Pre-Purge Depth to Water: 18.80 feet Time: 1030

Post-Purge Depth to Water: 19.27 feet Time: 1150

Pump Dial Setting: 165 Flow Rate: 180 ml/min

Total Purge Volume (actual): 1000 ml ⊕ Sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date:

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0 163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = S + P = gallons

Depth to Bottom. 27.33 feet Time: (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system.

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond.	Temp.	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
4-30-24	1110			6.78	1500.3	19.19	Clear	3.36	4.99	222
				6.98	1408.2	16.35	Clear	7.08	6.77	234.6

Comments: Sampled @ 1130
Initial purge volume was clear with low turbidity
Sample was clear
5 bottles collected

Duplicate - Sample ID.: — Time: —

Field Blank - Sample ID.: — Time: —

(If no quality control samples were collected cross-out, initial, and date)

Signature: Date: 4-30-24

AECOM

Well Purging and Sampling Collection

Site: BHCL - IDNR SPRING SAMPLE Well ID: OW-224B

Weather Conditions: Sunny 59° Project No.:

Sample Method (circle one): Pumped Other: Bailed

Pump Type: (circle one) 0.85" dia. SS Bladder SS Mega-Monsoon 0.675" dia. SS Bladder Other:

Day 1 Date: 4-24-24

Pre-Purge Depth to Water: 12.22 feet Time: 1400

Post-Purge Depth to Water: 12.98 feet Time: 1435

Pump Dial Setting: 165 Flow Rate: 100 ml/min

Total Purge Volume (actual): 1000 ml @ sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = S + P = gallons

Depth to Bottom: 22.32 feet Time: (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system.

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond.	Temp.	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
4-24-24	1405			6.62	5797.3	19.96	Clear	20.13	1.79	118.3
	1415			6.60	6007.9	14.27	Clear	67.89	1.10	97.3

Comments Sampled @ 1430
Initial purge volume was clear with low turbidity
Sample was cloudy as turbidity increased during purge
5 bottles collected

Duplicate - Sample ID.. Time:

Field Blank - Sample ID.: Time:

(If no quality control samples were collected cross-out, initial, and date)

Signature: Date: 4-24-24

AECOM

Well Purging and Sampling Collection

Site: BHCL - IDNR SPRING SAMPLE Well ID: OW-205B

Weather Conditions: Sunny 57° Project No.:

Sample Method (circle one): Pumped Other: Bailed

Pump Type: (circle one) 0.85" dia. SS Bladder SS Mega-Monsoon 0.675" dia. SS Bladder Other:

Day 1 Date: 4-24-24

Pre-Purge Depth to Water: 8.62 feet Time: 1230

Post-Purge Depth to Water: 8.80 feet Time: 1355

Pump Dial Setting: 165 Flow Rate: 100ml/min

Total Purge Volume (actual): 1000 ml @ sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date:

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = S + P = gallons

Depth to Bottom: 23.70 feet Time: (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system.

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond.	Temp.	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
4-24-24	1305			6.48	1811.2	19.55	Cloudy	129.62	2.25	201.4
	1315			6.48	1832.1	17.66	Cloudy	59.73	2.08	178.2

Comments: Sampled @ 1330
Initial purge volume was cloudy with high turbidity
Sample was cloudyish with decreased turbidity
8 bottles collected

Duplicate - Sample ID.: — Time: —

Field Blank - Sample ID.: — Time: —

(If no quality control samples were collected cross-out, initial, and date)

Signature: Date: 4-24-24

AECOM

Well Purging and Sampling Collection

Site: BHCL - IDNR SPRING SAMPLE Well ID: OW-225B

Weather Conditions: Sumy 59° Project No.:

Sample Method (circle one): Pumped Other: Bailed

Pump Type (circle one): 0.85" dia. SS Bladder SS Mega-Monsoon 0.675" dia. SS Bladder Other:

Day 1 Date: 4-24-24

Pre-Purge Depth to Water: 10.69 feet Time: 1445

Post-Purge Depth to Water: 12.26 feet Time: 1600

Pump Dial Setting: 165 Flow Rate: 100 ml/min

Total Purge Volume (actual): 1000 ml @ sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = S + P = gallons

Depth to Bottom: 21.65 feet Time (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond	Temp	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
4-24-24	1450			6.80	5484.6	19.52	Cloudy	43.70	3.03	88.3
	1500			6.62	5451.6	14.94	Cloudy	48.28	1.04	97.4

Comments: Sampled @ 1550

Initial purge volume was cloudy with increased turbidity

Sample was cloudy with increased turbidity

5 bottles collected

Duplicate - Sample ID.: Time:

Field Blank - Sample ID.: Time:

(If no quality control samples were collected cross-out, initial, and date)

Signature: Date: 4-24-24

AECOM

Well Purging and Sampling Collection

Site: BHCL - IDNR SPRING SAMPLE Well ID: OW-22B

Weather Conditions: Sunny Windy 67° Project No.:

Sample Method (circle one): Pumped Bailed Other:

Pump Type (circle one): 0.85" dia. SS Bladder SS Mega-Monsoon 0.675" dia. SS Bladder Other:

Day 1 Date: 4-23-24

Pre-Purge Depth to Water: 16.79 feet Time: 1505

Post-Purge Depth to Water: 17.45 feet Time: 1605

Pump Dial Setting: 165 Flow Rate: 100 ml/min

Total Purge Volume (actual): 1000 ml @ sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date.

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = **S** + **P** = gallons

Depth to Bottom: 23.23 feet Time (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system.

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond	Temp	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
4-23-24	1505			6.80	790.92	18.80	Clear	9.75	1.03	19.3
	1515			6.58	781.31	16.48	Clear	13.42	1.24	27.2

Comments: Sampled @ 1600
Initial purge volume was clear with low turbidity
Sample was clear
5 bottles collected

Duplicate - Sample ID.: Time.

Field Blank - Sample ID.: Time:

(If no quality control samples were collected cross-out, initial, and date)

Signature: Date: 4-23-24

AECOM

Well Purging and Sampling Collection

Site: BHCL-IDNR SPRING SAMPLE Well ID: OW-223B

Weather Conditions: Sunny Windy 66° Project No.:

Sample Method (circle one): Pumped Other: Bailed

Pump Type: (circle one) 0.85" dia. SS Bladder SS Mega-Monsoon 0.675" dia. SS Bladder Other:

Day 1 Date: 4-23-24

Pre-Purge Depth to Water: 16.43 feet Time: 1230

Post-Purge Depth to Water: 17.51 feet Time:

Pump Dial Setting: 165 Flow Rate: 100 ml/min

Total Purge Volume (actual): 1000 ml @ sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0 163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = **S** + **P** = gallons

Depth to Bottom: 20.23 feet Time: (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond.	Temp.	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
4-23-24	1320			7.10	1169.0	19.35	Clear	4.41	7.22	161.3
	1330			6.97	1093.1	16.48	Clear	6.04	7.47	199.4

Comments: Sampled @ 1345

Initial purge volume was clear with low turbidity

Sample was clear

5 bottles collected

Duplicate - Sample ID.: — Time —

Field Blank - Sample ID.: — Time —

(If no quality control samples were collected cross-out, initial, and date)

Signature: Date: 4-23-24

AECOM

Well Purging and Sampling Collection

Site: BHCL - IDNR SPRING SAMPLE Well ID. OW-2223

Weather Conditions: Sunny Windy 66° Project No.:

Sample Method (circle one): Pumped Other: Bailed

Pump Type: (circle one) 0.85" dia. SS Bladder SS Mega-Monsoon 0.675" dia. SS Bladder Other:

Day 1 Date: 4-23-24

Pre-Purge Depth to Water: 14.92 feet Time: 1410

Post-Purge Depth to Water: 15.76 feet Time: 1450

Pump Dial Setting: 165 Flow Rate: 100 ml/min

Total Purge Volume (actual): 1000 ml @ sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = **S** + **P** = gallons

Depth to Bottom: 20.23 feet Time: (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system.

Date	Time	Depth to Water (D.T.W)	Volume Removed (Gal.)	pH	Cond.	Temp.	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
4-23-24	1425			6.78	1376.1	19.69	Clear	3.56	1.86	201.9
	1435			6.61	1389.5	18.18	Clear	12.30	1.13	119.7

Comments: Sampled @ 1445
Initial purge volume was clear with low turbidity
Sample was clear
5 bottles collected

Duplicate - Sample ID.: — Time: —

Field Blank - Sample ID.: — Time: —

(if no quality control samples were collected cross-out, initial, and date)

Signature: Date: 4-23-24

AECOM

Well Purging and Sampling Collection

Site: BHCL - IDNR SUMMER RESAMPLE Well ID: P-216C

Weather Conditions: Sunny 58° Project No.:

Sample Method (circle one): Pumped Other: Bailed

Pump Type: (circle one) 0.85" dia. SS Bladder SS Mega-Monsoon 0.675" dia. SS Bladder Other:

Day 1 Date: 8-9-24

Pre-Purge Depth to Water: 110.17 feet Time: 0800

Post-Purge Depth to Water: 110.21 feet Time:

Pump Dial Setting: 108 Flow Rate: 100 ml/min

Total Purge Volume (actual): 1000 ml ⊕ Sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date:

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = **S** + **P** = gallons

Depth to Bottom: 136.20 feet Time: (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system.

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond.	Temp.	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
8-9-24	0840			7.47	1459.4	14.45	Clear	6.92	3.20	189.8
	0850			7.42	1426.5	13.87	Clear	3.03	1.03	197.2

Comments: Sampled @ 0900
Initial purge was clear with low turbidity
Sample was clear
5 bottles collected

Duplicate - Sample ID.: — Time: —

Field Blank - Sample ID.: — Time:

(If no quality control samples were collected cross-out, initial, and date)

Signature: Date: 8-9-24

AECOM

Well Purging and Sampling Collection

Site: BHCL - IDNR SUMMER SAMPLE Well ID: P-214CR

Weather Conditions: Overcast 60° Project No.:

Sample Method (circle one): Pumped Other: Bailed

Pump Type: (circle one) 0.85" dia. SS Bladder SS Mega-Monsoon 0.675" dia. SS Bladder Other:

Day 1 Date: 8-9-24

Pre-Purge Depth to Water: 98.73 feet Time: 1110

Post-Purge Depth to Water: 99.11 feet Time: 1330

Pump Dial Setting: 108 Flow Rate: 100 ml/min

Total Purge Volume (actual): 1000 ml @ sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date:

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = **S** + P = gallons

Depth to Bottom: 110.62 feet Time: (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system.

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond.	Temp.	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
8-9-24	1120			8.89	1237.4	25.76	clear	31.63	3.79	168.8
	1130			8.84	1239.1	27.51	Clear	8.98	4.07	174

Comments: Sampled @ 1230
Initial purge was clear with lower turbidity
Sample was
Equipment Blank taken
5 bottles collected

Duplicate - Sample ID.: — Time: —

Field Blank - Sample ID.: #1 Time: 1300

(If no quality control samples were collected cross-out, initial, and date)

Signature: Date: 8-9-24

AECOM

Well Purging and Sampling Collection

Site: BHCL - IDNR SUMMER RESAMPLE Well ID: P-215CR

Weather Conditions: Sunny 60° Project No.:

Sample Method (circle one): Pumped / Bailed Other:

Pump Type: (circle one) 0.85" dia. SS Bladder / 0.675" dia. SS Bladder / SS Mega-Monsoon / Other:

Day 1 Date: 8-9-24

Pre-Purge Depth to Water: 100.47 feet Time: 0925

Post-Purge Depth to Water: 100.54 feet Time: 1100

Pump Dial Setting: 108 Flow Rate: 100ml/min

Total Purge Volume (actual): 1000ml @ Sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date:

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diametar) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = **S** + **P** = gallons

Depth to Bottom: 124.14 feet Time: (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system.

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond.	Temp.	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
8-9-24	0940			7.88	1410.7	18.55	Clear	10.06	2.78	200
	0950			7.55	1406.4	19.12	Clear	8.18	1.13	206.6

Comments: Sampled @ 1000
Initial purge was clear with low turbidity
Sample was clear
Duplicate #1 taken
5 bottles collected

Duplicate - Sample ID.: #1 Time: 1000

Field Blank - Sample ID.: Time:

(If no quality control samples were collected cross-out, initial, and date)

Signature: Date: 8-9-24

AECOM

Well Purging and Sampling Collection

Site: BHCL- IDNR SUMMER RESAMPLE Well ID: P-604C

Weather Conditions: Sunny 76° Project No.:

Sample Method (circle one): Pumped / Bailed Other:

Pump Type: (circle one) 0.85" dia. SS Bladder / 0.675" dia. SS Bladder / SS Mega-Monsoon / Other:

Day 1 Date: 8-2-24

Pre-Purge Depth to Water: 96.87 feet Time: 0900

Post-Purge Depth to Water: ? feet Time:

Pump Dial Setting: 108 Flow Rate: 100 ml/min

Total Purge Volume (actual): 1000 ml @ sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date:

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = **S** + **P** = gallons

Depth to Bottom: 121.71 feet Time: (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system.

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond.	Temp.	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
8-2-24	0945			6.76	2696	25.38	Clearish	29.76	1.49	158.9
				6.71	2602.3	25.73	Clear	14.26	1.76	97.4

Comments: Sampled @ 1000
Initial purge was clearish with lower turbidity
Sample was clear
Water level meter stopped working mid purge.
3 bottles (VOC) collected

Duplicate - Sample ID.: — Time: —

Field Blank - Sample ID.: — Time: —

(If no quality control samples were collected cross-out, initial, and date)

Signature: Date: 8-2-24

AECOM

Well Purging and Sampling Collection

Site: BHCL-IDNR SUMMER RESAMPLE Well ID: OW-2123

Weather Conditions: Sunny 78° Project No.:

Sample Method (circle one): Pumped Other: Bailed

Pump Type: (circle one) 0.85" dia. SS Bladder SS Mega-Monsoon 0.675" dia. SS Bladder Other:

Day 1 Date: 7-31-24

Pre-Purge Depth to Water: 9.31 feet Time: 1000

Post-Purge Depth to Water: 10.43 feet Time: 1100

Pump Dial Setting: 165 Flow Rate: 100 ml/min

Total Purge Volume (actual): 1000 ml @ sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date:

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = S + P = gallons

Depth to Bottom: 21.60 feet Time: (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond.	Temp.	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
7-31-24	1036			6.99	2296.8	22.86	Clear	7.08	3.24	215.3
	1040			6.76	2218.2	19.54	Clear	3.29	2.13	231.3

Comments: Sampled @ 1045
Initial purge was clear with low turbidity
Sample was clear
2 bottles collected

Duplicate - Sample ID.: — Time: —

Field Blank - Sample ID.: — Time: —

(If no quality control samples were collected cross-out, initial, and date)

Signature: Date: 7-31-24

AECOM

Well Purging and Sampling Collection

Site: BHCL-IDNR SUMMER RESAMPLE Well ID: OW-227B

Weather Conditions: Sunny Project No.:

Sample Method (circle one): Pumped Other: Bailed

Pump Type: (circle one) 0.85" dia. SS Bladder SS Mega-Monsoon 0.675" dia. SS Bladder Other:

Day 1 Date: 7-31-24

Pre-Purge Depth to Water: 9.81 feet Time: 1235

Post-Purge Depth to Water: 10.87 feet Time:

Pump Dial Setting: 165 Flow Rate: 100 ml/min

Total Purge Volume (actual): 1000 ml @ Sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date.

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = **S** + **P** = gallons

Depth to Bottom: 21.70 feet Time: (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system.

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond	Temp.	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
7-31-24	1240			6.96	5373.1	24.43	Clear	6.72	1.58	115.9
	1250			6.87	4956.7	22.58	Clear	6.77	1.13	106.9

Comments: Sampled @ [redacted] 1345
Initial purge was clear with low turbidity
@ Sample was
1 bottle collected

Duplicate - Sample ID.: Time:

Field Blank - Sample ID.: Time:

(If no quality control samples were collected cross-out, initial, and date)

Signature: Date: 7-31-24

AECOM

Well Purging and Sampling Collection

Site: BHCL - IDNR SUMMER RESAMPLE Well ID: OW-2263

Weather Conditions: Sunny 80° Project No.:

Sample Method (circle one): Pumped Bailed Other:

Pump Type (circle one): 0.85" dia. SS Bladder SS Mega-Monsoon 0.675" dia. SS Bladder Other:

Day 1 Date: 7-31-24

Pre-Purge Depth to Water: 12.11 feet Time: 1115

Post-Purge Depth to Water: 12.18 feet Time: 1155

Pump Dial Setting: 165 Flow Rate: 100 ml/min

Total Purge Volume (actual): 1000 ml ⊕ Sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date:

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0 163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8' diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = **S** + **P** = gallons

Depth to Bottom: 21.49 feet Time: (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system.

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond.	Temp.	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
7-31-24	1120			7.15	69800	22.19	Clear	2.79	1.82	251.5
	1130			7.13	6109.0	19.68	Clearish	19.15		

Comments: Sampled @ 1145
Initial purge volume was clear with low turbidity
Turbidity increased sample was clearish
3 bottles collected

Duplicate - Sample ID.: Time

Field Blank - Sample ID.: Time:

(If no quality control samples were collected cross-out, initial, and date)

Signature: Date: 7-31-24

AECOM

Well Purging and Sampling Collection

Site: BHCL-IDNR SUMMER RESAMPLE Well ID: OW-225B

Weather Conditions: Overcast 76° Project No.:

Sample Method (circle one): Pumped / Bailed Other:

Pump Type (circle one): 0.85" dia. SS Bladder / 0.675" dia. SS Bladder / SS Mega-Monsoon / Other:

Day 1 Date: 7-29-24

Pre-Purge Depth to Water: 10.27 feet Time: 1045

Post-Purge Depth to Water: 11.87 feet Time: 1150

Pump Dial Setting: 165 Flow Rate: 100 ml/min

Total Purge Volume (actual): 1000 ml @ sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date:

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = gallons

P = Bladdar Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = **S** + **P** = gallons

Depth to Bottom: 21.65 feet Time: (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system.

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond.	Temp.	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
7-29-24	1115			6.76	5509.9	22.67	Clearish	18.90	1.27	216
	1125			6.90	5419.2	22.22	Cloudy	60.59	2.57	195.3

Comments: Sampled @ 1140
Initial purge was clearish with lower turbidity
Sample was cloudy, turbidity increased during purge
2 bottles collected

Duplicate - Sample ID.: — Time: —

Field Blank - Sample ID.: — Time: —

(If no quality control samples were collected cross-out, initial, and date)

Signature: Date: 7-29-24

AECOM

Well Purging and Sampling Collection

Site: BHCL-IDNR SUMMER RESAMPLE Well ID: OW-401B

Weather Conditions: Overcast 76° Project No.:

Sample Method (circle one): Pumped Other: Bailed

Pump Type: (circle one) 0.85" dia. SS Bladder SS Mega-Monsoon 0.675" dia. SS Bladder Other:

Day 1 Date: 7-29-24

Pre-Purge Depth to Water: 24.19 feet Time: 1200

Post-Purge Depth to Water: 25.17 feet Time: 1400

Pump Dial Setting: 165 Flow Rate: 100 ml/min

Total Purge Volume (actual): 1000 ml @ Sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date:

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = **S** + **P** = gallons

Depth to Bottom: 30.04 feet Time: (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system.

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond.	Temp.	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
7-29-24	1215			6.90	4314.0	23.98	Clear	4.45	1.63	66.5
	1225			6.74	4151.8	22.33	Clear	7.54	0.50	35.2

Comments: Sampled @ 1330
Initial purge was clear with low turbidity
Sample was clear
2 bottles collected

Duplicate - Sample ID.: Time:

Field Blank - Sample ID.: Time:

(If no quality control samples were collected cross-out, initial, and date)

Signature: Date: 7-29-24

AECOM

Well Purging and Sampling Collection

Site: BHCL - IDNR SUMMER RESAMPLE Well ID: MW-712B

Weather Conditions: Overcast 71° Project No.:

Sample Method (circle one): Pumped Other: Bailed

Pump Type: (circle one) 0.85" dia. SS Bladder SS Mega-Monsoon 0.675" dia. SS Bladder Other:

Day 1 Date: 7-26-24

Pre-Purge Depth to Water: 13.50 feet Time: 0900

Post-Purge Depth to Water: 14.35 feet Time: 1045

Pump Dial Setting: 165 Flow Rate: 100 ml/min

Total Purge Volume (actual): 1000 ml @ Sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date:

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = **S** + **P** = gallons

Depth to Bottom: feet Time: (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system.

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond.	Temp	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
7-26-24	0930			6.43	1595.9	20.30	Clear	2.09	1.57	205.4
	0940			6.46	1524.4	19.60	Clear	1.74	1.38	215.8

Comments: Sampled @ 1030
Initial purge volume was clear with low turbidity
Sample was clear

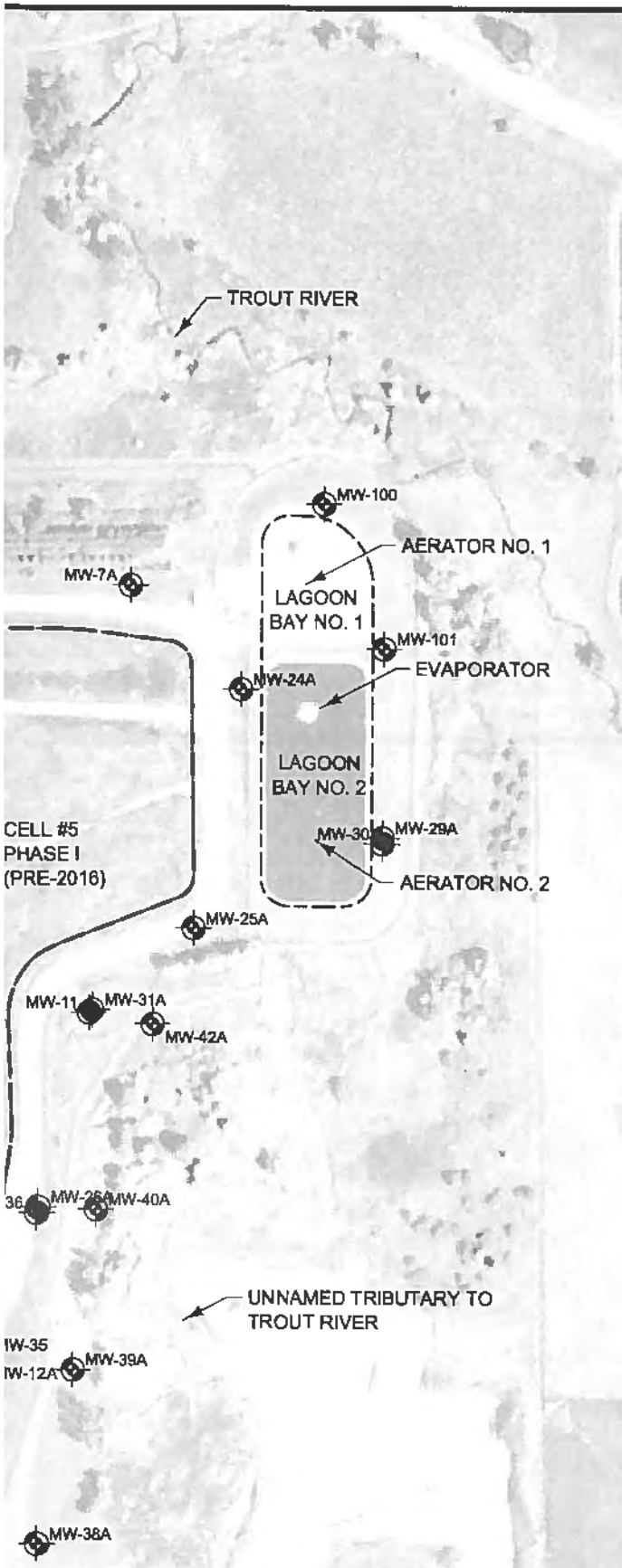
2 bottles collected

Duplicate - Sample ID.: — Time: —

Field Blank - Sample ID.: — Time: —

(If no quality control samples were collected cross-out, initial, and date)

Signature: Date: 7-26-24



	CH^4	O^2	CO	H_2S	VOC
MW-7A	0	19.8	0	0.0	1.9
MW-100	0	19.8	0	0.0	0.0
MW-101	0	19.7	0	0.0	0.0
MW-29A	0	*19.3	0	0.0	0.0
MW-30	0	19.7	0	0.0	0.0
MW-25A	0	*15.3	0	0.0	0.0
MW-11	0	19.8	0	0.0	0.0
MW-31A	0	*10.2	0	0.0	0.0
MW-26	0	*19.2	0	0.0	0.0
MW-36	0	19.6	0	0.5	0.0
MW-35	0	*19.2	0	0.5	0.0
MW-12A	0	*19.6	0	0.0	0.0
MW-27A	0	*13.6	0	0.5	0.0
MW-38A	0	*19.1	0	0.5	0.0
MW-39A	0	*19.5	1	0.5	0.0
MW-40A	0	*19.5	0	0.5	0.0
MW-42A	0	*19.5	0	0.5	0.0
MW-43A	0	19.7	0	0.0	0.0
MW-44A	0	19.7	0	0.0	0.0
MW-1	0	19.8	0	0.0	0.0



PREPARED BY:

AECOM

501 SYCAMORE STREET SUITE 222 WATERLOO, IA. 50703-4644 1-319-232-5531

FIGURE NO. 1
FIELD SAMPLING PLAN

WCASWA - 2023 ACM
DECORAH, IOWA

MARCH 2024

60711359

APPENDIX C-2
FALL WELL PURGING & SAMPLING COLLECTION

AECOM

Well Purging and Sampling Collection

Site: BHCL - IDNR FALL SAMPLE Well ID: P-213C

Weather Conditions: Cloudy 72° Windy Project No.:

Sample Method (circle one): Pumped Other: Bailed

Pump Type: (circle one) 0.85" dia. SS Bladder SS Mega-Monsoon 0.675" dia. SS Bladder Other:

Day 1 Date: 10-30-24

Pre-Purge Depth to Water: 113.03 feet Time: 0930

Post-Purge Depth to Water: feet Time:

Pump Dial Setting: 165 Flow Rate: 100 ml/min

Total Purge Volume (actual): 1000 ml @ Sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Dete.

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = S + P = gallons

Depth to Bottom: 129.43 feet Time: (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system.

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond.	Temp.	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
10-30-24	1030			7.39	1959.8	23.41	Clear	2.09	5.85	194.7
	1040			7.38	1926.7	24.03	Clear	1.51	6.19	199.6

Comments: Sampled @ 1045
Initial purge was clear with low turbidity
Sample was clear
5 bottles collected

Duplicate - Sample ID.: Time.

Field Blank - Sample ID.: Time.

(If no quality control samples were collected cross-out, initial, and date)

Signature: Date: 10-30-24

AECOM

Well Purging and Sampling Collection

Site: BHCL-IDNR FALL SAMPLE Well ID: P-703C

Weather Conditions: Cloudy Windy 55° Project No.:

Sample Method (circle one): Pumped Other: Bailed

Pump Type: (circle one) 0.85" dia. SS Bladder SS Mega-Monsoon 0.675" dia. SS Bladder Other:

Day 1 Date: 10-28-24

Pre-Purge Depth to Water: 92.23 feet Time: 0900

Post-Purge Depth to Water: 92.28 feet Time: 1130

Pump Dial Setting: 108 Flow Rate: 100 ml/min

Total Purge Volume (actual): 1000 ml + Sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date:

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = **S** + **P** = gallons

Depth to Bottom: 121.14 feet Time: (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system.

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond.	Temp	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
10-28-24	1040			7.35	2194.3	14.35	Clear	10.90	5.07	105
	1050			7.21	2178	14.29	Clear	4.11	2.54	122.9

Comments Sampled @ 1100
Initial purge was clear with low turbidity
Sample was clear
5 bottles collected

Duplicate - Sample ID.: Time:

Field Blank - Sample ID.: Time:

(If no quality control samples were collected cross-out, initial, and date)

Signature Date: 10-28-24

AECOM

Well Purging and Sampling Collection

Site: BHCL - IDNR FALL SAMPLE Well ID: P-604C

Weather Conditions: Cloudy Windy 57° Project No.:

Sample Method (circle one): Pumped Other: Bailed

Pump Type: (circle one) 0.85" dia. SS Bladder SS Mega-Monsoon 0.675" dia. SS Bladder Other:

Day 1 Date: 10-28-24

Pre-Purge Depth to Water: 96.56 feet Time: 1200

Post-Purge Depth to Water: 96.59 feet Time: 1500

Pump Dial Setting: 108 Flow Rate: 100 ml/min

Total Purge Volume (actual): 1000 ml + Sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date:

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = **S** + **P** = gallons

Depth to Bottom: 121.71 feet Time: (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system.

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond.	Temp.	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
10-28-24	1245			6.50	3638.0	21.08	Clear	5.35	3.39	245.7
	1255			6.36	3706.3	20.06	Clear	1.31	1.12	247.0

Comments: Sampled @ 1400
Initial purge was clear with low turbidity
Sample was clear
5 bottles collected

Duplicate - Sample ID.: — Time: —

Field Blank - Sample ID.: — Time: —

(If no quality control samples were collected cross-out, initial, and date)

Signature: Date: 10-28-24

AECOM

Well Purging and Sampling Collection

Site: BHCL - IDNR FALL SAMPLE Well ID: GUE-2

Weather Conditions: Sunny Windy Project No.:

Sample Method (circle one): ~~Pumped~~ ~~Other:~~ ~~Bailed~~

Pump Type: (circle one) 0.85" dia. SS Bladder SS Mega-Monsoon 0.675" dia. SS Bladder Other:

Day 1 Date:

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Pump Dial Setting: Flow Rate:

Total Purge Volume (actual): gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = **S** + **P** = gallons

Depth to Bottom: feet Time: (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system.

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond.	Temp.	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential

Comments: No Sample taken no flow

Duplicate - Sample ID.: Time:

Field Blank - Sample IO.: Time:

(If no quality control samples were collected cross-out, initial, and date)

Signature: Date: 10-25-24

AECOM

Well Purging and Sampling Collection

Site: BHCL - IDNR FALL SAMPLE Well ID: OW-409B

Weather Conditions: Sunny Windy 54° Project No.:

Sample Method (circle one): Pumped / Bailed Other:

Pump Type: (circle one) 0.85" dia. SS Bladder SS Mega-Monsoon 0.675" dia. SS Bladder Other:

Day 1 Date: 10-25-24

Pre-Purge Depth to Water: 20.89 feet Time: 1000

Post-Purge Depth to Water: 21.58 feet Time: 1715

Pump Dial Setting: 165 Flow Rate: 100 ml/min

Total Purge Volume (actual): 1200 ml + sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date.

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = S + P = gallons

Depth to Bottom: 25.64 feet Time: (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system.

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond	Temp.	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
10-25-24	1100			6.63	1924.8	16.75	Clear	2.41	1.10	284.7
				6.57	1802.1	15.80	Clear	3.88	2.88	275.6

Comments: Sampled @ 1130
Initial purge was clear with low turbidity
Sample was clear
Duplicate #4 taken Equipment Blank #2
5 bottles collected

Duplicate - Sample ID.: #4 Time: 1130

Field Blank - Sample ID.: #2 Time: 1200

(If no quality control samples were collected cross-out, initial, and date)

Signature: Date: 10-25-24

AECOM

Well Purging and Sampling Collection

Site: BHCL - IDNR FALL SAMPLE Well ID: OW-712B

Weather Conditions: Sunny Windy 55° Project No.:

Sample Method (circle one): Pumped Other: Bailed

Pump Type: (circle one) 0.85" dia. SS Bladder SS Mega-Monsoon 0.675" dia. SS Bladder Other:

Day 1 Date: 10-25-24

Pre-Purge Depth to Water: 7.12 feet Time: 1230

Post-Purge Depth to Water: feet Time:

Pump Dial Setting: 165 Flow Rate: 100 ml/min

Total Purge Volume (actual): 1000 ml @ Sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date:

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = S + **P** = gallons

Depth to Bottom: 22.66 feet Time: (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond.	Temp	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
10-25-24	1240			6.68	1723.3	17.48	Clear	11.94	4.30	259.4
	1250			6.63	1689.2	15.76	Clear	5.79	3.60	255.4

Comments: Sampled @ 1300
Initial purge volume was clear with low turbidity
Sample was clear
5 bottles collected

Duplicate - Sample ID.: Time:

Field Blank - Sample ID.: Time:

(If no quality control samples were collected cross-out, initial, and date)

Signature: Date: 10-25-24

AECOM

Well Purging and Sampling Collection

Site: BHCL - IDNR FALL SAMPLE Well ID: OW-709B

Weather Conditions: Sunny Windy 50° Project No.:

Sample Method (circle one): Pumped Other: Bailed

Pump Type: (circle one) 0.85" dia. SS Bladder SS Mega-Monsoon 0.675" dia. SS Bladder Other:

Day 1 Date: 10-23-24

Pre-Purge Depth to Water: 17.09 feet Time: 0900

Post-Purge Depth to Water: 21.07 feet Time: 10.25

Pump Dial Setting: 165 Flow Rate: 100ml/min

Total Purge Volume (actual): 1000 ml @ sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date:

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = **S** + **P** = gallons

Depth to Bottom: 27.33 feet Time: (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system.

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond	Temp	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
10-23-24	0950			7.11	1685	11.77	Clear	6.27	4.62	240.7
	1000			6.81	1644.2	11.81	Clear	38.23	5.45	251.6

Comments: Sampled @ 1015
Initial purge volume was clear with low turbidity
Sample was clear
5 bottles collected

Duplicate - Sample ID.: Time:

Field Blank - Sample ID.: Time:

(If no quality control samples were collected cross-out, initial, and date)

Signature: Date: 10-23-24

AECOM

Well Purging and Sampling Collection

Site: BHCL - IDNR FALL SAMPLE Well ID: OW-711B

Weather Conditions: Sunny Windy 50° Project No.:

Sample Method (circle one): Pumped Other: Bailed

Pump Type: (circle one) 0.85" dia. SS Bladder SS Mega-Monsoon 0.675" dia. SS Bladder Other:

Day 1	Day 2 (for wells pumped/bailed dry)
Date: 10-23-24	Date:
Pre-Purge Depth to Water: 12.00 feet Time: 1145	Pre-Purge Depth to Water: feet Time:
Post-Purge Depth to Water: 12.00 feet Time: 1420	Post-Purge Depth to Water: feet Time:
Pump Dial Setting: 165 Flow Rate: 100 ml/min	Total Purge Volume: gallons
Total Purge Volume (actual): 1000 ml @ Sample gallons (At least 1x the total purge volume calculated below needs to be removed prior to sampling)	

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = S + P = gallons

Depth to Bottom: 23.50 feet Time: (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system.

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond.	Temp.	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
10-23-24	1200			6.57	1800.9	14.62	Clear	10.82	5.16	268.3
	1210			6.77	1686.8	14.89	Clear	23.97	6.01	256.1

Comments: Sampled @ 1400
Initial purge was clear with low turbidity
Sample was clear
5 bottles collected

Duplicate - Sample ID.: Time:

Field Blank - Sample ID.: Time:

(If no quality control samples were collected cross-out, initial, and date)

Signature: Date: 10-23-24

Well Purging and Sampling Collection

Site: DHCL - ZONE FALL SAMPLE Well ID: [redacted] OW - 710B

Weather Conditions: Sunny Windy 50 Project No.:

Sample Method (circle one): Pumped Other: Bailed

Pump Type (circle one): 0.85" dia. SS Bladder SS Mega-Monsoon 0.675" dia. SS Bladder Other:

Day 1 Date: 10-23-24

Pre-Purge Depth to Water: 17.91 feet Time: [redacted]1045

Post-Purge Depth to Water: 19.09 feet Time: 1130

Pump Dial Setting: 165 Flow Rate: 100 ml/min

Total Purge Volume (actual): 1000 ml + Sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0 163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = S + P = gallons

Depth to Bottom: 28.00 feet Time: (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system.

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond.	Temp.	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
1050	1050			6.92	1251.6	12.32	Clear	7.56	4.54	250.4
	1100			6.80	1241.2	12.33	Clear	9.28	[redacted]2.15	257

Comments: Sampled @ 1100
Initial purge was clear with low turbidity
Sample was clear

5 bottles collected

Duplicate - Sample ID.: Time:

Field Blank - Sample ID.: Time:

(If no quality control samples were collected cross-out, initial, and date)

Signature: Date: 10-23-24

AECOM

Well Purging and Sampling Collection

Site: BHCL-IDNR FALL SAMPLE Well ID: MW-501B

Weather Conditions: Sunny 63° Project No.:

Sample Method (circle one): Pumped Other: Bailed

Pump Type: (circle one) 0.85" dia. SS Bladder SS Mega-Monsoon 0.675" dia. SS Bladder Other:

Day 1 Date: 10-21-24

Pre-Purge Depth to Water: 10.16 feet Time: 0900

Post-Purge Depth to Water: 13.71 feet Time: 1030

Pump Dial Setting: 165 Flow Rate: 100 ml/min

Total Purge Volume (actual): 1000 ml @ sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date:

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = **S** + **P** = gallons

Depth to Bottom 31.23 feet Time: (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system.

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond.	Temp.	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
10-21-24	0950			7.36	905.44	19.13	Clear	6.69	4.38	183.5
				7.26	876.55	18.10	Clear	5.83	2.97	196.4

Comments: Sampled @ 1000
Initial purge was clear with low turbidity
Sample was clear
5 bottles collected

Duplicate - Sample ID.: Time:

Field Blank - Sample ID.: Time:

(If no quality control samples were collected cross-out, initial, and date)

Signature: Date: 10-21-24

AECOM

Well Purging and Sampling Collection

Site: BHCL- IDNR FALL SAMPLE Well ID: OW-603B

Weather Conditions: Sunny 63° Project No.:

Sample Method (circle one): Pumped / Bailed Other:

Pump Type: (circle one) 0.85" dia. SS Bladder / 0.675" dia. SS Bladder / SS Mega-Monsoon / Other:

Day 1 Date: 10-21-24

Pre-Purge Depth to Water: 14.09 feet Time: 1125

Post-Purge Depth to Water: 15.27 feet Time: 1200

Pump Dial Setting: 165 Flow Rate: 100 ml/min

Total Purge Volume (actual): 1000 ml (+) Sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date:

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = S + P = gallons

Depth to Bottom: 29.62 feet Time: (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond.	Temp	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
10-21-24	1130			7.77	1178.1	22.54	Clear	1.54	4.49	177.0
	1140			8.14	1109.9	20.98	Clear	1.01	0.59	112.9

Comments: Sampled @ 1145
Initial purge was clear with low turbidity
Sample was clear
5 bottles collected

Duplicate - Sample ID.: — Time: —

Field Blank - Sample ID.: — Time: —

(If no quality control samples were collected cross-out, initial and date)

Signature: Date: 10-21-24

AECOM

Well Purging and Sampling Collection

Site: BHCL-IDNR FALL SAMPLE Well ID: OW-604B

Weather Conditions: Sunny 70° Project No.:

Sample Method (circle one): Pumped Other: Bailed

Pump Type: (circle one) 0.85" dia. SS Bladder SS Mega-Monsoon 0.675" dia. SS Bladder Other:

Day 1 Date: 10-21-24

Pre-Purge Depth to Water: 14.08 feet Time: 1230

Post-Purge Depth to Water: 16.88 feet Time: 1430

Pump Dial Setting: 165 Flow Rate: 100 ml/min

Total Purge Volume (actual): 1000 ml @ sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date:

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = **S** + **P** = gallons

Depth to Bottom: 27.60 feet Time: (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system.

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond.	Temp	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
10-21-24	1235			7.18	1232.3	24.22	Clear	6.09	3.65	35.8
	1245			7.04	1200.6	22.05	Clear	1.80	1.78	42.3

Comments: Sampled @ 1400
Initial purge was clear with low turbidity
Sample was clear
5 bottles collected

Duplicate - Sample ID.: — Time: —

Field Blank - Sample ID.: — Time: —

(If no quality control samples were collected cross-out, initial, and date)

Signature: Date: 10-21-24

AECOM

Well Purging and Sampling Collection

Site: BHCL - IDNR FALL SAMPLE Well ID: OW - 607B

Weather Conditions: Sunny 63° Project No.:

Sample Method (circle one): Pumped Other: Bailed

Pump Type: (circle one) 0.85" dia. SS Bladder SS Mega-Monsoon 0.675" dia. SS Bladder Other:

Day 1 Date: 10-21-24

Pre-Purge Depth to Water: 14.10 feet Time: 1035

Post-Purge Depth to Water: 14.87 feet Time: 1115

Pump Dial Setting: 165 Flow Rate: 100 ml/min

Total Purge Volume (actual): 1000 ml + Sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date.

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = **S** + P = gallons

Depth to Bottom: 22.65 feet Time: (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system.

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond.	Temp	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
	10:40			7.03	1387.2	19.08	Clear	1.27	3.06	227
	1050			6.98	1365.1	18.65	Clear	2.51	3.60	228.4

Comments: Sampled @ 11:00
Initial purge was clear with low turbidity
Sample was clear

5 bottles collected

Duplicate - Sample ID.: — Time: —

Field Blank - Sample ID.: — Time: —

(If no quality control samples were collected cross-out, initial, and date)

Signature: Date: 10-21-24

AECOM

Well Purging and Sampling Collection

Site: BHCL-IDNR FALL SAMPLE Well ID: OW-402B

Weather Conditions: Sunny 38° Project No.:

Sample Method (circle one): Pumped Other: Bailed

Pump Type: (circle one) 0.85" dia. SS Bladder SS Mega-Monsoon 0.675" dia. SS Bladder Other:

Day 1 Date: 10-16-24

Pre-Purge Depth to Water: 16.89 feet Time: 0830

Post-Purge Depth to Water: 17.14 feet Time: 1015

Pump Dial Setting: 165 Flow Rate: 100 ml/min

Total Purge Volume (actual): 1000 ml @ Sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date:

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = S + P = gallons

Depth to Bottom: 25.25 feet Time: (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system.

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond.	Temp.	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
10-16-24	0850			6.50	3899.6	8.77	Clear	2.96	6.17	252.2
	0900			5.93	3819.8	10.72	Clear	0.76	0.48	262.6

Comments: Sampled @ 0930
Initial purge was clear with low turbidity
Sample was clear
12 bottles collected

Duplicate - Sample ID.: — Time: —

Field Blank - Sample ID.: — Time: —

(If no quality control samples were collected cross-out, initial, and date)

Signature: Date: 10-16-24

AECOM

Well Purging and Sampling Collection

Site: BHCL - IDNR FALL SAMPLE Well ID: OW-413B

Weather Conditions: Sunny - 34° Project No.:

Sample Method (circle one): Pumped / Bailed Other:

Pump Type (circle one): 0.85" dia. SS Bladder / 0.675" dia. SS Bladder / SS Mega-Monsoon / Other:

Day 1 Date: 10-16-24

Pre-Purge Depth to Water: 11.61 feet Time: 1030

Post-Purge Depth to Water: 11.61 feet Time: 1245

Pump Dial Setting: 165 Flow Rate: 100 ml/min

Total Purge Volume (actual): 1000 ml @ sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date:

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = **S** + P = gallons

Depth to Bottom: 21.36 feet Time (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system.

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond	Temp.	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
10-16-24	1035			6.27	2986.3	13.83	Clear	3.96	5.13	249.7
	1045			6.10	2822.1	13.88	Clearish	25.27	1.57	237.1

Comments: Sampled @ 1200
Initial purge was clear with low turbidity
Sample was clearish and turbidity increased
5 bottles collected

Duplicate - Sample ID.: Time:

Field Blank - Sample ID.: Time:

(If no quality control samples were collected cross-out, initial, and date)

Signature: Date: 10-16-24

AECOM

Well Purging and Sampling Collection

Site: BHCL-IDNR FALL SAMPLE Well ID: OW-40B

Weather Conditions: Sunny 42° Windy Project No.:

Sample Method (circle one): Pumped Other: Bailed

Pump Type (circle one): 0.85" dia. SS Bladder SS Mega-Monsoon 0.675" dia. SS Bladder Other:

Day 1 Date: 10-15-24

Pre-Purge Depth to Water: 24.61 feet Time: 1100

Post-Purge Depth to Water: 27.11 feet Time: 1445

Pump Dial Setting: 165 Flow Rate: 100 ml/min

Total Purge Volume (actual): 1000 ml + Sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0 163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = **S** + P = gallons

Depth to Bottom: 30.04 feet Time: (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system.

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond.	Temp.	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
10-15-24	1105			6.27	3949.6	13.79	Clear	1.80	1.95	273.4
	1115			6.31	3863.5	13.34	Clear	8.38	1.56	257.8

Comments Sampled @ 1400
Initial purge was clear with low turbidity
Sample was clear

10 bottles collected

Duplicate - Sample ID.: #3 Time: 1430

Field Blank - Sample ID.: Time:

(If no quality control samples were collected cross-out, initial, and date)

Signature: Date: 10-15-24

AECOM

Well Purging and Sampling Collection

Site: BHCL-IONR FALL SAMPLE Well ID: MW-320B

Weather Conditions: Sunny 42° Windy Project No.:

Sample Method (circle one): Pumped Other: Bailed

Pump Type: (circle one) 0.85" dia. SS Bladder SS Mega-Monsoon 0.675" dia. SS Bladder Other:

Day 1 Date: 10-15-24

Pre-Purge Depth to Water: 6.97 feet Time: 1025

Post-Purge Depth to Water: 7.23 feet Time: 1055

Pump Dial Setting: 165 Flow Rate: 100 ml/min

Total Purge Volume (actual): 1000 ml @ sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0 163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = **S** + **P** = gallons

Depth to Bottom: 19.37 feet Time (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system.

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond.	Temp.	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
10-15-24	1030			7.06	1236.2	15.08	Clear'ish	23.55	5.88	225.5
	1040			6.86	1204.7	15.85	Clear	10.84	2.05	233

Comments: Sampled @ 1045
Initial purge was clear with lower turbidity
Sample was clear
5 bottles collected

Duplicate - Sample ID.: — Time: —

Field Blank - Sample ID.: — Time: —

(If no quality control samples were collected cross-out, initial, and date)

Signature: Date: 10-15-24

AECOM

Well Purging and Sampling Collection

Site: BHC - IDNR FALL SAMPLE Well ID: MW-319B

Weather Conditions: Sunny 40° Windy Project No.:

Sample Method (circle one): Pumped Other: Bailed

Pump Type (circle one): 0.85" dia. SS Bladder SS Mega-Monsoon 0.675" dia. SS Bladder Other:

Day 1 Date: 10-15-24

Pre-Purge Depth to Water: 9.50 feet Time: 0900

Post-Purge Depth to Water: 10.62 feet Time: 1020

Pump Dial Setting: 165 Flow Rate: 100 ml/min

Total Purge Volume (actual): 1000 ml @ Sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date:

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = S + P = gallons

Depth to Bottom: 19.30 feet Time: (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system.

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond.	Temp	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
10-15-24	0945			7.46	1083.3	13.14	Clear	4.64	8.18	190
	0955			7.10	982.21	13.26	Clear	1.94	8.05	209.9

Comments: Sampled @ 1015
Initial purge was clear with low turbidity
Sample was clear
5 bottles collected

Duplicate - Sample ID.: — Time: —

Field Blank - Sample ID.: — Time: —

(If no quality control samples were collected cross-out, initial, and date)

Signature: Date: 10-15-24

AECOM

Well Purging and Sampling Collection

Site: BHCL- IDNR FALL SAMPLE Well ID: GUX-1

Weather Conditions: Sunny 64° Project No.:

Sample Method (circle one): Pumped Other: Grab / Bailed

Pump Type (circle one): 0.85" dia. SS Bladder / 0.675" dia. SS Bladder / SS Mega-Monsoon / Other:

Day 1 Date: 10-11-24

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Pump Dial Setting: Flow Rate:

Total Purge Volume (actual): gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet

h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = **S** + **P** = gallons

Depth to Bottom: feet Time: (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system.

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond.	Temp.	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
10-11-24	0730			6.73	7490	19.30	Clear	4.57	—	45

Comments: Sampled @ 0730
Sample was clear
5 bottles

Duplicate - Sample ID.: — Time: —

Field Blank - Sample ID.: — Time: —

(If no quality control samples were collected cross-out, initial, and date)

Signature: Date: 10-11-24

AECOM

Well Purging and Sampling Collection

Site: BHCL - IDNR FALL SAMPLE Well ID: GWI-1

Weather Conditions: Sunny 62° Project No.:

Sample Method (circle one): Pumped Other: Grab / Bailed

Pump Type: (circle one) 0.85" dia. SS Bladder SS Mega-Monsoon / 0.675" dia. SS Bladder Other:

Day 1 Date: 10-11-24

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Pump Dial Setting: Flow Rate:

Total Purge Volume (actual): gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date:

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = **S** + **P** = gallons

Depth to Bottom. feet Time: (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system.

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond.	Temp.	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
10-11-24				6.79	1572	21.3	Clear	7.43	—	73

Comments: Sampled @ 1000
Sample was clear
5 bottles collected

Duplicate - Sample ID.: — Time: —

Field Blank - Sample ID.: — Time: —

(If no quality control samples were collected cross-out, initial, and date)

Signature: Date: 10-11-24

AECOM

Well Purging and Sampling Collection

Site: BHCL- IDNR FALL SAMPLE Well ID: GUW-3-1

Weather Conditions: Sunny 63° Project No.:

Sample Method (circle one): Pumped Other: Grab / Bailed

Pump Type: (circle one) 0.85" dia. SS Bladder / SS Mega-Monsoon / 0.675" dia. SS Bladder / Other:

Day 1 Date: 10-11-24

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Pump Dial Setting: Flow Rate:

Total Purge Volume (actual): gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = **S** + **P** = gallons

Depth to Bottom: feet Time: (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system.

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond	Temp	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
10-11-24	0815			6.63	2106	15.9	Clear	8.73	—	32

Comments: Sampled @ 0815
Sample was clear
5 bottles collected

Duplicate - Sample ID.: — Time. —

Field Blank - Sample ID.: — Time: —

(if no quality control samples were collected cross-out, initial, and date)

Signature: Date: 10-11-24

AECOM

Well Purging and Sampling Collection

Site: BHCL - IDNR FALL SAMPLE Well ID: OW-226B

Weather Conditions: Sunny 67° Project No.:

Sample Method (circle one): Pumped / Bailed Other:

Pump Type (circle one): 0.85" dia. SS Bladder / 0.675" dia. SS Bladder / SS Mega-Monsoon / Other:

Day 1 Date: 10-9-24

Pre-Purge Depth to Water: 12.83 feet Time: 0945

Post-Purge Depth to Water: 12.87 feet Time: 1130

Pump Dial Setting: 165 Flow Rate: 100 ml/min

Total Purge Volume (actual): 1000 ml @ sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date:

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = **S** + P = gallons

Depth to Bottom: 21.49 feet Time: (measure after sample has bean collected)

Field parameters will also be recorded with the low flow sampling system.

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond.	Temp.	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
10-9-24	1015			6.83	7733.7	16.84	Clear	9.65	2.18	210
	1025			6.89	7117.3	16.50	Cloudy	37.92	1.74	219.1

Comments: Sampled @ 1100
Initial purge was clear with low turbidity
Sample was cloudy - Turbidity increased during Purge.
18 bottles collected

Duplicate - Sample ID.: Time:

Field Blank - Sample ID.: Time:

(If no quality control samples were collected cross-out, initial, and date)

Signature: Date: 10-9-24

AECOM

Well Purging and Sampling Collection

Site: BHCL - IDNR FALL SAMPLE Well ID: OW-2273

Weather Conditions: Sunny 67° Project No.:

Sample Method (circle one): Pumped Other: Bailed

Pump Type (circle one): 0.85" dia. SS Bladder SS Mega-Monsoon 0.675" dia. SS Bladder Other:

Day 1 Date: 10-9-24

Pre-Purge Depth to Water: 10.09 feet Time: 1135

Post-Purge Depth to Water: 12.87 feet Time: 1430

Pump Dial Setting: 165 Flow Rate: 100 ml/min

Total Purge Volume (actual): gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0 163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8' diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = S + P = gallons

Depth to Bottom. 21.75 feet Time: (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond.	Temp.	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
10-9-24	1140			6.70	6377.5	21.38	Clear	10.85	3.43	202.5
					5477.1					
	1150			6.59	[illegible]	19.04	Clear	6.55	1.13	198

Comments: Sampled @ 1400
Initial purge volume was clear with low turbidity
Sample was clear
18 bottles collected

Duplicate - Sample ID.: Time

Field Blank - Sample ID: Time.

(If no quality control samples were collected cross-out, initial, and date)

Signature: Date: 10-9-24

AECOM

Well Purging and Sampling Collection

Site BHCL - IDW FALL SAMPLE Well ID: OW-225B

Weather Conditions Sunny - Project No

Sample Method (circle one): Pumped / Bailed / Other. Pump Type (circle one): 0.85" dia SS Bladder / 0.675" dia SS Bladder / SS Mega-Monsoon / Other:

Day 1 Date: 10-8-24

Pre-Purge Depth to Water: 12.16 feet Time 0945

Post-Purge Depth to Water: 13.93 feet Time: 1120

Pump Dial Setting: 16.5 Flow Rate 100 ml/min

Total Purge Volume (actual) 1000 ml ⊕ sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date

Pre-Purge Depth to Water: feet Time

Post-Purge Depth to Water: feet Time:

Total Purge Volume gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = S + P = gallons

Depth to Bottom 21.65 feet Time: (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond	Temp	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
10-8-24	1000			6.28	5485.6	14.36	Clear	5.76	2.57	267.1
	1010			6.35	5294.9	15.25	Clear	19.72	3.94	262.8

Comments: Sampled @ 1100
Initial purge was clear with low turbidity
Sample was clearish

18 bottles collected

Duplicate - Sample ID: — Time: —

Field Blank - Sample ID.: — Time: —

(If no quality control samples were collected cross-out initial, and date)

Signature: Date 10-8-24

AECOM

Well Purging and Sampling Collection

Site BHCL - IDNR FALL SAMPLE Well ID: OW-223B

Weather Conditions Sunny 58° Project No:

Sample Method (circle one): Pumped / Bailed Other

Pump Type (circle one): 0.85" dia. SS Bladder / 0.675" dia. SS Bladder / SS Mega-Monsoon / Other:

Day 1 Date 10-8-24

Pre-Purge Depth to Water. 17.54 feet Time 1130

Post-Purge Depth to Water. 18.80 feet Time 1445

Pump Dial Setting 165 Flow Rate 100 ml/min

Total Purge Volume (actual) 1000 ml (+) Sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date:

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = S + P = gallons

Depth to Bottom: 20.23 feet Time: (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system.

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond.	Temp.	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
10-8-24	1140			6.64	1999.5	21.98	Clear	1.00	3.36	138.4
	1150			6.44	1985.8	21.54	Clear	0.99	3.18	157.7

Comments: Sampled @ 1400
Initial purge was clear with low turbidity
Sample was clear
Duplicate #2 & Equipment blank #1 taken
5 bottles collected

Duplicate - Sample ID: #2 Time 1400

Field Blank - Sample ID: #1 Time 1430

(If no quality control samples were collected cross-out, initial, and date)

Signature Date: 10-8-24

AECOM

Well Purging and Sampling Collection

Site: BHCL - IONR FALL SAMPLE Well ID: OW-221B

Weather Conditions: Sunny 45° Project No.:

Sample Method (circle one): Pumped / Bailed Other:

Pump Type (circle one): 0.85" dia. SS Bladder / 0.675" dia. SS Bladder / SS Mega-Monsoon / Other:

Day 1 Date: 10-7-24

Pre-Purge Depth to Water: 17.49 feet Time: 0845

Post-Purge Depth to Water: 17.86 feet Time: 0945

Pump Dial Setting: 165 Flow Rate: 100 ml/min

Total Purge Volume (actual): 1000 ml ⊕ Sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date:

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet

h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = S + P = gallons

Depth to Bottom: 23.23 feet Time: (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond	Temp	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
10-7-24	0910			6.67	1017.3	14.97	Clearish	19.40	3.13	230.9
	0920			6.40	861.94	14.03	Clear	11.65	3.97	238.3

Comments: Sampled @ 0930
Initial purge was clearish with lower turbidity
Sample was clear

5 bottles

Duplicate - Sample ID.: — Time: —

Field Blank - Sample ID.: — Time: —

(If no quality control samples were collected cross-out, initial, and date)

Signature: Date: 10-7-24

AECOM

Well Purging and Sampling Collection

Site: BHCL-IDNR FALL SAMPLE Well ID: OW-224B

Weather Conditions: Sunny 48° Project No.:

Sample Method (circle one): Pumped Other: Bailed

Pump Type. (circle one): 0.85" dia. SS Bladder SS Mega-Monsoon 0.675" dia. SS Bladder Other:

Day 1 Date 10-7-24

Pre-Purge Depth to Water: 13.19 feet Time 1045

Post-Purge Depth to Water: 13.94 feet Time: 1330

Pump Dial Setting: 165 Flow Rate 100 ml/min

Total Purge Volume (actual): 1000 ml ⊕ sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date:

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = S + P = gallons

Depth to Bottom 22.32 feet Time: (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system.

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond.	Temp.	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
10-7-24	1050			6.57	4444.9	16.11	Clear	3.22	1.90	154.2
	1100			6.72	4552.0	14.93	Cloudy	22.29	2.04	125.9

Comments: Sampled @ 1300
Initial purge was clear with low turbidity
Sample was cloudy with increased turbidity
18 bottles collected

Duplicate - Sample ID: — Time —

Field Blank - Sample ID.: — Time: —

(If no quality control samples were collected cross-out initial, and date)

Signature [signature] Date: 10-7-24

AECOM

Well Purging and Sampling Collection

Site BHCL-IDNR FALL SAMPLE Well ID OW-222B

Weather Conditions Sunny/ 45° Project No.

Sample Method (circle one): Pumped / Bailed Other.

Pump Type (circle one) 0.85" dia. SS Bladder / 0.675" dia. SS Bladder / SS Mega-Monsoon / Other.

Day 1 Date 10-7-24

Pre-Purge Depth to Water: 16.86 feet Time 0950

Post-Purge Depth to Water: 16.93 feet Time 1030

Pump Dial Setting: 165 Flow Rate 100 ml/min

Total Purge Volume (actual): 1000 ml ⊕ Sample gallons

(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date.

Pre-Purge Depth to Water. feet Time

Post-Purge Depth to Water feet Time.

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet

h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons

Or

P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = S + P = gallons

Depth to Bottom: 20.23 feet Time: (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond	Temp	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
10-7-24	1000			6.48	1512.8	18.01	Clear	3.08	3.71	193.9
	1010			6.50	1532	16.20	Clear	5.59	2.22	171.2

Comments: Sampled @ 1020

Initial purge was clear with low turbidity

Sample was clear

5 bottles collected

Duplicate - Sample ID: Time

Field Blank - Sample ID.: Time.

(If no quality control samples were collected cross-out initial, and date)

Signature Date 10-7-24

AECOM

Well Purging and Sampling Collection

Site: BHCL-IDNR FALL SAMPLES Well ID: OW-213BR

Weather Conditions: Sunny 55° Project No.:

Sample Method (circle one): Pumped / Bailed Other:

Pump Type (circle one): 0.85' dia SS Bladder / SS Mega-Monsoon / 0.675' dia SS Bladder / Other:

Day 1 Date: 10-4-24

Pre-Purge Depth to Water: 13.09 feet Time: 0845

Post-Purge Depth to Water: 13.82 feet Time: 0935

Pump Dial Setting: 165 Flow Rate: 100 ml/min

Total Purge Volume (actual): 1000 ml @ sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date:

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2' diameter well) = 0.163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16' diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = S + P = gallons

Depth to Bottom: 23.25 feet Time: (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond	Temp	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
	900			6.66	1613.9	15.27	clear	1.90	3.75	230.3
	0910			6.51	1563.9	14.70	clear	0.62	3.19	242.6

Comments: Sampled @ 0920
Initial purge was clear with low turbidity
Sample was clear
5 bottles collected

Duplicate - Sample ID: — Time —

Field Blank - Sample ID.: — Time —

(If no quality control samples were collected cross-out initial and date)

Signature: Date: 10-4-24

AECOM

Well Purging and Sampling Collection

Site: BHCL - IDW SPRING SAMPLE Well ID OW-22013

Weather Conditions: Sunny 55° Project No.:

Sample Method (circle one): Pumped Bailed Other:

Pump Type (circle one): 0.85" dia. SS Bladder SS Mega-Monsoon 0.675" dia. SS Bladder Other:

Day 1 Date 10-4-24

Pre-Purge Depth to Water: 15.22 feet Time 1025

Post-Purge Depth to Water: 15.87 feet Time 1315

Pump Dial Setting: 165 Flow Rate 100 ml/min

Total Purge Volume (actual): 1000 ml @ sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date:

Pre-Purge Depth to Water. feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = S + P = gallons

Depth to Bottom 23.24 feet Time: (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond	Temp	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
10-4-24	1030			6.60	4716.8	18.80	Clear	14.46	2.97	277.5
	1040			6.57	4813.8	16.87	Cloudy	8.22	0.19	223.5

Comments: Sampled @ 1300
Initial purge was clearish with lower turbidity
Sample was cloudy with low turbidity?
7 bottles collected

Duplicate - Sample ID: Time

Field Blank - Sample ID.: Time:

(If no quality control samples were collected cross-out initial, and date)

Signature Date: 10-4-24

AECOM

Well Purging and Sampling Collection

Site BHCL - IDNR FALL SAMPLE Well ID OW-219B

Weather Conditions Sunny 55° Project No.

Sample Method (circle one): Pumped / Bailed Other:

Pump Type (circle one): 0.85" dia. SS Bladder / SS Mega-Monsoon / 0.675" dia SS Bladder / Other:

Day 1 Date: 10-4-24

Pre-Purge Depth to Water: 9.09 feet Time: 0940

Post-Purge Depth to Water: 9.28 feet Time: 1015

Pump Dial Setting: 165 Flow Rate: 100 ml/min

Total Purge Volume (actual) 1000 ml @ Sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date:

Pre-Purge Depth to Water: feet Time

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = **S** + **P** = gallons

Depth to Bottom 20.11 feet Time: (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond	Temp	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
10-4-24	0942			6.66	1385	17.54	Clear	4.70	3.62	244.9
	0952			6.69	1364.1	17.48	Clear	5.01	2.99	245.5

Comments: Sampled @ 1000
Initial purge was clear with low turbidity
Sample was clear
5 bottles collected

Duplicate - Sample ID.: — Time: —

Field Blank - Sample ID.: — Time: —

(If no quality control samples were collected cross-out. initial, and date)

Signature Date: 10-4-24

AECOM

Well Purging and Sampling Collection

Site BHCL - IDNR FALL SAMPLE Well ID OW-212B

Weather Conditions Sunny Breezy 59° Project No.:

Sample Method (circle one): Pumped Other ____ Bailed

Pump Type. (circle one): 0.85" dia. SS Bladder SS Mega-Monsoon 0.675" dia. SS Bladder Other:

Day 1 Date: 10-2-24

Pre-Purge Depth to Water: 12.87 feet Time: 1125

Post-Purge Depth to Water: 13.14 feet Time: 1340

Pump Dial Setting 165 Flow Rate: 100 ml/min

Total Purge Volume (actual): 1000 ml @ sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date:

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume. gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2' diameter well) = 0.163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16' diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = **S** + **P** = gallons

Depth to Bottom: 21.60 feet Time: (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond	Temp	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
10-2-24	1130			6.53	2396.7	21.98	Clear	2.01	1.78	231.2
	1140			6.56	2392.1	20.56	Clear	4.68	2.75	244.0

Comments: Sampled @ 1330
Initial purge was clear with low turbidity
Sample was clear
5 bottles collected

Duplicate - Sample ID : Time.

Field Blank - Sample ID.: Time:

(If no quality control samples were collected cross-out initial, and date)

Signature Date 10-2-24

AECOM

Well Purging and Sampling Collection

Site BHCL - IDNR FALL SAMPLE Well ID OW-209B

Weather Conditions Sunny Windy 55° Project No :

Sample Method (circle one): Pumped / Bailed Other: _____

Pump Type (circle one): 0.85" dia. SS Bladder / 0.675" dia. SS Bladder / SS Mega-Monsoon / Other: _____

Day 1 Date: 10-2-24

Pre-Purge Depth to Water: 11.24 feet Time 1000

Post-Purge Depth to Water: 15.37 feet Time 1110

Pump Dial Setting 165 Flow Rate 100 ml/min

Total Purge Volume (actual): 1000 ml @ sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date: _____

Pre-Purge Depth to Water. _____ feet Time: _____

Post-Purge Depth to Water: _____ feet Time: _____

Total Purge Volume: _____ gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = _____ feet

h_t = Length of Tubing in Well = _____ feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = _____ gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = _____ gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = _____ gallons

T = Total Purge Volume (Gallons) = S + P = _____ gallons

Depth to Bottom 25.96 feet Time: _____ (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond.	Temp	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
10-2-24	1010			7.06	1300.4	18.84	Clear	2.24	4.33	221.4
	1020			7.13	1200.9	16.36	Clear	1.24	6.51	210.7

Comments: Sampled @ 1030
Initial purge was clear with low turbidity
Sample was clear
Duplicate #2 taken @ 1030
5 bottles collected

Duplicate - Sample ID.: #2 Time: 1030

Field Blank - Sample ID.: — Time: —

(If no quality control samples were collected cross-out, initial, and date)

Signature: [signature] Date: 10-2-24

AECOM

Well Purging and Sampling Collection

Site BHCL - IDNR FALL SAMPLING Well ID OW-114B

Weather Conditions Sunny Windy 55° Project No :

Sample Method (circle one): Pumped / Bailed Other. _____

Pump Type. (circle one) 0.85" dia SS Bladder / 0.675" dia. SS Bladder / SS Mega-Monsoon / Other _____

Day 1 Date: _____

Pre-Purge Depth to Water: 9.84 feet Time 0830

Post-Purge Depth to Water. 10.78 feet Time: 0950

Pump Dial Setting: 165 Flow Rate: 100 ml/min

Total Purge Volume (actual): 1000 ml @ sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date. _____

Pre-Purge Depth to Water. _____ feet Time: _____

Post-Purge Depth to Water: _____ feet Time: _____

Total Purge Volume: _____ gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = _____ feet h_t = Length of Tubing in Well = _____ feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = _____ gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = _____ gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = _____ gallons

T = Total Purge Volume (Gallons) = **S** + **P** = _____ gallons

Depth to Bottom. 22.70 feet Time _____ (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond	Temp	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
10-2-24	0915			6.71	1988.3	11.16	Clear	10.82	3.38	225.1
	0925			6.69	1949.4	16.83	Clear	1.55	1.31	227.8

Comments: Sampled @ 0940
Initial purge was clear with low turbidity
Sample was clear
5 bottles collected

Duplicate - Sample ID.: — Time: —

Field Blank - Sample ID.: — Time: —

(If no quality control samples were collected cross-out, initial, and date)

Signature: _____ Date: 10-2-24

AECOM

Well Purging and Sampling Collection

Site: ~~[illegible]~~ BHCL - IDNR FALL Well ID: OW-205B

Weather Conditions _____ Project No.: _____

Sample Method (circle one): Pumped Other: _____ Bailed

Pump Type. (circle one) 0.85" dia. SS Bladder SS Mega-Monsoon 0.675" dia. SS Bladder Other: _____

Day 1 Date: _____

Pre-Purge Depth to Water: _____ feet Time _____

Post-Purge Depth to Water: _____ feet Time _____

Pump Dial Setting: _____ Flow Rate _____

Total Purge Volume (actual): _____ gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date: _____

Pre-Purge Depth to Water: _____ feet Time: _____

Post-Purge Depth to Water: _____ feet Time: _____

Total Purge Volume: _____ gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = _____ feet h_t = Length of Tubing in Well = _____ feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = _____ gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = _____ gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = _____ gallons

T = Total Purge Volume (Gallons) = S + P = _____ gallons

Depth to Bottom: _____ feet Time: _____ (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system.

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond.	Temp.	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential

Comments: No sample taken - Not accessable
Drainage culvert piping blocking access to well

Duplicate - Sample ID: _____ Time: _____

Field Blank - Sample ID.: _____ Time: _____

(If no quality control samples were collected cross-out initial, and date)

Signature: [signature] Date 10-2-24

AECOM

Well Purging and Sampling Collection

Site: BHCL - IDNR FALL SAMPLE Well ID: CW-101B

Weather Conditions: Sunny 55° Project No.:

Sample Method (circle one): Pumped / Bailed Other

Pump Type (circle one): 0.85" dia. SS Bladder / 0.675" dia. SS Bladder / SS Mega-Monsoon / Other:

Day 1 Date: 10-1-24

Pre-Purge Depth to Water: 9.23 feet Time: 0830

Post-Purge Depth to Water: 9.28 feet Time: 0945

Pump Dial Setting: 165 Flow Rate: 100 ml/min

Total Purge Volume (actual): 1000 ml ⊕ Sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date:

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet

h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = S + P = gallons

Depth to Bottom 33.00 feet Time: (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system.

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond.	Temp.	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
10-1-24	0910			7.59	725.21	14.85	Clear	8.36	3.17	144.1
	0920			6.91	713.08	14.31	Clear	5.83	2.19	179.1

Comments: Sampled @ 0930
Initial purge was clear with low turbidity
Sample was clear

5 bottles

Duplicate - Sample ID: — Time: —

Field Blank - Sample ID.: — Time: —

(If no quality control samples were collected cross-out initial, and date)

Signature: Date: 10-1-24

AECOM

Well Purging and Sampling Collection

Site BHCL- IDNR FALL SAMPLE Well ID: OW-113B

Weather Conditions Sunny Windy 59° Project No :

Sample Method (circle one): Pumped Other ____ Bailed

Pump Type (circle one): 0.85" dia SS Bladder SS Mega-Monsoon 0.675" dia SS Bladder Other ____

Day 1 Date 10-1-24

Pre-Purge Depth to Water: 8.23 feet Time 1100

Post-Purge Depth to Water: 9.47 feet Time 1315

Pump Dial Setting: 165 Flow Rate 100 ml/min

Total Purge Volume (actual): 1000 ml ⊕ sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date:

Pre-Purge Depth to Water: ____ feet Time: ____

Post-Purge Depth to Water: ____ feet Time: ____

Total Purge Volume: ____ gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = ____ feet h_t = Length of Tubing in Well = ____ feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = ____ gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = ____ gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = ____ gallons

T = Total Purge Volume (Gallons) = S + P = ____ gallons

Depth to Bottom: 22.00 feet Time: ____ (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond.	Temp	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
10-1-24	1100			6.41	2363.2	18.63	Clear	7.62	0.99	235.4
	1110			6.47	2333.8	17.99	Clear	29.25	2.81	229.9

Comments: Sampled @ 1300
Initial purge was clear with low turbidity
Sample was clearish & turbidity increased during purge
6 bottles collected

Duplicate - Sample ID: ____ Time ____

Field Blank - Sample ID.: ____ Time: ____

(If no quality control samples were collected cross-out initial, and date)

Signature: [signature] Date: 10-1-24

AECOM

Well Purging and Sampling Collection

Site BHCL - IDWR FALL SAMPLE Well ID OW-105B

Weather Conditions Sunny 55° Project No.:

Sample Method (circle one): Pumped / Bailed Other:

Pump Type (circle one): 0.85" dia. SS Bladder / 0.675" dia. SS Bladder / SS Mega-Monsoon / Other:

Day 1 Date: 10-1-24

Pre-Purge Depth to Water: 17.26 feet Time: 0955

Post-Purge Depth to Water: 17.96 feet Time: 1045

Pump Dial Setting: 165 Flow Rate: 100 ml/min

Total Purge Volume (actual): 1000 ml ⊕ Sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date:

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = S + P = gallons

Depth to Bottom 34.37 feet Time (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond	Temp	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
10-1-24	1005			6.65	1153.7	14.71	Clear	1.81	1.42	213.0
	1015			6.85	1149.4	14.81	Clear	5.38	6.63	207.1

Comments: Sampled @ 1030
Initial purge was clear with low turbidity
Sample was clear

5 bottles collected

Duplicate - Sample ID: Time

Field Blank - Sample ID.: Time.

(If no quality control samples were collected cross-out, initial, and date)

Signature: Date: 10-1-24

AECOM

Well Purging and Sampling Collection

Site: BHCL - TOUR FALL SAMPLE Well ID: P-215CR

Weather Conditions: Sunny 64° Project No:

Sample Method (circle one): Pumped / Bailed Other:

Pump Type. (circle one): 0.85" dia. SS Bladder / 0.675" dia. SS Bladder / SS Mega-Monsoon / Other

Day 1 Date: 9-26-24

Pre-Purge Depth to Water: 105.18 feet Time 0930

Post-Purge Depth to Water: 105.18 feet Time: 1020

Pump Dial Setting: 108 Flow Rate: 100 ml/min

Total Purge Volume (actual): gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date:

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = S + P = gallons

Depth to Bottom: 124.14 feet Time: (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system.

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond.	Temp.	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
9-26-24	0945			7.32	1477.1	20.31	clear	15.53	2.57	195.1
	0955			7.08	1478.7	20.41	clear	6.14	0.76	205.3

Comments: Sampled @ 1000
Initial purge was clear with low turbidity
sample was clear
5 bottles collected

Duplicate - Sample ID.: — Time: —

Field Blank - Sample ID.: — Time: —

(If no quality control samples were collected cross-out initial, and date)

Signature: Date: 09-26-2024

AECOM

Well Purging and Sampling Collection

Site: BHCL - IDNR FALL SAMPLE Well ID: P-214CR

Weather Conditions: Sunny 65° Project No.:

Sample Method (circle one): Pumped / Bailed Other:

Pump Type (circle one): 0.85" dia SS Bladder / 0.675" dia. SS Bladder / SS Mega-Monsoon / Other:

Day 1 Date: 9-26-24

Pre-Purge Depth to Water: 95.21 feet Time 11:05

Post-Purge Depth to Water: 97.21 feet Time 12:00

Pump Dial Setting: 108 Flow Rate 100 mL/min

Total Purge Volume (actual): _____ gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date:

Pre-Purge Depth to Water: _____ feet Time.

Post-Purge Depth to Water: _____ feet Time.

Total Purge Volume: _____ gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = _____ feet h_t = Length of Tubing in Well = _____ feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = _____ gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = _____ gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = _____ gallons

T = Total Purge Volume (Gallons) = S + P = _____ gallons

Depth to Bottom: ~~110.62~~ 108.25 feet Time: _____ (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond	Temp.	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
09-26-24	11:15			7.98	1351	27.95	clear	47.22	1.81	171.1
09-26-24	11:25			8.10	1361.5	22.28	clear	31.87	1.68	178.4

Comments: Sampled @ 11:30
Instant purge appeared clear with low turbidity
sample was clear
5 bottles collected

Duplicate - Sample ID.: — Time: —

Field Blank - Sample ID.: — Time: —

(If no quality control samples were collected cross-out initial, and date)

Signature: [signature] Date: 09-26-2024

AECOM

Well Purging and Sampling Collection

Site BHCL-IDNR FALL SAMPLE Well ID: P-216CR

Weather Conditions Sunny 58° Project No

Sample Method (circle one): Pumped / Bailed Other

Pump Type. (circle one): 0.85" dia. SS Bladder / 0.675" dia. SS Bladder / SS Mega-Monsoon / Other

Day 1 Date. 9-25-24

Pre-Purge Depth to Water: 113.57 feet Time 0850

Post-Purge Depth to Water. 113.57 feet Time 1030

Pump Dial Setting 108 Flow Rate 100 ml/min

Total Purge Volume (actual) 1000 ml ⊕ sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date.

Pre-Purge Depth to Water. feet Time:

Post-Purge Depth to Water feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet

h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = S + P = gallons

Depth to Bottom 136.20 feet Time. (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond	Temp	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
9-25-24	0915			7.71	1337.7	19.3	Clear	8.37	4.75	174.9
	0925			7.50	1361.3	17.77	Clear	8.54	2.49	189

Comments: Sampled @ 0915
Initial purge was clear with low turbidity
Sample was Clear
Duplicate #1 taken @ 0930
5 bottles collected

Duplicate - Sample ID.: #1 Time 0930

Field Blank - Sample ID.: — Time: —

(If no quality control samples were collected cross-out initial, and date)

Signature: Date: 9-25-24

AECOM

Well Purging and Sampling Collection

Site BHCL - IDNR FALL SAMPLE Well ID OW-216BR

Weather Conditions: Sunny 72° Project No.:

Sample Method (circle one): Pumped / Bailed Other:

Pump Type (circle one): 0.85" dia. SS Bladder / 0.675" dia. SS Bladder / SS Mega-Monsoon / Other:

Day 1 Date: 9-25-24

Pre-Purge Depth to Water: 9.81 feet Time: 1120

Post-Purge Depth to Water: 12.23 feet Time: 11:50

Pump Dial Setting: 165 Flow Rate: 100 ml/min

Total Purge Volume (actual): 1000 ml @ Sample gallons
(At least 1x the total purge volume calculated below needs to be removed prior to sampling)

Day 2 (for wells pumped/bailed dry) Date:

Pre-Purge Depth to Water: feet Time:

Post-Purge Depth to Water: feet Time:

Total Purge Volume: gallons

Total Purge Volume Calculation:

h_s = Stabilized/Max Drawdown Height = feet h_t = Length of Tubing in Well = feet

S = Drawdown Volume (2" diameter well) = 0.163 gallons/ft x h_s = gallons

P = Bladder Pump (3/16" diameter) Tubing Volume (Gallons) = 0.0014 gallons/ft x h_t = gallons
Or
P = SS Submersible Pump (3/8" diameter) Tubing Volume (Gallons) = 0.006 gallons/ft x h_t = gallons

T = Total Purge Volume (Gallons) = S + P = gallons

Depth to Bottom 18.80 feet Time: (measure after sample has been collected)

Field parameters will also be recorded with the low flow sampling system.

Date	Time	Depth to Water (D.T.W.)	Volume Removed (Gal.)	pH	Cond.	Temp.	Color	Turbidity	Dissolved Oxygen	Oxidation-Reduction Potential
9-25-24	1125			7.95	822.38	26.20	Clear	3.35	2.82	202.5
	1135			7.48	793.51	21.53	Clear	8.28	3.22	217.9

Comments: Sampled @ 1145
Initial purge volume was clear with low turbidity
Sample was clear

5 bottles collected

Duplicate - Sample ID: Time

Field Blank - Sample ID.: Time.

(If no quality control samples were collected cross-out initial, and date)

Signature Date 9-25-24

APPENDIX C-3
SPRING LOW FLOW TEST REPORTS

Low-Flow Test Report:

Test Date / Time: 4/23/2024 1:25:15 PM
Project: OW-223B
Operator Name:

Location Name: OW-223B
Initial Depth to Water: 16.43 ft

Estimated Total Volume Pumped: 1000 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
4/23/2024 1:25 PM	00:00	7.10 pH	19.35 °C	1,169.0 µS/cm	7.10 mg/L	4.41 NTU	163.6 mV	500.79 cm	100.00 ml/min
4/23/2024 1:26 PM	01:00	7.01 pH	17.91 °C	1,123.4 µS/cm	7.00 mg/L	1.12 NTU	179.4 mV	500.79 cm	100.00 ml/min
4/23/2024 1:27 PM	02:00	6.98 pH	16.73 °C	1,083.0 µS/cm	6.99 mg/L	1.24 NTU	181.7 mV	500.79 cm	100.00 ml/min
4/23/2024 1:28 PM	03:00	6.96 pH	16.08 °C	1,090.3 µS/cm	7.04 mg/L	1.85 NTU	186.6 mV	500.79 cm	100.00 ml/min
4/23/2024 1:29 PM	04:00	6.94 pH	16.23 °C	1,092.6 µS/cm	7.08 mg/L	2.53 NTU	188.6 mV	500.79 cm	100.00 ml/min
4/23/2024 1:30 PM	05:00	6.93 pH	16.11 °C	1,094.1 µS/cm	7.12 mg/L	2.77 NTU	194.4 mV	500.79 cm	100.00 ml/min
4/23/2024 1:31 PM	06:00	6.94 pH	16.21 °C	1,092.9 µS/cm	7.24 mg/L	4.27 NTU	196.1 mV	500.79 cm	100.00 ml/min
4/23/2024 1:32 PM	07:00	6.95 pH	16.21 °C	1,095.7 µS/cm	7.36 mg/L	5.00 NTU	195.9 mV	500.79 cm	100.00 ml/min
4/23/2024 1:33 PM	08:00	6.96 pH	16.32 °C	1,094.1 µS/cm	7.42 mg/L	5.41 NTU	197.8 mV	500.79 cm	100.00 ml/min
4/23/2024 1:34 PM	09:00	6.97 pH	16.42 °C	1,091.8 µS/cm	7.48 mg/L	6.13 NTU	197.8 mV	500.79 cm	100.00 ml/min
4/23/2024 1:35 PM	10:00	6.97 pH	16.48 °C	1,093.1 µS/cm	7.47 mg/L	6.04 NTU	199.4 mV	500.79 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 4/23/2024 2:20:34 PM
Project: OW-222B
Operator Name:

Location Name: OW-222B
Initial Depth to Water: 14.92 ft

Estimated Total Volume Pumped: 1200 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 120 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
4/23/2024 2:20 PM	00:00	6.78 pH	19.69 °C	1,376.1 µS/cm	2.09 mg/L	3.56 NTU	203.6 mV	454.76 cm	120.00 ml/min
4/23/2024 2:21 PM	01:00	6.73 pH	18.26 °C	1,376.4 µS/cm	1.25 mg/L	2.34 NTU	195.2 mV	454.76 cm	120.00 ml/min
4/23/2024 2:22 PM	02:00	6.68 pH	17.61 °C	1,384.9 µS/cm	0.83 mg/L	2.56 NTU	187.2 mV	454.76 cm	120.00 ml/min
4/23/2024 2:23 PM	03:00	6.63 pH	17.62 °C	1,390.7 µS/cm	0.63 mg/L	2.63 NTU	178.5 mV	454.76 cm	120.00 ml/min
4/23/2024 2:24 PM	04:00	6.58 pH	18.03 °C	1,393.5 µS/cm	0.53 mg/L	3.23 NTU	169.6 mV	454.76 cm	120.00 ml/min
4/23/2024 2:25 PM	05:00	6.56 pH	18.48 °C	1,396.0 µS/cm	0.46 mg/L	5.38 NTU	160.6 mV	454.76 cm	120.00 ml/min
4/23/2024 2:26 PM	06:00	6.54 pH	18.84 °C	1,394.5 µS/cm	0.41 mg/L	5.40 NTU	151.3 mV	454.76 cm	120.00 ml/min
4/23/2024 2:27 PM	07:00	6.54 pH	19.07 °C	1,394.4 µS/cm	0.39 mg/L	5.12 NTU	142.1 mV	454.76 cm	120.00 ml/min
4/23/2024 2:28 PM	08:00	6.56 pH	18.86 °C	1,393.6 µS/cm	0.43 mg/L	7.17 NTU	133.8 mV	454.76 cm	120.00 ml/min
4/23/2024 2:29 PM	09:00	6.58 pH	18.34 °C	1,391.5 µS/cm	0.61 mg/L	9.66 NTU	126.3 mV	454.76 cm	120.00 ml/min
4/23/2024 2:30 PM	10:00	6.61 pH	18.18 °C	1,389.5 µS/cm	1.13 mg/L	12.30 NTU	119.7 mV	454.76 cm	120.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 4/23/2024 3:03:59 PM
Project: OW-221B
Operator Name:

Location Name: OW-221B
Initial Depth to Water: 16.79 ft

Estimated Total Volume Pumped: 1000 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
4/23/2024 3:03 PM	00:00	6.80 pH	19.16 °C	793.58 µS/cm	1.22 mg/L	10.63 NTU	-17.6 mV	511.76 cm	100.00 ml/min
4/23/2024 3:04 PM	01:00	6.77 pH	18.27 °C	789.06 µS/cm	0.85 mg/L	11.31 NTU	-21.3 mV	511.76 cm	100.00 ml/min
4/23/2024 3:05 PM	02:00	6.74 pH	17.54 °C	783.53 µS/cm	0.74 mg/L	15.31 NTU	-23.2 mV	511.76 cm	100.00 ml/min
4/23/2024 3:06 PM	03:00	6.71 pH	16.60 °C	780.55 µS/cm	0.80 mg/L	15.75 NTU	-23.8 mV	511.76 cm	100.00 ml/min
4/23/2024 3:07 PM	04:00	6.68 pH	15.93 °C	780.25 µS/cm	0.95 mg/L	15.05 NTU	-23.6 mV	511.76 cm	100.00 ml/min
4/23/2024 3:08 PM	05:00	6.64 pH	15.87 °C	780.55 µS/cm	1.18 mg/L	14.79 NTU	-22.7 mV	511.76 cm	100.00 ml/min
4/23/2024 3:09 PM	06:00	6.61 pH	16.26 °C	782.99 µS/cm	1.38 mg/L	15.31 NTU	-22.2 mV	511.76 cm	100.00 ml/min
4/23/2024 3:10 PM	07:00	6.59 pH	16.56 °C	783.06 µS/cm	1.41 mg/L	13.43 NTU	-22.7 mV	511.76 cm	100.00 ml/min
4/23/2024 3:11 PM	08:00	6.57 pH	16.70 °C	784.18 µS/cm	1.29 mg/L	13.03 NTU	-24.1 mV	511.76 cm	100.00 ml/min
4/23/2024 3:12 PM	09:00	6.58 pH	16.58 °C	783.84 µS/cm	1.28 mg/L	14.56 NTU	-25.6 mV	511.76 cm	100.00 ml/min
4/23/2024 3:13 PM	10:00	6.58 pH	16.48 °C	781.31 µS/cm	1.24 mg/L	13.42 NTU	-27.2 mV	511.76 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 4/23/2024 3:03:59 PM
Project: OW-221B
Operator Name:

Location Name: OW-221B
Initial Depth to Water: 16.79 ft

Estimated Total Volume Pumped: 1000 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
4/23/2024 3:03 PM	00:00	6.80 pH	19.16 °C	793.58 µS/cm	1.22 mg/L	10.63 NTU	-17.6 mV	511.76 cm	100.00 ml/min
4/23/2024 3:04 PM	01:00	6.77 pH	18.27 °C	789.06 µS/cm	0.85 mg/L	11.31 NTU	-21.3 mV	511.76 cm	100.00 ml/min
4/23/2024 3:05 PM	02:00	6.74 pH	17.54 °C	783.53 µS/cm	0.74 mg/L	15.31 NTU	-23.2 mV	511.76 cm	100.00 ml/min
4/23/2024 3:06 PM	03:00	6.71 pH	16.60 °C	780.55 µS/cm	0.80 mg/L	15.75 NTU	-23.8 mV	511.76 cm	100.00 ml/min
4/23/2024 3:07 PM	04:00	6.68 pH	15.93 °C	780.25 µS/cm	0.95 mg/L	15.05 NTU	-23.6 mV	511.76 cm	100.00 ml/min
4/23/2024 3:08 PM	05:00	6.64 pH	15.87 °C	780.55 µS/cm	1.18 mg/L	14.79 NTU	-22.7 mV	511.76 cm	100.00 ml/min
4/23/2024 3:09 PM	06:00	6.61 pH	16.26 °C	782.99 µS/cm	1.38 mg/L	15.31 NTU	-22.2 mV	511.76 cm	100.00 ml/min
4/23/2024 3:10 PM	07:00	6.59 pH	16.56 °C	783.06 µS/cm	1.41 mg/L	13.43 NTU	-22.7 mV	511.76 cm	100.00 ml/min
4/23/2024 3:11 PM	08:00	6.57 pH	16.70 °C	784.18 µS/cm	1.29 mg/L	13.03 NTU	-24.1 mV	511.76 cm	100.00 ml/min
4/23/2024 3:12 PM	09:00	6.58 pH	16.58 °C	783.84 µS/cm	1.28 mg/L	14.56 NTU	-25.6 mV	511.76 cm	100.00 ml/min
4/23/2024 3:13 PM	10:00	6.58 pH	16.48 °C	781.31 µS/cm	1.24 mg/L	13.42 NTU	-27.2 mV	511.76 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 4/24/2024 1:13:12 PM
Project: OW-205B
Operator Name:

Location Name: OW-205B
Initial Depth to Water: 8.62 ft

Estimated Total Volume Pumped: 1000 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
4/24/2024 1:13 PM	00:00	6.49 pH	20.09 °C	1,789.0 µS/cm	3.20 mg/L	125.71 NTU	202.8 mV	262.74 cm	100.00 ml/min
4/24/2024 1:14 PM	01:00	6.46 pH	19.27 °C	1,796.8 µS/cm	1.71 mg/L	126.13 NTU	200.1 mV	262.74 cm	100.00 ml/min
4/24/2024 1:15 PM	02:00	6.44 pH	18.37 °C	1,819.1 µS/cm	1.09 mg/L	110.47 NTU	197.3 mV	262.74 cm	100.00 ml/min
4/24/2024 1:16 PM	03:00	6.43 pH	18.11 °C	1,827.3 µS/cm	0.88 mg/L	90.89 NTU	194.4 mV	262.74 cm	100.00 ml/min
4/24/2024 1:17 PM	04:00	6.43 pH	17.94 °C	1,827.1 µS/cm	0.84 mg/L	87.56 NTU	192.0 mV	262.74 cm	100.00 ml/min
4/24/2024 1:18 PM	05:00	6.43 pH	17.78 °C	1,829.6 µS/cm	0.82 mg/L	85.74 NTU	189.5 mV	262.74 cm	100.00 ml/min
4/24/2024 1:19 PM	06:00	6.43 pH	17.76 °C	1,833.5 µS/cm	0.89 mg/L	82.29 NTU	187.1 mV	262.74 cm	100.00 ml/min
4/24/2024 1:20 PM	07:00	6.44 pH	17.79 °C	1,833.3 µS/cm	0.96 mg/L	73.51 NTU	184.9 mV	262.74 cm	100.00 ml/min
4/24/2024 1:21 PM	08:00	6.45 pH	17.87 °C	1,831.2 µS/cm	1.19 mg/L	70.80 NTU	182.5 mV	262.74 cm	100.00 ml/min
4/24/2024 1:22 PM	09:00	6.46 pH	17.87 °C	1,833.4 µS/cm	1.58 mg/L	67.32 NTU	180.2 mV	262.74 cm	100.00 ml/min
4/24/2024 1:23 PM	10:00	6.48 pH	17.66 °C	1,832.1 µS/cm	2.08 mg/L	59.73 NTU	178.2 mV	262.74 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 4/24/2024 2:08:19 PM
Project: OW-224B
Operator Name:

Location Name: OW-224B
Initial Depth to Water: 12.22 ft

Estimated Total Volume Pumped: 1000 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
4/24/2024 2:08 PM	00:00	6.62 pH	20.89 °C	5,741.6 µS/cm	2.34 mg/L	20.15 NTU	124.2 mV	372.47 cm	100.00 ml/min
4/24/2024 2:09 PM	01:00	6.63 pH	17.47 °C	6,135.4 µS/cm	1.07 mg/L	22.58 NTU	115.4 mV	372.47 cm	100.00 ml/min
4/24/2024 2:10 PM	02:00	6.60 pH	16.07 °C	6,196.7 µS/cm	0.55 mg/L	30.38 NTU	112.1 mV	372.47 cm	100.00 ml/min
4/24/2024 2:11 PM	03:00	6.57 pH	15.53 °C	6,203.5 µS/cm	0.29 mg/L	50.83 NTU	109.7 mV	372.47 cm	100.00 ml/min
4/24/2024 2:12 PM	04:00	6.56 pH	15.15 °C	6,187.5 µS/cm	0.18 mg/L	70.22 NTU	107.5 mV	372.47 cm	100.00 ml/min
4/24/2024 2:13 PM	05:00	6.55 pH	14.84 °C	6,174.4 µS/cm	0.14 mg/L	85.67 NTU	105.6 mV	372.47 cm	100.00 ml/min
4/24/2024 2:14 PM	06:00	6.54 pH	14.58 °C	6,178.4 µS/cm	0.11 mg/L	75.68 NTU	103.8 mV	372.47 cm	100.00 ml/min
4/24/2024 2:15 PM	07:00	6.54 pH	14.49 °C	6,176.9 µS/cm	0.10 mg/L	81.38 NTU	102.2 mV	372.47 cm	100.00 ml/min
4/24/2024 2:16 PM	08:00	6.55 pH	14.42 °C	6,144.9 µS/cm	0.16 mg/L	83.06 NTU	100.3 mV	372.47 cm	100.00 ml/min
4/24/2024 2:17 PM	09:00	6.58 pH	14.33 °C	6,077.4 µS/cm	0.55 mg/L	81.78 NTU	98.5 mV	372.47 cm	100.00 ml/min
4/24/2024 2:18 PM	10:00	6.60 pH	14.27 °C	6,007.9 µS/cm	1.10 mg/L	67.89 NTU	97.3 mV	372.47 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 4/24/2024 2:08:19 PM
Project: OW-224B
Operator Name:

Location Name: OW-224B
Initial Depth to Water: 12.22 ft

Estimated Total Volume Pumped: 1000 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
4/24/2024 2:08 PM	00:00	6.62 pH	20.89 °C	5,741.6 µS/cm	2.34 mg/L	20.15 NTU	124.2 mV	372.47 cm	100.00 ml/min
4/24/2024 2:09 PM	01:00	6.63 pH	17.47 °C	6,135.4 µS/cm	1.07 mg/L	22.58 NTU	115.4 mV	372.47 cm	100.00 ml/min
4/24/2024 2:10 PM	02:00	6.60 pH	16.07 °C	6,196.7 µS/cm	0.55 mg/L	30.38 NTU	112.1 mV	372.47 cm	100.00 ml/min
4/24/2024 2:11 PM	03:00	6.57 pH	15.53 °C	6,203.5 µS/cm	0.29 mg/L	50.83 NTU	109.7 mV	372.47 cm	100.00 ml/min
4/24/2024 2:12 PM	04:00	6.56 pH	15.15 °C	6,187.5 µS/cm	0.18 mg/L	70.22 NTU	107.5 mV	372.47 cm	100.00 ml/min
4/24/2024 2:13 PM	05:00	6.55 pH	14.84 °C	6,174.4 µS/cm	0.14 mg/L	85.67 NTU	105.6 mV	372.47 cm	100.00 ml/min
4/24/2024 2:14 PM	06:00	6.54 pH	14.58 °C	6,178.4 µS/cm	0.11 mg/L	75.68 NTU	103.8 mV	372.47 cm	100.00 ml/min
4/24/2024 2:15 PM	07:00	6.54 pH	14.49 °C	6,176.9 µS/cm	0.10 mg/L	81.38 NTU	102.2 mV	372.47 cm	100.00 ml/min
4/24/2024 2:16 PM	08:00	6.55 pH	14.42 °C	6,144.9 µS/cm	0.16 mg/L	83.06 NTU	100.3 mV	372.47 cm	100.00 ml/min
4/24/2024 2:17 PM	09:00	6.58 pH	14.33 °C	6,077.4 µS/cm	0.55 mg/L	81.78 NTU	98.5 mV	372.47 cm	100.00 ml/min
4/24/2024 2:18 PM	10:00	6.60 pH	14.27 °C	6,007.9 µS/cm	1.10 mg/L	67.89 NTU	97.3 mV	372.47 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 4/24/2024 2:46:53 PM
Project: OW-225B
Operator Name:

Location Name: OW-225B
Initial Depth to Water: 10.69 ft

Estimated Total Volume Pumped: 1000 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
4/24/2024 2:46 PM	00:00	6.80 pH	19.52 °C	5,484.3 µS/cm	3.32 mg/L	43.80 NTU	83.7 mV	325.83 cm	100.00 ml/min
4/24/2024 2:47 PM	01:00	6.69 pH	17.60 °C	5,477.7 µS/cm	1.69 mg/L	40.09 NTU	92.5 mV	325.83 cm	100.00 ml/min
4/24/2024 2:48 PM	02:00	6.65 pH	16.34 °C	5,412.4 µS/cm	0.89 mg/L	33.69 NTU	95.1 mV	325.83 cm	100.00 ml/min
4/24/2024 2:49 PM	03:00	6.63 pH	15.77 °C	5,431.6 µS/cm	0.57 mg/L	50.23 NTU	96.2 mV	325.83 cm	100.00 ml/min
4/24/2024 2:50 PM	04:00	6.62 pH	15.36 °C	5,455.7 µS/cm	0.51 mg/L	44.18 NTU	96.8 mV	325.83 cm	100.00 ml/min
4/24/2024 2:51 PM	05:00	6.61 pH	15.21 °C	5,456.3 µS/cm	0.46 mg/L	37.66 NTU	97.1 mV	325.83 cm	100.00 ml/min
4/24/2024 2:52 PM	06:00	6.61 pH	15.08 °C	5,458.1 µS/cm	0.53 mg/L	36.70 NTU	97.2 mV	325.83 cm	100.00 ml/min
4/24/2024 2:53 PM	07:00	6.60 pH	15.06 °C	5,456.6 µS/cm	0.54 mg/L	35.59 NTU	97.4 mV	325.83 cm	100.00 ml/min
4/24/2024 2:54 PM	08:00	6.60 pH	14.94 °C	5,450.0 µS/cm	0.58 mg/L	37.57 NTU	97.4 mV	325.83 cm	100.00 ml/min
4/24/2024 2:55 PM	09:00	6.61 pH	14.87 °C	5,446.7 µS/cm	0.73 mg/L	49.19 NTU	97.4 mV	325.83 cm	100.00 ml/min
4/24/2024 2:56 PM	10:00	6.62 pH	14.94 °C	5,451.6 µS/cm	1.04 mg/L	48.28 NTU	97.4 mV	325.83 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 4/24/2024 2:46:53 PM
Project: OW-225B
Operator Name:

Location Name: OW-225B
Initial Depth to Water: 10.69 ft

Estimated Total Volume Pumped: 1000 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
4/24/2024 2:46 PM	00:00	6.80 pH	19.52 °C	5,484.3 µS/cm	3.32 mg/L	43.80 NTU	83.7 mV	325.83 cm	100.00 ml/min
4/24/2024 2:47 PM	01:00	6.69 pH	17.60 °C	5,477.7 µS/cm	1.69 mg/L	40.09 NTU	92.5 mV	325.83 cm	100.00 ml/min
4/24/2024 2:48 PM	02:00	6.65 pH	16.34 °C	5,412.4 µS/cm	0.89 mg/L	33.69 NTU	95.1 mV	325.83 cm	100.00 ml/min
4/24/2024 2:49 PM	03:00	6.63 pH	15.77 °C	5,431.6 µS/cm	0.57 mg/L	50.23 NTU	96.2 mV	325.83 cm	100.00 ml/min
4/24/2024 2:50 PM	04:00	6.62 pH	15.36 °C	5,455.7 µS/cm	0.51 mg/L	44.18 NTU	96.8 mV	325.83 cm	100.00 ml/min
4/24/2024 2:51 PM	05:00	6.61 pH	15.21 °C	5,456.3 µS/cm	0.46 mg/L	37.66 NTU	97.1 mV	325.83 cm	100.00 ml/min
4/24/2024 2:52 PM	06:00	6.61 pH	15.08 °C	5,458.1 µS/cm	0.53 mg/L	36.70 NTU	97.2 mV	325.83 cm	100.00 ml/min
4/24/2024 2:53 PM	07:00	6.60 pH	15.06 °C	5,456.6 µS/cm	0.54 mg/L	35.59 NTU	97.4 mV	325.83 cm	100.00 ml/min
4/24/2024 2:54 PM	08:00	6.60 pH	14.94 °C	5,450.0 µS/cm	0.58 mg/L	37.57 NTU	97.4 mV	325.83 cm	100.00 ml/min
4/24/2024 2:55 PM	09:00	6.61 pH	14.87 °C	5,446.7 µS/cm	0.73 mg/L	49.19 NTU	97.4 mV	325.83 cm	100.00 ml/min
4/24/2024 2:56 PM	10:00	6.62 pH	14.94 °C	5,451.6 µS/cm	1.04 mg/L	48.28 NTU	97.4 mV	325.83 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 4/30/2024 11:15:17 AM
Project: OW-709B
Operator Name:

Location Name: MW-709B
Initial Depth to Water: 18.8 ft

Estimated Total Volume Pumped: 1000 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
4/30/2024 11:15 AM	00:00	6.78 pH	19.19 °C	1,500.3 µS/cm	5.13 mg/L	3.23 NTU	220.3 mV	573.02 cm	100.00 ml/min
4/30/2024 11:16 AM	01:00	6.78 pH	18.18 °C	1,457.5 µS/cm	4.64 mg/L	2.72 NTU	225.4 mV	573.02 cm	100.00 ml/min
4/30/2024 11:17 AM	02:00	6.77 pH	17.59 °C	1,440.6 µS/cm	4.40 mg/L	2.38 NTU	228.8 mV	573.02 cm	100.00 ml/min
4/30/2024 11:18 AM	03:00	6.77 pH	17.20 °C	1,433.8 µS/cm	4.42 mg/L	3.18 NTU	231.7 mV	573.02 cm	100.00 ml/min
4/30/2024 11:19 AM	04:00	6.79 pH	16.92 °C	1,430.7 µS/cm	4.61 mg/L	6.22 NTU	233.2 mV	573.02 cm	100.00 ml/min
4/30/2024 11:20 AM	05:00	6.79 pH	16.74 °C	1,425.3 µS/cm	4.69 mg/L	7.55 NTU	235.0 mV	573.02 cm	100.00 ml/min
4/30/2024 11:21 AM	06:00	6.81 pH	16.67 °C	1,423.6 µS/cm	4.95 mg/L	8.92 NTU	235.5 mV	573.02 cm	100.00 ml/min
4/30/2024 11:22 AM	07:00	6.84 pH	16.72 °C	1,423.6 µS/cm	5.50 mg/L	9.63 NTU	235.0 mV	573.02 cm	100.00 ml/min
4/30/2024 11:23 AM	08:00	6.88 pH	16.68 °C	1,423.1 µS/cm	6.08 mg/L	6.85 NTU	234.4 mV	573.02 cm	100.00 ml/min
4/30/2024 11:24 AM	09:00	6.92 pH	16.58 °C	1,422.1 µS/cm	6.53 mg/L	6.44 NTU	234.3 mV	573.02 cm	100.00 ml/min
4/30/2024 11:25 AM	10:00	6.95 pH	16.35 °C	1,408.2 µS/cm	6.77 mg/L	7.02 NTU	234.6 mV	573.02 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 4/30/2024 11:15:17 AM
Project: OW-709B
Operator Name:

Location Name: MW-709B
Initial Depth to Water: 18.8 ft

Estimated Total Volume Pumped: 1000 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
4/30/2024 11:15 AM	00:00	6.78 pH	19.19 °C	1,500.3 µS/cm	5.13 mg/L	3.23 NTU	220.3 mV	573.02 cm	100.00 ml/min
4/30/2024 11:16 AM	01:00	6.78 pH	18.18 °C	1,457.5 µS/cm	4.64 mg/L	2.72 NTU	225.4 mV	573.02 cm	100.00 ml/min
4/30/2024 11:17 AM	02:00	6.77 pH	17.59 °C	1,440.6 µS/cm	4.40 mg/L	2.38 NTU	228.8 mV	573.02 cm	100.00 ml/min
4/30/2024 11:18 AM	03:00	6.77 pH	17.20 °C	1,433.8 µS/cm	4.42 mg/L	3.18 NTU	231.7 mV	573.02 cm	100.00 ml/min
4/30/2024 11:19 AM	04:00	6.79 pH	16.92 °C	1,430.7 µS/cm	4.61 mg/L	6.22 NTU	233.2 mV	573.02 cm	100.00 ml/min
4/30/2024 11:20 AM	05:00	6.79 pH	16.74 °C	1,425.3 µS/cm	4.69 mg/L	7.55 NTU	235.0 mV	573.02 cm	100.00 ml/min
4/30/2024 11:21 AM	06:00	6.81 pH	16.67 °C	1,423.6 µS/cm	4.95 mg/L	8.92 NTU	235.5 mV	573.02 cm	100.00 ml/min
4/30/2024 11:22 AM	07:00	6.84 pH	16.72 °C	1,423.6 µS/cm	5.50 mg/L	9.63 NTU	235.0 mV	573.02 cm	100.00 ml/min
4/30/2024 11:23 AM	08:00	6.88 pH	16.68 °C	1,423.1 µS/cm	6.08 mg/L	6.85 NTU	234.4 mV	573.02 cm	100.00 ml/min
4/30/2024 11:24 AM	09:00	6.92 pH	16.58 °C	1,422.1 µS/cm	6.53 mg/L	6.44 NTU	234.3 mV	573.02 cm	100.00 ml/min
4/30/2024 11:25 AM	10:00	6.95 pH	16.35 °C	1,408.2 µS/cm	6.77 mg/L	7.02 NTU	234.6 mV	573.02 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 4/30/2024 11:15:17 AM
Project: OW-709B
Operator Name:

Location Name: MW-709B
Initial Depth to Water: 18.8 ft

Estimated Total Volume Pumped: 1000 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
4/30/2024 11:15 AM	00:00	6.78 pH	19.19 °C	1,500.3 µS/cm	5.13 mg/L	3.23 NTU	220.3 mV	573.02 cm	100.00 ml/min
4/30/2024 11:16 AM	01:00	6.78 pH	18.18 °C	1,457.5 µS/cm	4.64 mg/L	2.72 NTU	225.4 mV	573.02 cm	100.00 ml/min
4/30/2024 11:17 AM	02:00	6.77 pH	17.59 °C	1,440.6 µS/cm	4.40 mg/L	2.38 NTU	228.8 mV	573.02 cm	100.00 ml/min
4/30/2024 11:18 AM	03:00	6.77 pH	17.20 °C	1,433.8 µS/cm	4.42 mg/L	3.18 NTU	231.7 mV	573.02 cm	100.00 ml/min
4/30/2024 11:19 AM	04:00	6.79 pH	16.92 °C	1,430.7 µS/cm	4.61 mg/L	6.22 NTU	233.2 mV	573.02 cm	100.00 ml/min
4/30/2024 11:20 AM	05:00	6.79 pH	16.74 °C	1,425.3 µS/cm	4.69 mg/L	7.55 NTU	235.0 mV	573.02 cm	100.00 ml/min
4/30/2024 11:21 AM	06:00	6.81 pH	16.67 °C	1,423.6 µS/cm	4.95 mg/L	8.92 NTU	235.5 mV	573.02 cm	100.00 ml/min
4/30/2024 11:22 AM	07:00	6.84 pH	16.72 °C	1,423.6 µS/cm	5.50 mg/L	9.63 NTU	235.0 mV	573.02 cm	100.00 ml/min
4/30/2024 11:23 AM	08:00	6.88 pH	16.68 °C	1,423.1 µS/cm	6.08 mg/L	6.85 NTU	234.4 mV	573.02 cm	100.00 ml/min
4/30/2024 11:24 AM	09:00	6.92 pH	16.58 °C	1,422.1 µS/cm	6.53 mg/L	6.44 NTU	234.3 mV	573.02 cm	100.00 ml/min
4/30/2024 11:25 AM	10:00	6.95 pH	16.35 °C	1,408.2 µS/cm	6.77 mg/L	7.02 NTU	234.6 mV	573.02 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 4/30/2024 12:10:15 PM
Project: MW-711B
Operator Name:

Location Name: MW-711B
Initial Depth to Water: 8.51 ft

Estimated Total Volume Pumped: 1100 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
4/30/2024 12:10 PM	00:00	6.73 pH	20.01 °C	1,618.6 µS/cm	2.98 mg/L	6.37 NTU	266.2 mV	259.38 cm	100.00 ml/min
4/30/2024 12:11 PM	01:00	6.67 pH	18.96 °C	1,625.9 µS/cm	1.63 mg/L	8.16 NTU	268.8 mV	259.38 cm	100.00 ml/min
4/30/2024 12:12 PM	02:00	6.65 pH	18.39 °C	1,626.2 µS/cm	1.26 mg/L	9.18 NTU	269.5 mV	259.38 cm	100.00 ml/min
4/30/2024 12:13 PM	03:00	6.63 pH	18.07 °C	1,624.9 µS/cm	1.08 mg/L	18.75 NTU	269.9 mV	259.38 cm	100.00 ml/min
4/30/2024 12:14 PM	04:00	6.62 pH	17.94 °C	1,620.2 µS/cm	1.09 mg/L	15.30 NTU	270.0 mV	259.38 cm	100.00 ml/min
4/30/2024 12:15 PM	05:00	6.62 pH	17.95 °C	1,624.9 µS/cm	1.18 mg/L	15.79 NTU	269.8 mV	259.38 cm	100.00 ml/min
4/30/2024 12:16 PM	06:00	6.62 pH	18.11 °C	1,626.9 µS/cm	1.38 mg/L	18.58 NTU	269.2 mV	259.38 cm	100.00 ml/min
4/30/2024 12:17 PM	07:00	6.63 pH	18.20 °C	1,626.7 µS/cm	1.74 mg/L	27.41 NTU	268.4 mV	259.38 cm	100.00 ml/min
4/30/2024 12:18 PM	08:00	6.66 pH	18.29 °C	1,625.4 µS/cm	2.36 mg/L	27.57 NTU	267.0 mV	259.38 cm	100.00 ml/min
4/30/2024 12:19 PM	09:00	6.66 pH	18.50 °C	1,625.7 µS/cm	2.83 mg/L	26.91 NTU	266.2 mV	259.38 cm	100.00 ml/min
4/30/2024 12:20 PM	10:00	6.67 pH	18.69 °C	1,627.2 µS/cm	2.99 mg/L	16.95 NTU	265.8 mV	259.38 cm	100.00 ml/min
4/30/2024 12:21 PM	11:00	6.67 pH	18.79 °C	1,625.5 µS/cm	2.98 mg/L	26.14 NTU	265.4 mV	259.38 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 4/30/2024 12:10:15 PM
Project: MW-711B
Operator Name:

Location Name: MW-711B
Initial Depth to Water: 8.51 ft

Estimated Total Volume Pumped: 1100 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
4/30/2024 12:10 PM	00:00	6.73 pH	20.01 °C	1,618.6 µS/cm	2.98 mg/L	6.37 NTU	266.2 mV	259.38 cm	100.00 ml/min
4/30/2024 12:11 PM	01:00	6.67 pH	18.96 °C	1,625.9 µS/cm	1.63 mg/L	8.16 NTU	268.8 mV	259.38 cm	100.00 ml/min
4/30/2024 12:12 PM	02:00	6.65 pH	18.39 °C	1,626.2 µS/cm	1.26 mg/L	9.18 NTU	269.5 mV	259.38 cm	100.00 ml/min
4/30/2024 12:13 PM	03:00	6.63 pH	18.07 °C	1,624.9 µS/cm	1.08 mg/L	18.75 NTU	269.9 mV	259.38 cm	100.00 ml/min
4/30/2024 12:14 PM	04:00	6.62 pH	17.94 °C	1,620.2 µS/cm	1.09 mg/L	15.30 NTU	270.0 mV	259.38 cm	100.00 ml/min
4/30/2024 12:15 PM	05:00	6.62 pH	17.95 °C	1,624.9 µS/cm	1.18 mg/L	15.79 NTU	269.8 mV	259.38 cm	100.00 ml/min
4/30/2024 12:16 PM	06:00	6.62 pH	18.11 °C	1,626.9 µS/cm	1.38 mg/L	18.58 NTU	269.2 mV	259.38 cm	100.00 ml/min
4/30/2024 12:17 PM	07:00	6.63 pH	18.20 °C	1,626.7 µS/cm	1.74 mg/L	27.41 NTU	268.4 mV	259.38 cm	100.00 ml/min
4/30/2024 12:18 PM	08:00	6.66 pH	18.29 °C	1,625.4 µS/cm	2.36 mg/L	27.57 NTU	267.0 mV	259.38 cm	100.00 ml/min
4/30/2024 12:19 PM	09:00	6.66 pH	18.50 °C	1,625.7 µS/cm	2.83 mg/L	26.91 NTU	266.2 mV	259.38 cm	100.00 ml/min
4/30/2024 12:20 PM	10:00	6.67 pH	18.69 °C	1,627.2 µS/cm	2.99 mg/L	16.95 NTU	265.8 mV	259.38 cm	100.00 ml/min
4/30/2024 12:21 PM	11:00	6.67 pH	18.79 °C	1,625.5 µS/cm	2.98 mg/L	26.14 NTU	265.4 mV	259.38 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 4/30/2024 1:27:55 PM
Project: MW-712B
Operator Name:

Location Name: MW-712B
Initial Depth to Water: 13.56 ft

Estimated Total Volume Pumped: 1000 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
4/30/2024 1:27 PM	00:00	6.63 pH	21.63 °C	1,598.3 µS/cm	2.15 mg/L	3.68 NTU	278.4 mV	413.31 cm	100.00 ml/min
4/30/2024 1:28 PM	01:00	6.60 pH	21.03 °C	1,596.4 µS/cm	1.65 mg/L	3.14 NTU	279.2 mV	413.31 cm	100.00 ml/min
4/30/2024 1:29 PM	02:00	6.57 pH	20.59 °C	1,597.6 µS/cm	1.29 mg/L	4.24 NTU	279.9 mV	413.31 cm	100.00 ml/min
4/30/2024 1:30 PM	03:00	6.55 pH	20.31 °C	1,594.7 µS/cm	1.06 mg/L	5.21 NTU	280.5 mV	413.31 cm	100.00 ml/min
4/30/2024 1:31 PM	04:00	6.53 pH	20.04 °C	1,597.9 µS/cm	0.92 mg/L	2.45 NTU	281.1 mV	413.31 cm	100.00 ml/min
4/30/2024 1:32 PM	05:00	6.52 pH	19.83 °C	1,593.4 µS/cm	0.79 mg/L	6.23 NTU	281.5 mV	413.31 cm	100.00 ml/min
4/30/2024 1:33 PM	06:00	6.51 pH	19.65 °C	1,593.2 µS/cm	0.71 mg/L	4.07 NTU	281.9 mV	413.31 cm	100.00 ml/min
4/30/2024 1:34 PM	07:00	6.50 pH	19.40 °C	1,593.4 µS/cm	0.65 mg/L	2.38 NTU	282.1 mV	413.31 cm	100.00 ml/min
4/30/2024 1:35 PM	08:00	6.49 pH	19.14 °C	1,591.9 µS/cm	0.63 mg/L	2.41 NTU	282.4 mV	413.31 cm	100.00 ml/min
4/30/2024 1:36 PM	09:00	6.49 pH	18.97 °C	1,590.8 µS/cm	0.64 mg/L	4.04 NTU	282.6 mV	413.31 cm	100.00 ml/min
4/30/2024 1:37 PM	10:00	6.48 pH	18.84 °C	1,587.3 µS/cm	0.65 mg/L	2.63 NTU	282.7 mV	413.31 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 5/1/2024 11:15:26 AM
Project: MW-602B
Operator Name:

Location Name: MW-602B
Initial Depth to Water: 11.99 ft

Estimated Total Volume Pumped: 1000 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
5/1/2024 11:15 AM	00:00	7.13 pH	15.88 °C	1,171.5 µS/cm	2.78 mg/L	1.65 NTU	223.3 mV	365.46 cm	100.00 ml/min
5/1/2024 11:16 AM	01:00	7.10 pH	15.41 °C	1,164.0 µS/cm	1.63 mg/L	0.80 NTU	225.9 mV	365.46 cm	100.00 ml/min
5/1/2024 11:17 AM	02:00	7.08 pH	15.26 °C	1,160.7 µS/cm	1.09 mg/L	0.79 NTU	227.7 mV	365.46 cm	100.00 ml/min
5/1/2024 11:18 AM	03:00	7.07 pH	15.23 °C	1,158.1 µS/cm	0.81 mg/L	0.66 NTU	229.1 mV	365.46 cm	100.00 ml/min
5/1/2024 11:19 AM	04:00	7.07 pH	15.14 °C	1,162.2 µS/cm	0.65 mg/L	0.74 NTU	229.8 mV	365.46 cm	100.00 ml/min
5/1/2024 11:20 AM	05:00	7.07 pH	15.04 °C	1,160.4 µS/cm	0.59 mg/L	0.71 NTU	230.0 mV	365.46 cm	100.00 ml/min
5/1/2024 11:21 AM	06:00	7.07 pH	14.97 °C	1,157.5 µS/cm	0.57 mg/L	0.67 NTU	230.4 mV	365.46 cm	100.00 ml/min
5/1/2024 11:22 AM	07:00	7.07 pH	14.94 °C	1,157.7 µS/cm	0.56 mg/L	0.75 NTU	230.8 mV	365.46 cm	100.00 ml/min
5/1/2024 11:23 AM	08:00	7.07 pH	14.90 °C	1,159.1 µS/cm	0.56 mg/L	0.88 NTU	230.6 mV	365.46 cm	100.00 ml/min
5/1/2024 11:24 AM	09:00	7.07 pH	14.90 °C	1,159.2 µS/cm	0.54 mg/L	1.64 NTU	230.6 mV	365.46 cm	100.00 ml/min
5/1/2024 11:25 AM	10:00	7.07 pH	14.87 °C	1,159.7 µS/cm	0.63 mg/L	1.09 NTU	230.5 mV	365.46 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 5/1/2024 12:22:07 PM
Project: MW-710B
Operator Name:

Location Name: MW-710B
Initial Depth to Water: 16.04 ft

Estimated Total Volume Pumped: 1000 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
5/1/2024 12:22 PM	00:00	7.21 pH	17.62 °C	896.33 µS/cm	5.15 mg/L	1.79 NTU	218.9 mV	488.90 cm	100.00 ml/min
5/1/2024 12:23 PM	01:00	7.13 pH	16.61 °C	891.92 µS/cm	4.61 mg/L	1.80 NTU	223.0 mV	488.90 cm	100.00 ml/min
5/1/2024 12:24 PM	02:00	7.08 pH	16.12 °C	890.16 µS/cm	4.29 mg/L	1.92 NTU	225.8 mV	488.90 cm	100.00 ml/min
5/1/2024 12:25 PM	03:00	7.05 pH	15.89 °C	888.46 µS/cm	4.12 mg/L	1.06 NTU	227.5 mV	488.90 cm	100.00 ml/min
5/1/2024 12:26 PM	04:00	7.03 pH	15.68 °C	886.95 µS/cm	4.08 mg/L	1.38 NTU	228.7 mV	488.90 cm	100.00 ml/min
5/1/2024 12:27 PM	05:00	7.01 pH	15.50 °C	886.12 µS/cm	4.08 mg/L	1.92 NTU	229.8 mV	488.90 cm	100.00 ml/min
5/1/2024 12:28 PM	06:00	7.00 pH	15.40 °C	886.66 µS/cm	4.07 mg/L	2.35 NTU	230.3 mV	488.90 cm	100.00 ml/min
5/1/2024 12:29 PM	07:00	6.99 pH	15.33 °C	888.52 µS/cm	4.11 mg/L	2.12 NTU	230.6 mV	488.90 cm	100.00 ml/min
5/1/2024 12:30 PM	08:00	6.99 pH	15.27 °C	887.55 µS/cm	4.13 mg/L	2.54 NTU	231.0 mV	488.90 cm	100.00 ml/min
5/1/2024 12:31 PM	09:00	6.98 pH	15.24 °C	889.00 µS/cm	4.12 mg/L	3.60 NTU	231.2 mV	488.90 cm	100.00 ml/min
5/1/2024 12:32 PM	10:00	6.98 pH	15.21 °C	888.39 µS/cm	4.09 mg/L	4.49 NTU	231.3 mV	488.90 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 5/1/2024 1:16:10 PM
Project: MW-501B
Operator Name:

Location Name: MW-501B
Initial Depth to Water: 9.11 ft

Estimated Total Volume Pumped: 1000 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
5/1/2024 1:16 PM	00:00	7.45 pH	18.80 °C	683.38 µS/cm	3.13 mg/L	0.67 NTU	215.3 mV	277.67 cm	100.00 ml/min
5/1/2024 1:17 PM	01:00	7.45 pH	17.94 °C	679.93 µS/cm	1.71 mg/L	0.64 NTU	217.5 mV	277.67 cm	100.00 ml/min
5/1/2024 1:18 PM	02:00	7.44 pH	17.55 °C	680.00 µS/cm	1.06 mg/L	0.62 NTU	218.5 mV	277.67 cm	100.00 ml/min
5/1/2024 1:19 PM	03:00	7.43 pH	17.49 °C	679.86 µS/cm	0.82 mg/L	1.15 NTU	218.7 mV	277.67 cm	100.00 ml/min
5/1/2024 1:20 PM	04:00	7.43 pH	17.57 °C	679.18 µS/cm	0.72 mg/L	1.78 NTU	218.5 mV	277.67 cm	100.00 ml/min
5/1/2024 1:21 PM	05:00	7.43 pH	17.66 °C	679.54 µS/cm	0.84 mg/L	3.04 NTU	217.9 mV	277.67 cm	100.00 ml/min
5/1/2024 1:22 PM	06:00	7.44 pH	17.69 °C	679.74 µS/cm	1.12 mg/L	3.46 NTU	217.3 mV	277.67 cm	100.00 ml/min
5/1/2024 1:23 PM	07:00	7.45 pH	17.64 °C	678.99 µS/cm	1.54 mg/L	3.99 NTU	216.5 mV	277.67 cm	100.00 ml/min
5/1/2024 1:24 PM	08:00	7.45 pH	17.54 °C	677.99 µS/cm	1.87 mg/L	4.82 NTU	216.4 mV	277.67 cm	100.00 ml/min
5/1/2024 1:25 PM	09:00	7.45 pH	17.25 °C	677.23 µS/cm	1.87 mg/L	2.88 NTU	216.8 mV	277.67 cm	100.00 ml/min
5/1/2024 1:26 PM	10:00	7.46 pH	16.89 °C	676.85 µS/cm	2.14 mg/L	2.96 NTU	216.6 mV	277.67 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 5/1/2024 2:13:01 PM
Project: MW-604B
Operator Name:

Location Name: MW-604B
Initial Depth to Water: 11.07 ft

Estimated Total Volume Pumped: 1200 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
5/1/2024 2:13 PM	00:00	7.30 pH	17.50 °C	998.46 µS/cm	3.44 mg/L	1.07 NTU	229.1 mV	337.41 cm	100.00 ml/min
5/1/2024 2:14 PM	01:00	7.22 pH	16.58 °C	1,003.1 µS/cm	2.35 mg/L	0.62 NTU	232.5 mV	337.41 cm	100.00 ml/min
5/1/2024 2:15 PM	02:00	7.17 pH	16.02 °C	1,008.8 µS/cm	1.60 mg/L	0.78 NTU	234.7 mV	337.41 cm	100.00 ml/min
5/1/2024 2:16 PM	03:00	7.13 pH	15.75 °C	1,009.6 µS/cm	1.14 mg/L	1.30 NTU	236.1 mV	337.41 cm	100.00 ml/min
5/1/2024 2:17 PM	04:00	7.11 pH	15.59 °C	1,010.1 µS/cm	1.12 mg/L	2.20 NTU	237.2 mV	337.41 cm	100.00 ml/min
5/1/2024 2:18 PM	05:00	7.10 pH	15.46 °C	1,009.0 µS/cm	1.56 mg/L	3.71 NTU	237.6 mV	337.41 cm	100.00 ml/min
5/1/2024 2:19 PM	06:00	7.09 pH	15.42 °C	1,009.7 µS/cm	2.09 mg/L	4.56 NTU	237.8 mV	337.41 cm	100.00 ml/min
5/1/2024 2:20 PM	07:00	7.08 pH	15.34 °C	1,008.5 µS/cm	2.32 mg/L	3.65 NTU	238.4 mV	337.41 cm	100.00 ml/min
5/1/2024 2:21 PM	08:00	7.07 pH	15.38 °C	1,008.6 µS/cm	2.50 mg/L	4.45 NTU	238.6 mV	337.41 cm	100.00 ml/min
5/1/2024 2:22 PM	09:00	7.07 pH	15.43 °C	1,008.7 µS/cm	2.78 mg/L	5.28 NTU	238.5 mV	337.41 cm	100.00 ml/min
5/1/2024 2:23 PM	10:00	7.06 pH	15.56 °C	1,007.7 µS/cm	2.81 mg/L	5.19 NTU	238.6 mV	337.41 cm	100.00 ml/min
5/1/2024 2:24 PM	11:00	7.06 pH	15.73 °C	1,008.6 µS/cm	2.95 mg/L	4.31 NTU	238.1 mV	337.41 cm	100.00 ml/min
5/1/2024 2:25 PM	12:00	7.08 pH	15.81 °C	1,008.4 µS/cm	3.38 mg/L	6.52 NTU	237.3 mV	337.41 cm	100.00 ml/min

Samples

Sample ID:	Description:

Created using VuSitu from In-Situ, Inc.

Low-Flow Test Report:

Test Date / Time: 5/6/2024 12:07:10 PM
Project: OW-209B
Operator Name:

Location Name: OW-209B
Initial Depth to Water: 5.49 ft

Estimated Total Volume Pumped: 1200 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 120 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
5/6/2024 12:07 PM	00:00	6.77 pH	20.90 °C	1,116.1 µS/cm	3.19 mg/L	16.78 NTU	197.2 mV	167.34 cm	120.00 ml/min
5/6/2024 12:08 PM	01:00	6.75 pH	19.03 °C	1,105.5 µS/cm	1.57 mg/L	16.54 NTU	203.4 mV	167.34 cm	120.00 ml/min
5/6/2024 12:09 PM	02:00	6.73 pH	17.96 °C	1,111.2 µS/cm	0.86 mg/L	18.43 NTU	207.3 mV	167.34 cm	120.00 ml/min
5/6/2024 12:10 PM	03:00	6.71 pH	17.77 °C	1,109.9 µS/cm	0.55 mg/L	14.60 NTU	210.3 mV	167.34 cm	120.00 ml/min
5/6/2024 12:11 PM	04:00	6.70 pH	17.73 °C	1,112.4 µS/cm	0.54 mg/L	11.73 NTU	212.4 mV	167.34 cm	120.00 ml/min
5/6/2024 12:12 PM	05:00	6.70 pH	17.85 °C	1,111.2 µS/cm	0.65 mg/L	9.93 NTU	213.8 mV	167.34 cm	120.00 ml/min
5/6/2024 12:13 PM	06:00	6.71 pH	17.97 °C	1,110.2 µS/cm	0.81 mg/L	5.78 NTU	214.4 mV	167.34 cm	120.00 ml/min
5/6/2024 12:14 PM	07:00	6.72 pH	18.13 °C	1,111.7 µS/cm	1.08 mg/L	4.62 NTU	214.7 mV	167.34 cm	120.00 ml/min
5/6/2024 12:15 PM	08:00	6.74 pH	18.06 °C	1,108.1 µS/cm	1.49 mg/L	3.44 NTU	214.6 mV	167.34 cm	120.00 ml/min
5/6/2024 12:16 PM	09:00	6.76 pH	18.06 °C	1,100.7 µS/cm	1.95 mg/L	2.23 NTU	214.6 mV	167.34 cm	120.00 ml/min
5/6/2024 12:17 PM	10:00	6.78 pH	17.96 °C	1,104.2 µS/cm	2.57 mg/L	2.28 NTU	214.4 mV	167.34 cm	120.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 5/6/2024 1:11:03 PM
Project: OW-212B
Operator Name:

Location Name: OW-212B
Initial Depth to Water: 6.71 ft

Estimated Total Volume Pumped: 1500 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
5/6/2024 1:11 PM	00:00	6.76 pH	21.21 °C	2,121.5 µS/cm	1.53 mg/L	11.52 NTU	239.5 mV	204.52 cm	100.00 ml/min
5/6/2024 1:12 PM	01:00	6.68 pH	19.73 °C	2,155.5 µS/cm	0.80 mg/L	8.07 NTU	243.1 mV	204.52 cm	100.00 ml/min
5/6/2024 1:13 PM	02:00	6.62 pH	19.17 °C	2,168.5 µS/cm	0.55 mg/L	13.33 NTU	246.4 mV	204.52 cm	100.00 ml/min
5/6/2024 1:14 PM	03:00	6.57 pH	18.81 °C	2,165.1 µS/cm	0.60 mg/L	9.23 NTU	249.2 mV	204.52 cm	100.00 ml/min
5/6/2024 1:15 PM	04:00	6.55 pH	18.70 °C	2,167.2 µS/cm	0.90 mg/L	7.15 NTU	250.8 mV	204.52 cm	100.00 ml/min
5/6/2024 1:16 PM	05:00	6.54 pH	18.40 °C	2,160.7 µS/cm	1.37 mg/L	5.80 NTU	251.3 mV	204.52 cm	100.00 ml/min
5/6/2024 1:17 PM	06:00	6.54 pH	18.26 °C	2,161.8 µS/cm	1.87 mg/L	7.10 NTU	251.3 mV	204.52 cm	100.00 ml/min
5/6/2024 1:18 PM	07:00	6.56 pH	18.15 °C	2,142.0 µS/cm	2.58 mg/L	6.85 NTU	251.0 mV	204.52 cm	100.00 ml/min
5/6/2024 1:19 PM	08:00	6.57 pH	17.98 °C	2,154.1 µS/cm	3.30 mg/L	4.96 NTU	250.5 mV	204.52 cm	100.00 ml/min
5/6/2024 1:20 PM	09:00	6.59 pH	17.99 °C	2,155.1 µS/cm	3.97 mg/L	5.77 NTU	249.8 mV	204.52 cm	100.00 ml/min
5/6/2024 1:21 PM	10:00	6.61 pH	18.00 °C	2,155.1 µS/cm	4.57 mg/L	7.05 NTU	249.2 mV	204.52 cm	100.00 ml/min
5/6/2024 1:22 PM	11:00	6.63 pH	17.98 °C	2,157.7 µS/cm	5.13 mg/L	9.05 NTU	248.6 mV	204.52 cm	100.00 ml/min
5/6/2024 1:23 PM	12:00	6.65 pH	17.91 °C	2,159.8 µS/cm	5.57 mg/L	6.05 NTU	248.1 mV	204.52 cm	100.00 ml/min
5/6/2024 1:24 PM	13:00	6.67 pH	17.94 °C	2,161.2 µS/cm	5.98 mg/L	5.21 NTU	247.7 mV	204.52 cm	100.00 ml/min
5/6/2024 1:25 PM	14:00	6.69 pH	18.01 °C	2,160.2 µS/cm	6.33 mg/L	5.02 NTU	247.2 mV	204.52 cm	100.00 ml/min
5/6/2024 1:26 PM	15:00	6.70 pH	18.14 °C	2,162.2 µS/cm	6.62 mg/L	6.46 NTU	246.7 mV	204.52 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 5/6/2024 2:20:14 PM
Project: OW-219B
Operator Name:

Location Name: OW-219B
Initial Depth to Water: 5.41 ft

Estimated Total Volume Pumped: 1000 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
5/6/2024 2:20 PM	00:00	7.03 pH	22.32 °C	1,408.2 µS/cm	2.77 mg/L	10.67 NTU	243.5 mV	164.90 cm	100.00 ml/min
5/6/2024 2:21 PM	01:00	6.96 pH	20.67 °C	1,389.8 µS/cm	1.49 mg/L	6.98 NTU	248.6 mV	164.90 cm	100.00 ml/min
5/6/2024 2:22 PM	02:00	6.90 pH	19.60 °C	1,379.4 µS/cm	0.94 mg/L	7.26 NTU	252.2 mV	164.90 cm	100.00 ml/min
5/6/2024 2:23 PM	03:00	6.85 pH	19.04 °C	1,376.5 µS/cm	0.73 mg/L	8.47 NTU	255.1 mV	164.90 cm	100.00 ml/min
5/6/2024 2:24 PM	04:00	6.80 pH	18.79 °C	1,373.9 µS/cm	0.66 mg/L	7.94 NTU	257.4 mV	164.90 cm	100.00 ml/min
5/6/2024 2:25 PM	05:00	6.78 pH	18.70 °C	1,377.5 µS/cm	0.71 mg/L	8.80 NTU	258.7 mV	164.90 cm	100.00 ml/min
5/6/2024 2:26 PM	06:00	6.76 pH	18.56 °C	1,375.7 µS/cm	0.88 mg/L	7.07 NTU	259.6 mV	164.90 cm	100.00 ml/min
5/6/2024 2:27 PM	07:00	6.75 pH	18.49 °C	1,377.5 µS/cm	0.97 mg/L	7.10 NTU	259.9 mV	164.90 cm	100.00 ml/min
5/6/2024 2:28 PM	08:00	6.75 pH	18.49 °C	1,374.2 µS/cm	1.23 mg/L	5.55 NTU	259.9 mV	164.90 cm	100.00 ml/min
5/6/2024 2:29 PM	09:00	6.75 pH	18.49 °C	1,375.5 µS/cm	1.33 mg/L	4.15 NTU	260.1 mV	164.90 cm	100.00 ml/min
5/6/2024 2:30 PM	10:00	6.75 pH	18.48 °C	1,374.9 µS/cm	1.35 mg/L	3.31 NTU	259.8 mV	164.90 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 5/6/2024 3:30:57 PM
Project: OW-213BR
Operator Name:

Location Name: OW-213BR
Initial Depth to Water: 9.33 ft

Estimated Total Volume Pumped: 1000 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
5/6/2024 3:30 PM	00:00	6.90 pH	22.65 °C	1,401.8 µS/cm	3.56 mg/L	1.82 NTU	260.8 mV	284.38 cm	100.00 ml/min
5/6/2024 3:31 PM	01:00	6.77 pH	19.68 °C	1,413.4 µS/cm	1.68 mg/L	1.62 NTU	264.8 mV	284.38 cm	100.00 ml/min
5/6/2024 3:32 PM	02:00	6.68 pH	18.58 °C	1,416.4 µS/cm	0.90 mg/L	2.49 NTU	268.4 mV	284.38 cm	100.00 ml/min
5/6/2024 3:33 PM	03:00	6.59 pH	17.94 °C	1,409.4 µS/cm	0.60 mg/L	3.52 NTU	271.8 mV	284.38 cm	100.00 ml/min
5/6/2024 3:34 PM	04:00	6.55 pH	17.58 °C	1,411.5 µS/cm	0.61 mg/L	3.60 NTU	273.2 mV	284.38 cm	100.00 ml/min
5/6/2024 3:35 PM	05:00	6.53 pH	17.16 °C	1,411.7 µS/cm	0.82 mg/L	3.66 NTU	273.2 mV	284.38 cm	100.00 ml/min
5/6/2024 3:36 PM	06:00	6.53 pH	16.97 °C	1,408.7 µS/cm	1.12 mg/L	2.72 NTU	272.5 mV	284.38 cm	100.00 ml/min
5/6/2024 3:37 PM	07:00	6.52 pH	16.97 °C	1,408.6 µS/cm	1.20 mg/L	2.49 NTU	271.8 mV	284.38 cm	100.00 ml/min
5/6/2024 3:38 PM	08:00	6.52 pH	17.06 °C	1,409.3 µS/cm	1.15 mg/L	1.21 NTU	270.9 mV	284.38 cm	100.00 ml/min
5/6/2024 3:39 PM	09:00	6.52 pH	17.18 °C	1,409.7 µS/cm	0.99 mg/L	1.53 NTU	269.9 mV	284.38 cm	100.00 ml/min
5/6/2024 3:40 PM	10:00	6.52 pH	17.20 °C	1,409.2 µS/cm	0.82 mg/L	2.49 NTU	268.9 mV	284.38 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 5/7/2024 2:29:15 PM
Project: OW-105B
Operator Name:

Location Name: OW-105B
Initial Depth to Water: 15.24 ft

Estimated Total Volume Pumped: 1100 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
5/7/2024 2:29 PM	00:00	7.11 pH	23.30 °C	993.64 µS/cm	4.45 mg/L	1.07 NTU	221.1 mV	464.52 cm	100.00 ml/min
5/7/2024 2:30 PM	01:00	7.09 pH	20.55 °C	977.39 µS/cm	3.70 mg/L	2.01 NTU	225.6 mV	464.52 cm	100.00 ml/min
5/7/2024 2:31 PM	02:00	7.08 pH	19.45 °C	957.48 µS/cm	3.70 mg/L	1.63 NTU	229.2 mV	464.52 cm	100.00 ml/min
5/7/2024 2:32 PM	03:00	7.06 pH	18.64 °C	954.39 µS/cm	3.50 mg/L	2.68 NTU	232.2 mV	464.52 cm	100.00 ml/min
5/7/2024 2:33 PM	04:00	7.03 pH	18.31 °C	949.03 µS/cm	3.52 mg/L	3.76 NTU	234.9 mV	464.52 cm	100.00 ml/min
5/7/2024 2:34 PM	05:00	7.01 pH	18.59 °C	953.97 µS/cm	3.54 mg/L	4.55 NTU	237.0 mV	464.52 cm	100.00 ml/min
5/7/2024 2:35 PM	06:00	7.00 pH	18.87 °C	951.78 µS/cm	3.62 mg/L	8.18 NTU	238.0 mV	464.52 cm	100.00 ml/min
5/7/2024 2:36 PM	07:00	7.01 pH	19.19 °C	952.95 µS/cm	3.65 mg/L	11.20 NTU	238.4 mV	464.52 cm	100.00 ml/min
5/7/2024 2:37 PM	08:00	7.02 pH	19.70 °C	956.31 µS/cm	3.74 mg/L	5.32 NTU	238.0 mV	464.52 cm	100.00 ml/min
5/7/2024 2:38 PM	09:00	7.04 pH	20.03 °C	955.61 µS/cm	3.91 mg/L	2.92 NTU	237.4 mV	464.52 cm	100.00 ml/min
5/7/2024 2:39 PM	10:00	7.06 pH	20.22 °C	951.75 µS/cm	4.07 mg/L	2.89 NTU	236.8 mV	464.52 cm	100.00 ml/min
5/7/2024 2:40 PM	11:00	7.07 pH	20.36 °C	953.01 µS/cm	4.09 mg/L	4.15 NTU	236.7 mV	464.52 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 5/7/2024 2:29:15 PM
Project: OW-105B
Operator Name:

Location Name: OW-105B
Initial Depth to Water: 15.24 ft

Estimated Total Volume Pumped: 1100 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
5/7/2024 2:29 PM	00:00	7.11 pH	23.30 °C	993.64 µS/cm	4.45 mg/L	1.07 NTU	221.1 mV	464.52 cm	100.00 ml/min
5/7/2024 2:30 PM	01:00	7.09 pH	20.55 °C	977.39 µS/cm	3.70 mg/L	2.01 NTU	225.6 mV	464.52 cm	100.00 ml/min
5/7/2024 2:31 PM	02:00	7.08 pH	19.45 °C	957.48 µS/cm	3.70 mg/L	1.63 NTU	229.2 mV	464.52 cm	100.00 ml/min
5/7/2024 2:32 PM	03:00	7.06 pH	18.64 °C	954.39 µS/cm	3.50 mg/L	2.68 NTU	232.2 mV	464.52 cm	100.00 ml/min
5/7/2024 2:33 PM	04:00	7.03 pH	18.31 °C	949.03 µS/cm	3.52 mg/L	3.76 NTU	234.9 mV	464.52 cm	100.00 ml/min
5/7/2024 2:34 PM	05:00	7.01 pH	18.59 °C	953.97 µS/cm	3.54 mg/L	4.55 NTU	237.0 mV	464.52 cm	100.00 ml/min
5/7/2024 2:35 PM	06:00	7.00 pH	18.87 °C	951.78 µS/cm	3.62 mg/L	8.18 NTU	238.0 mV	464.52 cm	100.00 ml/min
5/7/2024 2:36 PM	07:00	7.01 pH	19.19 °C	952.95 µS/cm	3.65 mg/L	11.20 NTU	238.4 mV	464.52 cm	100.00 ml/min
5/7/2024 2:37 PM	08:00	7.02 pH	19.70 °C	956.31 µS/cm	3.74 mg/L	5.32 NTU	238.0 mV	464.52 cm	100.00 ml/min
5/7/2024 2:38 PM	09:00	7.04 pH	20.03 °C	955.61 µS/cm	3.91 mg/L	2.92 NTU	237.4 mV	464.52 cm	100.00 ml/min
5/7/2024 2:39 PM	10:00	7.06 pH	20.22 °C	951.75 µS/cm	4.07 mg/L	2.89 NTU	236.8 mV	464.52 cm	100.00 ml/min
5/7/2024 2:40 PM	11:00	7.07 pH	20.36 °C	953.01 µS/cm	4.09 mg/L	4.15 NTU	236.7 mV	464.52 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 5/8/2024 9:51:45 AM
Project: OW-101B
Operator Name:

Location Name: OW-101B
Initial Depth to Water: 6.79 ft

Estimated Total Volume Pumped: 1000 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
5/8/2024 9:51 AM	00:00	7.32 pH	16.51 °C	601.10 µS/cm	4.87 mg/L	5.41 NTU	178.6 mV	206.96 cm	100.00 ml/min
5/8/2024 9:52 AM	01:00	7.31 pH	15.36 °C	597.14 µS/cm	2.66 mg/L	6.53 NTU	181.7 mV	206.96 cm	100.00 ml/min
5/8/2024 9:53 AM	02:00	7.28 pH	14.83 °C	593.63 µS/cm	1.76 mg/L	3.87 NTU	184.4 mV	206.96 cm	100.00 ml/min
5/8/2024 9:54 AM	03:00	7.26 pH	14.47 °C	589.59 µS/cm	1.41 mg/L	2.83 NTU	187.2 mV	206.96 cm	100.00 ml/min
5/8/2024 9:55 AM	04:00	7.24 pH	14.18 °C	591.90 µS/cm	1.25 mg/L	2.77 NTU	188.8 mV	206.96 cm	100.00 ml/min
5/8/2024 9:56 AM	05:00	7.23 pH	14.04 °C	591.72 µS/cm	1.20 mg/L	2.39 NTU	190.4 mV	206.96 cm	100.00 ml/min
5/8/2024 9:57 AM	06:00	7.23 pH	13.89 °C	592.01 µS/cm	1.27 mg/L	1.77 NTU	191.5 mV	206.96 cm	100.00 ml/min
5/8/2024 9:58 AM	07:00	7.23 pH	13.74 °C	591.76 µS/cm	1.48 mg/L	1.61 NTU	192.4 mV	206.96 cm	100.00 ml/min
5/8/2024 9:59 AM	08:00	7.23 pH	13.67 °C	591.46 µS/cm	1.79 mg/L	1.99 NTU	193.0 mV	206.96 cm	100.00 ml/min
5/8/2024 10:00 AM	09:00	7.24 pH	13.63 °C	591.38 µS/cm	2.12 mg/L	2.97 NTU	193.6 mV	206.96 cm	100.00 ml/min
5/8/2024 10:01 AM	10:00	7.24 pH	13.62 °C	591.20 µS/cm	2.32 mg/L	3.50 NTU	194.1 mV	206.96 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 5/8/2024 10:43:21 AM
Project: OW-319B
Operator Name:

Location Name: OW-319B
Initial Depth to Water: 7.21 ft

Estimated Total Volume Pumped: 1000 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
5/8/2024 10:43 AM	00:00	7.45 pH	17.15 °C	610.77 µS/cm	8.57 mg/L	2.21 NTU	200.6 mV	219.76 cm	100.00 ml/min
5/8/2024 10:44 AM	01:00	7.45 pH	16.05 °C	612.21 µS/cm	8.48 mg/L	1.39 NTU	203.8 mV	219.76 cm	100.00 ml/min
5/8/2024 10:45 AM	02:00	7.42 pH	15.53 °C	611.64 µS/cm	8.47 mg/L	1.83 NTU	206.1 mV	219.76 cm	100.00 ml/min
5/8/2024 10:46 AM	03:00	7.40 pH	15.21 °C	610.33 µS/cm	8.46 mg/L	2.16 NTU	207.8 mV	219.76 cm	100.00 ml/min
5/8/2024 10:47 AM	04:00	7.38 pH	15.06 °C	609.48 µS/cm	8.46 mg/L	2.65 NTU	209.0 mV	219.76 cm	100.00 ml/min
5/8/2024 10:48 AM	05:00	7.37 pH	14.85 °C	609.89 µS/cm	8.46 mg/L	2.96 NTU	209.7 mV	219.76 cm	100.00 ml/min
5/8/2024 10:49 AM	06:00	7.37 pH	14.65 °C	610.05 µS/cm	8.54 mg/L	4.36 NTU	210.1 mV	219.76 cm	100.00 ml/min
5/8/2024 10:50 AM	07:00	7.37 pH	14.45 °C	610.22 µS/cm	8.69 mg/L	5.89 NTU	210.3 mV	219.76 cm	100.00 ml/min
5/8/2024 10:51 AM	08:00	7.38 pH	14.36 °C	609.46 µS/cm	8.84 mg/L	6.93 NTU	210.3 mV	219.76 cm	100.00 ml/min
5/8/2024 10:52 AM	09:00	7.38 pH	14.38 °C	608.66 µS/cm	9.02 mg/L	6.29 NTU	210.2 mV	219.76 cm	100.00 ml/min
5/8/2024 10:53 AM	10:00	7.40 pH	14.40 °C	607.72 µS/cm	9.19 mg/L	6.36 NTU	209.8 mV	219.76 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 5/8/2024 11:31:50 AM
Project: OW-414B
Operator Name:

Location Name: OW-414B
Initial Depth to Water: 23.29 ft

Estimated Total Volume Pumped: 1000 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
5/8/2024 11:31 AM	00:00	6.41 pH	23.88 °C	2,807.6 µS/cm	1.98 mg/L	3.85 NTU	202.2 mV	709.88 cm	100.00 ml/min
5/8/2024 11:32 AM	01:00	6.39 pH	22.70 °C	2,864.7 µS/cm	1.20 mg/L	3.78 NTU	178.5 mV	709.88 cm	100.00 ml/min
5/8/2024 11:33 AM	02:00	6.38 pH	21.86 °C	2,876.0 µS/cm	0.84 mg/L	3.50 NTU	159.0 mV	709.88 cm	100.00 ml/min
5/8/2024 11:34 AM	03:00	6.38 pH	21.35 °C	2,877.1 µS/cm	0.67 mg/L	4.13 NTU	142.4 mV	709.88 cm	100.00 ml/min
5/8/2024 11:35 AM	04:00	6.37 pH	20.91 °C	2,867.9 µS/cm	0.59 mg/L	2.70 NTU	127.9 mV	709.88 cm	100.00 ml/min
5/8/2024 11:36 AM	05:00	6.37 pH	20.67 °C	2,859.4 µS/cm	0.54 mg/L	2.45 NTU	114.7 mV	709.88 cm	100.00 ml/min
5/8/2024 11:37 AM	06:00	6.37 pH	20.52 °C	2,850.2 µS/cm	0.49 mg/L	2.01 NTU	102.4 mV	709.88 cm	100.00 ml/min
5/8/2024 11:38 AM	07:00	6.37 pH	20.23 °C	2,825.1 µS/cm	0.46 mg/L	1.74 NTU	91.3 mV	709.88 cm	100.00 ml/min
5/8/2024 11:39 AM	08:00	6.36 pH	20.16 °C	2,821.0 µS/cm	0.44 mg/L	1.15 NTU	81.0 mV	709.88 cm	100.00 ml/min
5/8/2024 11:40 AM	09:00	6.36 pH	20.23 °C	2,819.0 µS/cm	0.42 mg/L	1.11 NTU	71.7 mV	709.88 cm	100.00 ml/min
5/8/2024 11:41 AM	10:00	6.36 pH	20.13 °C	2,804.6 µS/cm	0.43 mg/L	1.01 NTU	63.4 mV	709.88 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 5/14/2024 9:55:50 AM
Project: OW-401B
Operator Name:

Location Name: OW-401B
Initial Depth to Water: 14.67 ft

Estimated Total Volume Pumped: 1000 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
5/14/2024 9:55 AM	00:00	6.50 pH	16.21 °C	4,313.5 µS/cm	1.46 mg/L	1.24 NTU	153.0 mV	447.14 cm	100.00 ml/min
5/14/2024 9:56 AM	01:00	6.51 pH	15.97 °C	4,320.3 µS/cm	1.00 mg/L	1.27 NTU	128.9 mV	447.14 cm	100.00 ml/min
5/14/2024 9:57 AM	02:00	6.51 pH	15.59 °C	4,307.4 µS/cm	0.79 mg/L	1.18 NTU	112.1 mV	447.14 cm	100.00 ml/min
5/14/2024 9:58 AM	03:00	6.51 pH	15.40 °C	4,294.4 µS/cm	0.66 mg/L	3.86 NTU	99.9 mV	447.14 cm	100.00 ml/min
5/14/2024 9:59 AM	04:00	6.51 pH	15.17 °C	4,292.9 µS/cm	0.59 mg/L	1.01 NTU	91.0 mV	447.14 cm	100.00 ml/min
5/14/2024 10:00 AM	05:00	6.50 pH	15.09 °C	4,292.0 µS/cm	0.57 mg/L	1.42 NTU	84.6 mV	447.14 cm	100.00 ml/min
5/14/2024 10:01 AM	06:00	6.50 pH	15.04 °C	4,305.8 µS/cm	0.54 mg/L	1.62 NTU	79.4 mV	447.14 cm	100.00 ml/min
5/14/2024 10:02 AM	07:00	6.50 pH	15.00 °C	4,303.3 µS/cm	0.54 mg/L	1.76 NTU	75.3 mV	447.14 cm	100.00 ml/min
5/14/2024 10:03 AM	08:00	6.51 pH	14.94 °C	4,289.1 µS/cm	0.66 mg/L	2.15 NTU	72.3 mV	447.14 cm	100.00 ml/min
5/14/2024 10:04 AM	09:00	6.52 pH	14.93 °C	4,297.6 µS/cm	0.94 mg/L	2.41 NTU	70.1 mV	447.14 cm	100.00 ml/min
5/14/2024 10:05 AM	10:00	6.53 pH	14.95 °C	4,302.5 µS/cm	1.31 mg/L	3.37 NTU	68.9 mV	447.14 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 5/14/2024 9:55:50 AM
Project: OW-401B
Operator Name:

Location Name: OW-401B
Initial Depth to Water: 14.67 ft

Estimated Total Volume Pumped: 1000 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
5/14/2024 9:55 AM	00:00	6.50 pH	16.21 °C	4,313.5 µS/cm	1.46 mg/L	1.24 NTU	153.0 mV	447.14 cm	100.00 ml/min
5/14/2024 9:56 AM	01:00	6.51 pH	15.97 °C	4,320.3 µS/cm	1.00 mg/L	1.27 NTU	128.9 mV	447.14 cm	100.00 ml/min
5/14/2024 9:57 AM	02:00	6.51 pH	15.59 °C	4,307.4 µS/cm	0.79 mg/L	1.18 NTU	112.1 mV	447.14 cm	100.00 ml/min
5/14/2024 9:58 AM	03:00	6.51 pH	15.40 °C	4,294.4 µS/cm	0.66 mg/L	3.86 NTU	99.9 mV	447.14 cm	100.00 ml/min
5/14/2024 9:59 AM	04:00	6.51 pH	15.17 °C	4,292.9 µS/cm	0.59 mg/L	1.01 NTU	91.0 mV	447.14 cm	100.00 ml/min
5/14/2024 10:00 AM	05:00	6.50 pH	15.09 °C	4,292.0 µS/cm	0.57 mg/L	1.42 NTU	84.6 mV	447.14 cm	100.00 ml/min
5/14/2024 10:01 AM	06:00	6.50 pH	15.04 °C	4,305.8 µS/cm	0.54 mg/L	1.62 NTU	79.4 mV	447.14 cm	100.00 ml/min
5/14/2024 10:02 AM	07:00	6.50 pH	15.00 °C	4,303.3 µS/cm	0.54 mg/L	1.76 NTU	75.3 mV	447.14 cm	100.00 ml/min
5/14/2024 10:03 AM	08:00	6.51 pH	14.94 °C	4,289.1 µS/cm	0.66 mg/L	2.15 NTU	72.3 mV	447.14 cm	100.00 ml/min
5/14/2024 10:04 AM	09:00	6.52 pH	14.93 °C	4,297.6 µS/cm	0.94 mg/L	2.41 NTU	70.1 mV	447.14 cm	100.00 ml/min
5/14/2024 10:05 AM	10:00	6.53 pH	14.95 °C	4,302.5 µS/cm	1.31 mg/L	3.37 NTU	68.9 mV	447.14 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 5/14/2024 11:12:57 AM
Project: OW-114B
Operator Name:

Location Name: OW-114B
Initial Depth to Water: 5.51 ft

Estimated Total Volume Pumped: 1000 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
5/14/2024 11:12 AM	00:00	7.03 pH	17.25 °C	1,706.5 µS/cm	2.49 mg/L	22.69 NTU	-4.3 mV	167.94 cm	100.00 ml/min
5/14/2024 11:13 AM	01:00	6.92 pH	15.92 °C	1,663.6 µS/cm	1.26 mg/L	24.47 NTU	9.1 mV	167.94 cm	100.00 ml/min
5/14/2024 11:14 AM	02:00	6.87 pH	15.39 °C	1,646.9 µS/cm	0.78 mg/L	18.19 NTU	15.5 mV	167.94 cm	100.00 ml/min
5/14/2024 11:15 AM	03:00	6.83 pH	15.17 °C	1,642.9 µS/cm	0.54 mg/L	15.70 NTU	19.6 mV	167.94 cm	100.00 ml/min
5/14/2024 11:16 AM	04:00	6.81 pH	15.04 °C	1,635.6 µS/cm	0.46 mg/L	16.30 NTU	22.4 mV	167.94 cm	100.00 ml/min
5/14/2024 11:17 AM	05:00	6.78 pH	14.95 °C	1,616.8 µS/cm	0.52 mg/L	14.71 NTU	25.3 mV	167.94 cm	100.00 ml/min
5/14/2024 11:18 AM	06:00	6.77 pH	14.76 °C	1,613.7 µS/cm	0.69 mg/L	14.11 NTU	27.7 mV	167.94 cm	100.00 ml/min
5/14/2024 11:19 AM	07:00	6.76 pH	14.74 °C	1,609.1 µS/cm	1.03 mg/L	16.28 NTU	30.0 mV	167.94 cm	100.00 ml/min
5/14/2024 11:20 AM	08:00	6.75 pH	14.71 °C	1,604.1 µS/cm	1.52 mg/L	21.83 NTU	33.1 mV	167.94 cm	100.00 ml/min
5/14/2024 11:21 AM	09:00	6.76 pH	14.66 °C	1,594.4 µS/cm	2.18 mg/L	17.45 NTU	36.0 mV	167.94 cm	100.00 ml/min
5/14/2024 11:22 AM	10:00	6.77 pH	14.64 °C	1,593.6 µS/cm	2.83 mg/L	19.11 NTU	39.4 mV	167.94 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 5/14/2024 12:35:55 PM
Project: OW-216BR
Operator Name:

Location Name: OW-216BR
Initial Depth to Water: 5.48 ft

Estimated Total Volume Pumped: 1000 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
5/14/2024 12:35 PM	00:00	7.50 pH	18.68 °C	769.43 µS/cm	4.00 mg/L	2.39 NTU	101.5 mV	167.03 cm	100.00 ml/min
5/14/2024 12:36 PM	01:00	7.44 pH	17.22 °C	617.30 µS/cm	2.96 mg/L	1.87 NTU	104.9 mV	167.03 cm	100.00 ml/min
5/14/2024 12:37 PM	02:00	7.39 pH	16.63 °C	608.43 µS/cm	2.40 mg/L	4.58 NTU	106.5 mV	167.03 cm	100.00 ml/min
5/14/2024 12:38 PM	03:00	7.36 pH	16.38 °C	604.15 µS/cm	2.18 mg/L	4.12 NTU	107.6 mV	167.03 cm	100.00 ml/min
5/14/2024 12:39 PM	04:00	7.33 pH	16.29 °C	601.86 µS/cm	2.15 mg/L	4.93 NTU	108.6 mV	167.03 cm	100.00 ml/min
5/14/2024 12:40 PM	05:00	7.30 pH	16.14 °C	602.28 µS/cm	2.22 mg/L	12.49 NTU	109.8 mV	167.03 cm	100.00 ml/min
5/14/2024 12:41 PM	06:00	7.28 pH	16.13 °C	600.39 µS/cm	2.35 mg/L	7.56 NTU	110.9 mV	167.03 cm	100.00 ml/min
5/14/2024 12:42 PM	07:00	7.26 pH	16.10 °C	600.34 µS/cm	2.59 mg/L	2.48 NTU	112.3 mV	167.03 cm	100.00 ml/min
5/14/2024 12:43 PM	08:00	7.24 pH	16.07 °C	599.91 µS/cm	2.91 mg/L	2.64 NTU	113.7 mV	167.03 cm	100.00 ml/min
5/14/2024 12:44 PM	09:00	7.24 pH	15.91 °C	735.59 µS/cm	3.41 mg/L	3.49 NTU	115.4 mV	167.03 cm	100.00 ml/min
5/14/2024 12:45 PM	10:00	7.24 pH	15.83 °C	733.53 µS/cm	4.03 mg/L	3.71 NTU	116.9 mV	167.03 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 5/14/2024 1:40:46 PM
Project: MW-603B
Operator Name:

Location Name: MW-603B
Initial Depth to Water: 10.28 ft

Estimated Total Volume Pumped: 1100 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
5/14/2024 1:40 PM	00:00	8.12 pH	18.64 °C	849.08 µS/cm	2.20 mg/L	2.22 NTU	103.1 mV	313.33 cm	100.00 ml/min
5/14/2024 1:41 PM	01:00	8.17 pH	17.77 °C	851.53 µS/cm	1.27 mg/L	2.09 NTU	89.5 mV	313.33 cm	100.00 ml/min
5/14/2024 1:42 PM	02:00	8.17 pH	17.50 °C	850.64 µS/cm	0.84 mg/L	1.84 NTU	78.8 mV	313.33 cm	100.00 ml/min
5/14/2024 1:43 PM	03:00	8.16 pH	17.37 °C	850.33 µS/cm	0.60 mg/L	2.30 NTU	69.9 mV	313.33 cm	100.00 ml/min
5/14/2024 1:44 PM	04:00	8.14 pH	17.47 °C	849.94 µS/cm	0.51 mg/L	2.60 NTU	63.0 mV	313.33 cm	100.00 ml/min
5/14/2024 1:45 PM	05:00	8.12 pH	17.46 °C	851.32 µS/cm	0.55 mg/L	2.55 NTU	57.0 mV	313.33 cm	100.00 ml/min
5/14/2024 1:46 PM	06:00	8.10 pH	17.54 °C	849.85 µS/cm	0.70 mg/L	1.88 NTU	52.6 mV	313.33 cm	100.00 ml/min
5/14/2024 1:47 PM	07:00	8.08 pH	17.54 °C	854.75 µS/cm	0.89 mg/L	1.82 NTU	49.0 mV	313.33 cm	100.00 ml/min
5/14/2024 1:48 PM	08:00	8.06 pH	17.56 °C	854.80 µS/cm	1.09 mg/L	2.04 NTU	46.3 mV	313.33 cm	100.00 ml/min
5/14/2024 1:49 PM	09:00	8.05 pH	17.60 °C	854.89 µS/cm	1.25 mg/L	2.15 NTU	44.2 mV	313.33 cm	100.00 ml/min
5/14/2024 1:50 PM	10:00	8.03 pH	17.66 °C	854.86 µS/cm	1.51 mg/L	1.56 NTU	42.6 mV	313.33 cm	100.00 ml/min
5/14/2024 1:51 PM	11:00	8.02 pH	17.75 °C	855.20 µS/cm	1.74 mg/L	1.86 NTU	41.7 mV	313.33 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 5/15/2024 10:25:04 AM
Project: OW-411B
Operator Name:

Location Name: OW-411B

Estimated Total Volume Pumped: 1000 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
5/15/2024 10:25 AM	00:00	6.51 pH	19.45 °C	3,336.0 µS/cm	3.22 mg/L	1.60 NTU	201.2 mV		100.00 ml/min
5/15/2024 10:26 AM	01:00	6.49 pH	19.42 °C	3,369.4 µS/cm	2.28 mg/L	1.23 NTU	177.5 mV		100.00 ml/min
5/15/2024 10:27 AM	02:00	6.47 pH	19.34 °C	3,390.0 µS/cm	1.80 mg/L	1.08 NTU	159.2 mV		100.00 ml/min
5/15/2024 10:28 AM	03:00	6.47 pH	19.31 °C	3,395.9 µS/cm	1.59 mg/L	1.06 NTU	144.6 mV		100.00 ml/min
5/15/2024 10:29 AM	04:00	6.47 pH	19.29 °C	3,398.0 µS/cm	1.56 mg/L	0.94 NTU	132.8 mV		100.00 ml/min
5/15/2024 10:30 AM	05:00	6.47 pH	19.24 °C	3,399.0 µS/cm	1.52 mg/L	0.77 NTU	123.2 mV		100.00 ml/min
5/15/2024 10:31 AM	06:00	6.47 pH	19.23 °C	3,396.1 µS/cm	1.44 mg/L	0.77 NTU	115.4 mV		100.00 ml/min
5/15/2024 10:32 AM	07:00	6.47 pH	19.23 °C	3,394.6 µS/cm	1.39 mg/L	0.75 NTU	109.3 mV		100.00 ml/min
5/15/2024 10:33 AM	08:00	6.47 pH	19.24 °C	3,393.0 µS/cm	1.36 mg/L	0.78 NTU	104.2 mV		100.00 ml/min
5/15/2024 10:34 AM	09:00	6.47 pH	19.28 °C	3,390.7 µS/cm	1.38 mg/L	0.73 NTU	100.2 mV		100.00 ml/min
5/15/2024 10:35 AM	10:00	6.47 pH	19.45 °C	3,390.3 µS/cm	1.40 mg/L	0.77 NTU	97.0 mV		100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 5/15/2024 12:25:42 PM
Project: OW-413B
Operator Name:

Location Name: OW-413B
Initial Depth to Water: 10.07 ft

Estimated Total Volume Pumped: 1000 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
5/15/2024 12:25 PM	00:00	6.52 pH	24.42 °C	1,704.5 µS/cm	2.16 mg/L	11.23 NTU	103.0 mV	306.93 cm	100.00 ml/min
5/15/2024 12:26 PM	01:00	6.49 pH	22.90 °C	1,674.7 µS/cm	1.28 mg/L	6.08 NTU	99.2 mV	306.93 cm	100.00 ml/min
5/15/2024 12:27 PM	02:00	6.48 pH	21.73 °C	1,675.8 µS/cm	0.93 mg/L	9.63 NTU	95.8 mV	306.93 cm	100.00 ml/min
5/15/2024 12:28 PM	03:00	6.47 pH	21.00 °C	1,669.9 µS/cm	0.97 mg/L	13.60 NTU	93.2 mV	306.93 cm	100.00 ml/min
5/15/2024 12:29 PM	04:00	6.47 pH	20.32 °C	1,678.2 µS/cm	1.04 mg/L	20.27 NTU	91.2 mV	306.93 cm	100.00 ml/min
5/15/2024 12:30 PM	05:00	6.46 pH	20.27 °C	1,671.9 µS/cm	1.04 mg/L	25.18 NTU	89.4 mV	306.93 cm	100.00 ml/min
5/15/2024 12:31 PM	06:00	6.45 pH	20.37 °C	1,673.8 µS/cm	1.09 mg/L	35.10 NTU	87.5 mV	306.93 cm	100.00 ml/min
5/15/2024 12:32 PM	07:00	6.43 pH	20.16 °C	1,670.3 µS/cm	1.21 mg/L	41.44 NTU	86.6 mV	306.93 cm	100.00 ml/min
5/15/2024 12:33 PM	08:00	6.42 pH	20.11 °C	1,668.9 µS/cm	1.18 mg/L	42.66 NTU	85.7 mV	306.93 cm	100.00 ml/min
5/15/2024 12:34 PM	09:00	6.42 pH	19.95 °C	1,668.1 µS/cm	1.48 mg/L	63.39 NTU	84.0 mV	306.93 cm	100.00 ml/min
5/15/2024 12:35 PM	10:00	6.42 pH	19.98 °C	1,668.7 µS/cm	2.04 mg/L	81.81 NTU	83.5 mV	306.93 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 5/15/2024 1:07:53 PM
Project: OW-402B
Operator Name:

Location Name: OW-402B
Initial Depth to Water: 15.49 ft

Estimated Total Volume Pumped: 1000 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
5/15/2024 1:07 PM	00:00	6.73 pH	23.45 °C	1,542.6 µS/cm	1.97 mg/L	4.95 NTU	46.6 mV	472.14 cm	100.00 ml/min
5/15/2024 1:08 PM	01:00	6.70 pH	21.36 °C	1,536.8 µS/cm	1.08 mg/L	2.75 NTU	50.5 mV	472.14 cm	100.00 ml/min
5/15/2024 1:09 PM	02:00	6.68 pH	19.85 °C	1,531.6 µS/cm	0.72 mg/L	1.88 NTU	53.1 mV	472.14 cm	100.00 ml/min
5/15/2024 1:10 PM	03:00	6.65 pH	19.09 °C	1,523.8 µS/cm	0.57 mg/L	1.40 NTU	55.6 mV	472.14 cm	100.00 ml/min
5/15/2024 1:11 PM	04:00	6.60 pH	18.70 °C	1,521.6 µS/cm	0.49 mg/L	1.35 NTU	58.6 mV	472.14 cm	100.00 ml/min
5/15/2024 1:12 PM	05:00	6.56 pH	18.29 °C	1,526.1 µS/cm	0.43 mg/L	1.51 NTU	61.8 mV	472.14 cm	100.00 ml/min
5/15/2024 1:13 PM	06:00	6.51 pH	18.20 °C	1,538.2 µS/cm	0.38 mg/L	1.07 NTU	64.4 mV	472.14 cm	100.00 ml/min
5/15/2024 1:14 PM	07:00	6.48 pH	18.23 °C	1,541.6 µS/cm	0.34 mg/L	1.09 NTU	66.4 mV	472.14 cm	100.00 ml/min
5/15/2024 1:15 PM	08:00	6.46 pH	18.26 °C	1,542.0 µS/cm	0.32 mg/L	1.01 NTU	67.8 mV	472.14 cm	100.00 ml/min
5/15/2024 1:16 PM	09:00	6.45 pH	18.17 °C	1,540.9 µS/cm	0.30 mg/L	0.84 NTU	69.0 mV	472.14 cm	100.00 ml/min
5/15/2024 1:17 PM	10:00	6.44 pH	18.00 °C	1,541.5 µS/cm	0.29 mg/L	0.82 NTU	69.9 mV	472.14 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 5/16/2024 11:17:53 AM
Project: OW-410B
Operator Name:

Location Name: OW-410B
Initial Depth to Water: 13.18 ft

Estimated Total Volume Pumped: 1000 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
5/16/2024 11:17 AM	00:00	6.64 pH	21.19 °C	4,647.8 µS/cm	2.26 mg/L	28.63 NTU	233.5 mV	401.73 cm	100.00 ml/min
5/16/2024 11:18 AM	01:00	6.64 pH	19.77 °C	4,702.0 µS/cm	1.27 mg/L	28.40 NTU	229.3 mV	401.73 cm	100.00 ml/min
5/16/2024 11:19 AM	02:00	6.64 pH	18.70 °C	4,746.8 µS/cm	0.97 mg/L	59.74 NTU	225.9 mV	401.73 cm	100.00 ml/min
5/16/2024 11:20 AM	03:00	6.64 pH	18.26 °C	4,744.0 µS/cm	0.91 mg/L	71.76 NTU	222.4 mV	401.73 cm	100.00 ml/min
5/16/2024 11:21 AM	04:00	6.64 pH	17.82 °C	4,736.2 µS/cm	1.01 mg/L	93.33 NTU	219.3 mV	401.73 cm	100.00 ml/min
5/16/2024 11:22 AM	05:00	6.65 pH	17.27 °C	4,700.9 µS/cm	1.20 mg/L	111.50 NTU	216.2 mV	401.73 cm	100.00 ml/min
5/16/2024 11:23 AM	06:00	6.64 pH	17.09 °C	4,719.9 µS/cm	1.31 mg/L	125.22 NTU	213.3 mV	401.73 cm	100.00 ml/min
5/16/2024 11:24 AM	07:00	6.64 pH	17.01 °C	4,737.3 µS/cm	1.51 mg/L	131.50 NTU	210.4 mV	401.73 cm	100.00 ml/min
5/16/2024 11:25 AM	08:00	6.63 pH	17.28 °C	4,744.2 µS/cm	1.77 mg/L	143.68 NTU	207.2 mV	401.73 cm	100.00 ml/min
5/16/2024 11:26 AM	09:00	6.62 pH	17.96 °C	4,752.0 µS/cm	2.01 mg/L	155.13 NTU	203.6 mV	401.73 cm	100.00 ml/min
5/16/2024 11:27 AM	10:00	6.63 pH	18.56 °C	4,750.4 µS/cm	2.52 mg/L	182.75 NTU	199.7 mV	401.73 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 5/16/2024 12:07:20 PM
Project: OW-409B
Operator Name:

Location Name: OW-409B
Initial Depth to Water: 20.19 ft

Estimated Total Volume Pumped: 1100 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
5/16/2024 12:07 PM	00:00	6.95 pH	21.54 °C	2,234.4 µS/cm	2.58 mg/L	13.64 NTU	37.3 mV	615.39 cm	100.00 ml/min
5/16/2024 12:08 PM	01:00	6.87 pH	20.07 °C	2,112.4 µS/cm	1.50 mg/L	9.65 NTU	39.0 mV	615.39 cm	100.00 ml/min
5/16/2024 12:09 PM	02:00	6.83 pH	19.36 °C	2,067.9 µS/cm	1.02 mg/L	4.09 NTU	38.8 mV	615.39 cm	100.00 ml/min
5/16/2024 12:10 PM	03:00	6.81 pH	18.93 °C	2,036.2 µS/cm	0.78 mg/L	5.63 NTU	37.9 mV	615.39 cm	100.00 ml/min
5/16/2024 12:11 PM	04:00	6.79 pH	18.65 °C	2,023.3 µS/cm	0.67 mg/L	3.87 NTU	36.9 mV	615.39 cm	100.00 ml/min
5/16/2024 12:12 PM	05:00	6.76 pH	18.79 °C	2,011.6 µS/cm	0.59 mg/L	4.36 NTU	35.9 mV	615.39 cm	100.00 ml/min
5/16/2024 12:13 PM	06:00	6.75 pH	18.85 °C	1,996.0 µS/cm	0.56 mg/L	7.38 NTU	35.1 mV	615.39 cm	100.00 ml/min
5/16/2024 12:14 PM	07:00	6.74 pH	18.89 °C	1,973.9 µS/cm	1.01 mg/L	10.51 NTU	34.8 mV	615.39 cm	100.00 ml/min
5/16/2024 12:15 PM	08:00	6.73 pH	19.01 °C	1,959.6 µS/cm	1.62 mg/L	20.77 NTU	35.3 mV	615.39 cm	100.00 ml/min
5/16/2024 12:16 PM	09:00	6.73 pH	19.01 °C	1,951.1 µS/cm	2.05 mg/L	13.45 NTU	36.3 mV	615.39 cm	100.00 ml/min
5/16/2024 12:17 PM	10:00	6.73 pH	18.91 °C	1,945.0 µS/cm	2.42 mg/L	19.60 NTU	37.2 mV	615.39 cm	100.00 ml/min
5/16/2024 12:18 PM	11:00	6.74 pH	18.75 °C	1,939.2 µS/cm	2.67 mg/L	18.42 NTU	37.8 mV	615.39 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 5/16/2024 12:53:54 PM
Project: OW-220B
Operator Name:

Location Name: OW-220B
Initial Depth to Water: 13.54 ft

Estimated Total Volume Pumped: 1000 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
5/16/2024 12:53 PM	00:00	6.58 pH	19.81 °C	6,072.6 µS/cm	1.04 mg/L	7.23 NTU	51.1 mV	412.70 cm	100.00 ml/min
5/16/2024 12:54 PM	01:00	6.58 pH	18.77 °C	6,081.4 µS/cm	0.56 mg/L	7.04 NTU	45.6 mV	412.70 cm	100.00 ml/min
5/16/2024 12:55 PM	02:00	6.58 pH	18.02 °C	6,100.1 µS/cm	0.37 mg/L	7.05 NTU	41.5 mV	412.70 cm	100.00 ml/min
5/16/2024 12:56 PM	03:00	6.58 pH	17.13 °C	6,086.7 µS/cm	0.29 mg/L	6.63 NTU	38.3 mV	412.70 cm	100.00 ml/min
5/16/2024 12:57 PM	04:00	6.57 pH	16.60 °C	6,083.4 µS/cm	0.26 mg/L	6.43 NTU	35.9 mV	412.70 cm	100.00 ml/min
5/16/2024 12:58 PM	05:00	6.55 pH	16.74 °C	6,079.0 µS/cm	0.23 mg/L	6.20 NTU	33.5 mV	412.70 cm	100.00 ml/min
5/16/2024 12:59 PM	06:00	6.54 pH	17.01 °C	6,090.7 µS/cm	0.20 mg/L	7.01 NTU	31.3 mV	412.70 cm	100.00 ml/min
5/16/2024 1:00 PM	07:00	6.52 pH	17.37 °C	6,088.0 µS/cm	0.19 mg/L	5.84 NTU	29.1 mV	412.70 cm	100.00 ml/min
5/16/2024 1:01 PM	08:00	6.51 pH	17.81 °C	6,097.5 µS/cm	0.20 mg/L	6.05 NTU	27.1 mV	412.70 cm	100.00 ml/min
5/16/2024 1:02 PM	09:00	6.50 pH	17.60 °C	6,108.5 µS/cm	0.18 mg/L	4.72 NTU	25.7 mV	412.70 cm	100.00 ml/min
5/16/2024 1:03 PM	10:00	6.49 pH	17.42 °C	6,096.4 µS/cm	0.17 mg/L	4.72 NTU	24.0 mV	412.70 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 5/16/2024 2:00:46 PM
Project: MW-320B
Operator Name:

Location Name: MW-320B
Initial Depth to Water: 5.58 ft

Estimated Total Volume Pumped: 1100 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
5/16/2024 2:00 PM	00:00	7.61 pH	25.35 °C	929.81 µS/cm	2.85 mg/L	12.49 NTU	-25.7 mV	170.08 cm	100.00 ml/min
5/16/2024 2:01 PM	01:00	7.35 pH	22.79 °C	837.53 µS/cm	1.63 mg/L	11.13 NTU	-1.2 mV	170.08 cm	100.00 ml/min
5/16/2024 2:02 PM	02:00	7.23 pH	21.53 °C	792.42 µS/cm	1.11 mg/L	13.01 NTU	9.8 mV	170.08 cm	100.00 ml/min
5/16/2024 2:03 PM	03:00	7.14 pH	21.34 °C	781.01 µS/cm	0.86 mg/L	11.53 NTU	19.4 mV	170.08 cm	100.00 ml/min
5/16/2024 2:04 PM	04:00	7.05 pH	21.16 °C	776.66 µS/cm	0.78 mg/L	14.40 NTU	25.2 mV	170.08 cm	100.00 ml/min
5/16/2024 2:05 PM	05:00	6.98 pH	21.11 °C	773.85 µS/cm	0.81 mg/L	19.68 NTU	29.3 mV	170.08 cm	100.00 ml/min
5/16/2024 2:06 PM	06:00	6.94 pH	21.01 °C	771.85 µS/cm	1.01 mg/L	23.87 NTU	33.8 mV	170.08 cm	100.00 ml/min
5/16/2024 2:07 PM	07:00	6.93 pH	21.04 °C	765.73 µS/cm	1.27 mg/L	20.29 NTU	36.5 mV	170.08 cm	100.00 ml/min
5/16/2024 2:08 PM	08:00	6.92 pH	20.82 °C	765.02 µS/cm	1.57 mg/L	22.91 NTU	39.6 mV	170.08 cm	100.00 ml/min
5/16/2024 2:09 PM	09:00	6.92 pH	20.91 °C	769.09 µS/cm	1.84 mg/L	21.85 NTU	40.8 mV	170.08 cm	100.00 ml/min
5/16/2024 2:10 PM	10:00	6.92 pH	21.35 °C	769.84 µS/cm	2.16 mg/L	20.29 NTU	42.6 mV	170.08 cm	100.00 ml/min
5/16/2024 2:11 PM	11:00	6.93 pH	21.78 °C	768.67 µS/cm	2.40 mg/L	19.41 NTU	44.2 mV	170.08 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 5/22/2024 8:16:00 AM
Project: P-604C
Operator Name:

Location Name: P-604C

Estimated Total Volume Pumped: 1000 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
5/22/2024 8:16 AM	00:00	6.44 pH	14.80 °C	2,808.7 µS/cm	4.39 mg/L	88.49 NTU	239.0 mV		100.00 ml/min
5/22/2024 8:17 AM	01:00	6.38 pH	14.43 °C	2,822.2 µS/cm	3.14 mg/L	85.51 NTU	242.1 mV		100.00 ml/min
5/22/2024 8:18 AM	02:00	6.36 pH	14.20 °C	2,834.3 µS/cm	2.42 mg/L	75.66 NTU	244.0 mV		100.00 ml/min
5/22/2024 8:19 AM	03:00	6.35 pH	14.06 °C	2,837.2 µS/cm	1.94 mg/L	74.38 NTU	244.6 mV		100.00 ml/min
5/22/2024 8:20 AM	04:00	6.35 pH	14.01 °C	2,835.8 µS/cm	1.67 mg/L	65.19 NTU	244.9 mV		100.00 ml/min
5/22/2024 8:21 AM	05:00	6.34 pH	13.97 °C	2,834.7 µS/cm	1.52 mg/L	63.35 NTU	245.0 mV		100.00 ml/min
5/22/2024 8:22 AM	06:00	6.34 pH	13.92 °C	2,834.4 µS/cm	1.45 mg/L	70.44 NTU	244.8 mV		100.00 ml/min
5/22/2024 8:23 AM	07:00	6.33 pH	13.90 °C	2,832.3 µS/cm	1.39 mg/L	64.52 NTU	244.7 mV		100.00 ml/min
5/22/2024 8:24 AM	08:00	6.33 pH	13.84 °C	2,831.6 µS/cm	1.33 mg/L	68.24 NTU	244.5 mV		100.00 ml/min
5/22/2024 8:25 AM	09:00	6.33 pH	13.79 °C	2,831.6 µS/cm	1.27 mg/L	51.46 NTU	244.0 mV		100.00 ml/min
5/22/2024 8:26 AM	10:00	6.32 pH	13.78 °C	2,830.4 µS/cm	1.21 mg/L	59.32 NTU	243.6 mV		100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 5/22/2024 9:33:18 AM
Project: P-703C
Operator Name:

Location Name: P-703C
Initial Depth to Water: 90.51 ft

Estimated Total Volume Pumped: 1000 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
5/22/2024 9:33 AM	00:00	7.31 pH	16.00 °C	995.53 µS/cm	5.73 mg/L	5.62 NTU	180.0 mV	2,758.7 cm	100.00 ml/min
5/22/2024 9:34 AM	01:00	7.33 pH	15.17 °C	983.87 µS/cm	5.20 mg/L	6.28 NTU	181.9 mV	2,758.7 cm	100.00 ml/min
5/22/2024 9:35 AM	02:00	7.32 pH	14.95 °C	976.23 µS/cm	4.50 mg/L	4.61 NTU	183.0 mV	2,758.7 cm	100.00 ml/min
5/22/2024 9:36 AM	03:00	7.32 pH	14.74 °C	973.11 µS/cm	3.96 mg/L	4.96 NTU	184.0 mV	2,758.7 cm	100.00 ml/min
5/22/2024 9:37 AM	04:00	7.31 pH	14.51 °C	970.95 µS/cm	3.61 mg/L	3.93 NTU	184.9 mV	2,758.7 cm	100.00 ml/min
5/22/2024 9:38 AM	05:00	7.30 pH	14.55 °C	967.86 µS/cm	3.36 mg/L	2.99 NTU	185.5 mV	2,758.7 cm	100.00 ml/min
5/22/2024 9:39 AM	06:00	7.29 pH	14.62 °C	966.59 µS/cm	3.22 mg/L	2.23 NTU	185.9 mV	2,758.7 cm	100.00 ml/min
5/22/2024 9:40 AM	07:00	7.28 pH	14.77 °C	965.92 µS/cm	3.14 mg/L	1.80 NTU	185.9 mV	2,758.7 cm	100.00 ml/min
5/22/2024 9:41 AM	08:00	7.27 pH	14.94 °C	964.80 µS/cm	3.11 mg/L	2.66 NTU	186.2 mV	2,758.7 cm	100.00 ml/min
5/22/2024 9:42 AM	09:00	7.27 pH	15.01 °C	964.64 µS/cm	3.09 mg/L	3.30 NTU	186.5 mV	2,758.7 cm	100.00 ml/min
5/22/2024 9:43 AM	10:00	7.26 pH	15.04 °C	963.65 µS/cm	3.07 mg/L	1.24 NTU	186.6 mV	2,758.7 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 5/22/2024 10:53:52 AM
Project: P-402C
Operator Name:

Location Name: P-402C
Initial Depth to Water: 116.97 ft

Estimated Total Volume Pumped: 1000 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
5/22/2024 10:53 AM	00:00	7.43 pH	25.55 °C	715.04 µS/cm	4.00 mg/L	1.67 NTU	148.4 mV	3,565.2 cm	100.00 ml/min
5/22/2024 10:54 AM	01:00	7.37 pH	23.81 °C	706.76 µS/cm	3.52 mg/L	1.45 NTU	152.6 mV	3,565.2 cm	100.00 ml/min
5/22/2024 10:55 AM	02:00	7.33 pH	22.81 °C	703.89 µS/cm	3.05 mg/L	1.24 NTU	155.2 mV	3,565.2 cm	100.00 ml/min
5/22/2024 10:56 AM	03:00	7.31 pH	22.31 °C	700.75 µS/cm	2.60 mg/L	1.00 NTU	156.8 mV	3,565.2 cm	100.00 ml/min
5/22/2024 10:57 AM	04:00	7.29 pH	21.88 °C	698.27 µS/cm	2.23 mg/L	1.02 NTU	158.5 mV	3,565.2 cm	100.00 ml/min
5/22/2024 10:58 AM	05:00	7.28 pH	21.43 °C	696.19 µS/cm	1.98 mg/L	0.95 NTU	159.5 mV	3,565.2 cm	100.00 ml/min
5/22/2024 10:59 AM	06:00	7.28 pH	20.91 °C	690.87 µS/cm	1.78 mg/L	0.92 NTU	160.2 mV	3,565.2 cm	100.00 ml/min
5/22/2024 11:00 AM	07:00	7.27 pH	20.27 °C	688.28 µS/cm	1.63 mg/L	0.88 NTU	161.2 mV	3,565.2 cm	100.00 ml/min
5/22/2024 11:01 AM	08:00	7.26 pH	19.77 °C	694.24 µS/cm	1.50 mg/L	0.90 NTU	161.5 mV	3,565.2 cm	100.00 ml/min
5/22/2024 11:02 AM	09:00	7.26 pH	19.47 °C	694.47 µS/cm	1.41 mg/L	0.78 NTU	162.1 mV	3,565.2 cm	100.00 ml/min
5/22/2024 11:03 AM	10:00	7.25 pH	19.32 °C	692.02 µS/cm	1.31 mg/L	0.70 NTU	162.5 mV	3,565.2 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 5/22/2024 11:49:01 AM
Project: P-402A
Operator Name:

Location Name: P-402A
Initial Depth to Water: 17.58 ft

Estimated Total Volume Pumped: 1000 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
5/22/2024 11:49 AM	00:00	9.64 pH	23.44 °C	415.59 µS/cm	7.52 mg/L	1.66 NTU	94.2 mV	535.84 cm	100.00 ml/min
5/22/2024 11:50 AM	01:00	9.74 pH	22.41 °C	411.38 µS/cm	7.76 mg/L	1.55 NTU	89.8 mV	535.84 cm	100.00 ml/min
5/22/2024 11:51 AM	02:00	9.77 pH	21.85 °C	410.57 µS/cm	7.75 mg/L	1.70 NTU	88.5 mV	535.84 cm	100.00 ml/min
5/22/2024 11:52 AM	03:00	9.77 pH	21.69 °C	408.72 µS/cm	7.34 mg/L	1.40 NTU	88.5 mV	535.84 cm	100.00 ml/min
5/22/2024 11:53 AM	04:00	9.76 pH	21.35 °C	408.25 µS/cm	7.28 mg/L	1.23 NTU	89.6 mV	535.84 cm	100.00 ml/min
5/22/2024 11:54 AM	05:00	9.75 pH	20.77 °C	407.76 µS/cm	7.32 mg/L	0.98 NTU	90.8 mV	535.84 cm	100.00 ml/min
5/22/2024 11:55 AM	06:00	9.72 pH	20.66 °C	409.48 µS/cm	7.29 mg/L	0.89 NTU	92.4 mV	535.84 cm	100.00 ml/min
5/22/2024 11:56 AM	07:00	9.69 pH	20.74 °C	410.37 µS/cm	7.27 mg/L	1.00 NTU	93.7 mV	535.84 cm	100.00 ml/min
5/22/2024 11:57 AM	08:00	9.66 pH	20.83 °C	410.50 µS/cm	7.23 mg/L	1.10 NTU	95.3 mV	535.84 cm	100.00 ml/min
5/22/2024 11:58 AM	09:00	9.63 pH	20.85 °C	410.42 µS/cm	7.23 mg/L	1.05 NTU	96.8 mV	535.84 cm	100.00 ml/min
5/22/2024 11:59 AM	10:00	9.61 pH	20.91 °C	411.10 µS/cm	7.31 mg/L	1.02 NTU	98.1 mV	535.84 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 5/22/2024 1:40:00 PM
Project: P-216CR
Operator Name:

Location Name: P-216CR
Initial Depth to Water: 112.55 ft

Estimated Total Volume Pumped: 1000 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
5/22/2024 1:40 PM	00:00	10.56 pH	23.48 °C	900.11 µS/cm	6.42 mg/L	16.85 NTU	93.5 mV	3,430.5 cm	100.00 ml/min
5/22/2024 1:41 PM	01:00	10.66 pH	22.62 °C	918.18 µS/cm	6.14 mg/L	15.22 NTU	83.2 mV	3,430.5 cm	100.00 ml/min
5/22/2024 1:42 PM	02:00	10.65 pH	22.42 °C	932.42 µS/cm	5.74 mg/L	15.85 NTU	78.3 mV	3,430.5 cm	100.00 ml/min
5/22/2024 1:43 PM	03:00	10.57 pH	22.04 °C	940.91 µS/cm	5.35 mg/L	16.97 NTU	76.7 mV	3,430.5 cm	100.00 ml/min
5/22/2024 1:44 PM	04:00	10.41 pH	21.75 °C	953.81 µS/cm	4.93 mg/L	13.91 NTU	78.7 mV	3,430.5 cm	100.00 ml/min
5/22/2024 1:45 PM	05:00	10.25 pH	21.53 °C	962.40 µS/cm	4.54 mg/L	14.15 NTU	81.0 mV	3,430.5 cm	100.00 ml/min
5/22/2024 1:46 PM	06:00	10.07 pH	21.32 °C	972.07 µS/cm	4.13 mg/L	16.34 NTU	83.7 mV	3,430.5 cm	100.00 ml/min
5/22/2024 1:47 PM	07:00	9.91 pH	21.21 °C	988.91 µS/cm	3.81 mg/L	11.41 NTU	87.7 mV	3,430.5 cm	100.00 ml/min
5/22/2024 1:48 PM	08:00	9.70 pH	21.19 °C	1,022.5 µS/cm	3.53 mg/L	10.42 NTU	92.4 mV	3,430.5 cm	100.00 ml/min
5/22/2024 1:49 PM	09:00	9.57 pH	21.28 °C	1,027.3 µS/cm	3.21 mg/L	12.33 NTU	94.7 mV	3,430.5 cm	100.00 ml/min
5/22/2024 1:50 PM	10:00	9.39 pH	21.25 °C	1,056.0 µS/cm	2.89 mg/L	12.82 NTU	99.7 mV	3,430.5 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 5/22/2024 2:46:54 PM
Project: P-215CR
Operator Name:

Location Name: P-215CR
Initial Depth to Water: 103.94 ft

Estimated Total Volume Pumped: 1000 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
5/22/2024 2:46 PM	00:00	9.03 pH	26.29 °C	1,142.1 µS/cm	4.33 mg/L	25.95 NTU	111.7 mV	3,168.1 cm	100.00 ml/min
5/22/2024 2:47 PM	01:00	8.90 pH	25.34 °C	1,148.2 µS/cm	3.74 mg/L	25.07 NTU	114.1 mV	3,168.1 cm	100.00 ml/min
5/22/2024 2:48 PM	02:00	8.82 pH	24.83 °C	1,150.3 µS/cm	3.11 mg/L	23.16 NTU	117.1 mV	3,168.1 cm	100.00 ml/min
5/22/2024 2:49 PM	03:00	8.72 pH	24.72 °C	1,142.8 µS/cm	2.70 mg/L	28.71 NTU	119.4 mV	3,168.1 cm	100.00 ml/min
5/22/2024 2:50 PM	04:00	8.66 pH	24.57 °C	1,156.4 µS/cm	2.27 mg/L	28.90 NTU	120.1 mV	3,168.1 cm	100.00 ml/min
5/22/2024 2:51 PM	05:00	8.61 pH	24.17 °C	1,160.5 µS/cm	2.11 mg/L	26.66 NTU	122.5 mV	3,168.1 cm	100.00 ml/min
5/22/2024 2:52 PM	06:00	8.57 pH	23.89 °C	1,164.3 µS/cm	1.92 mg/L	22.27 NTU	123.5 mV	3,168.1 cm	100.00 ml/min
5/22/2024 2:53 PM	07:00	8.55 pH	23.53 °C	1,168.2 µS/cm	1.79 mg/L	17.39 NTU	124.3 mV	3,168.1 cm	100.00 ml/min
5/22/2024 2:54 PM	08:00	8.54 pH	23.46 °C	1,168.4 µS/cm	1.66 mg/L	20.83 NTU	124.9 mV	3,168.1 cm	100.00 ml/min
5/22/2024 2:55 PM	09:00	8.53 pH	23.34 °C	1,172.6 µS/cm	1.60 mg/L	15.27 NTU	125.3 mV	3,168.1 cm	100.00 ml/min
5/22/2024 2:56 PM	10:00	8.53 pH	23.45 °C	1,176.6 µS/cm	1.53 mg/L	13.62 NTU	125.3 mV	3,168.1 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 5/23/2024 9:55:46 AM
Project: P-213C
Operator Name:

Location Name: P-213C
Initial Depth to Water: 110.79 ft

Estimated Total Volume Pumped: 1000 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
5/23/2024 9:55 AM	00:00	7.18 pH	20.52 °C	1,322.4 µS/cm	2.94 mg/L	0.82 NTU	201.7 mV	3,376.9 cm	100.00 ml/min
5/23/2024 9:56 AM	01:00	7.16 pH	20.14 °C	1,323.3 µS/cm	2.43 mg/L	0.83 NTU	202.5 mV	3,376.9 cm	100.00 ml/min
5/23/2024 9:57 AM	02:00	7.15 pH	19.64 °C	1,324.0 µS/cm	2.11 mg/L	1.11 NTU	203.2 mV	3,376.9 cm	100.00 ml/min
5/23/2024 9:58 AM	03:00	7.15 pH	19.15 °C	1,320.6 µS/cm	1.83 mg/L	0.80 NTU	203.8 mV	3,376.9 cm	100.00 ml/min
5/23/2024 9:59 AM	04:00	7.14 pH	19.02 °C	1,319.0 µS/cm	1.64 mg/L	0.81 NTU	204.2 mV	3,376.9 cm	100.00 ml/min
5/23/2024 10:00 AM	05:00	7.13 pH	18.97 °C	1,317.4 µS/cm	1.49 mg/L	0.73 NTU	204.3 mV	3,376.9 cm	100.00 ml/min
5/23/2024 10:01 AM	06:00	7.12 pH	19.18 °C	1,319.3 µS/cm	1.37 mg/L	0.82 NTU	204.2 mV	3,376.9 cm	100.00 ml/min
5/23/2024 10:02 AM	07:00	7.12 pH	19.47 °C	1,318.8 µS/cm	1.26 mg/L	0.84 NTU	204.0 mV	3,376.9 cm	100.00 ml/min
5/23/2024 10:03 AM	08:00	7.11 pH	19.65 °C	1,319.6 µS/cm	1.18 mg/L	0.89 NTU	203.9 mV	3,376.9 cm	100.00 ml/min
5/23/2024 10:04 AM	09:00	7.11 pH	19.77 °C	1,320.4 µS/cm	1.12 mg/L	0.74 NTU	203.7 mV	3,376.9 cm	100.00 ml/min
5/23/2024 10:05 AM	10:00	7.11 pH	19.89 °C	1,320.5 µS/cm	1.06 mg/L	0.66 NTU	203.6 mV	3,376.9 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 5/23/2024 9:55:46 AM
Project: P-213C
Operator Name:

Location Name: P-213C
Initial Depth to Water: 110.79 ft

Estimated Total Volume Pumped: 1000 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
5/23/2024 9:55 AM	00:00	7.18 pH	20.52 °C	1,322.4 µS/cm	2.94 mg/L	0.82 NTU	201.7 mV	3,376.9 cm	100.00 ml/min
5/23/2024 9:56 AM	01:00	7.16 pH	20.14 °C	1,323.3 µS/cm	2.43 mg/L	0.83 NTU	202.5 mV	3,376.9 cm	100.00 ml/min
5/23/2024 9:57 AM	02:00	7.15 pH	19.64 °C	1,324.0 µS/cm	2.11 mg/L	1.11 NTU	203.2 mV	3,376.9 cm	100.00 ml/min
5/23/2024 9:58 AM	03:00	7.15 pH	19.15 °C	1,320.6 µS/cm	1.83 mg/L	0.80 NTU	203.8 mV	3,376.9 cm	100.00 ml/min
5/23/2024 9:59 AM	04:00	7.14 pH	19.02 °C	1,319.0 µS/cm	1.64 mg/L	0.81 NTU	204.2 mV	3,376.9 cm	100.00 ml/min
5/23/2024 10:00 AM	05:00	7.13 pH	18.97 °C	1,317.4 µS/cm	1.49 mg/L	0.73 NTU	204.3 mV	3,376.9 cm	100.00 ml/min
5/23/2024 10:01 AM	06:00	7.12 pH	19.18 °C	1,319.3 µS/cm	1.37 mg/L	0.82 NTU	204.2 mV	3,376.9 cm	100.00 ml/min
5/23/2024 10:02 AM	07:00	7.12 pH	19.47 °C	1,318.8 µS/cm	1.26 mg/L	0.84 NTU	204.0 mV	3,376.9 cm	100.00 ml/min
5/23/2024 10:03 AM	08:00	7.11 pH	19.65 °C	1,319.6 µS/cm	1.18 mg/L	0.89 NTU	203.9 mV	3,376.9 cm	100.00 ml/min
5/23/2024 10:04 AM	09:00	7.11 pH	19.77 °C	1,320.4 µS/cm	1.12 mg/L	0.74 NTU	203.7 mV	3,376.9 cm	100.00 ml/min
5/23/2024 10:05 AM	10:00	7.11 pH	19.89 °C	1,320.5 µS/cm	1.06 mg/L	0.66 NTU	203.6 mV	3,376.9 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 5/23/2024 1:01:06 PM
Project: P-214CR
Operator Name:

Location Name: P-214CR
Initial Depth to Water: 96.58 ft

Estimated Total Volume Pumped: 1000 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
5/23/2024 1:01 PM	00:00	8.49 pH	24.83 °C	1,068.8 µS/cm	2.62 mg/L	38.51 NTU	159.4 mV	2,943.8 cm	100.00 ml/min
5/23/2024 1:02 PM	01:00	8.48 pH	22.79 °C	1,060.4 µS/cm	2.06 mg/L	41.68 NTU	162.3 mV	2,943.8 cm	100.00 ml/min
5/23/2024 1:03 PM	02:00	8.46 pH	21.14 °C	1,061.5 µS/cm	1.75 mg/L	44.84 NTU	163.8 mV	2,943.8 cm	100.00 ml/min
5/23/2024 1:04 PM	03:00	8.43 pH	20.70 °C	1,057.8 µS/cm	1.52 mg/L	41.91 NTU	165.1 mV	2,943.8 cm	100.00 ml/min
5/23/2024 1:05 PM	04:00	8.38 pH	20.66 °C	1,060.1 µS/cm	1.40 mg/L	40.43 NTU	167.2 mV	2,943.8 cm	100.00 ml/min
5/23/2024 1:06 PM	05:00	8.33 pH	21.04 °C	1,064.3 µS/cm	1.27 mg/L	40.14 NTU	169.2 mV	2,943.8 cm	100.00 ml/min
5/23/2024 1:07 PM	06:00	8.27 pH	21.40 °C	1,066.5 µS/cm	1.18 mg/L	39.46 NTU	171.5 mV	2,943.8 cm	100.00 ml/min
5/23/2024 1:08 PM	07:00	8.22 pH	21.51 °C	1,067.9 µS/cm	1.10 mg/L	27.55 NTU	172.8 mV	2,943.8 cm	100.00 ml/min
5/23/2024 1:09 PM	08:00	8.19 pH	21.70 °C	1,068.4 µS/cm	1.04 mg/L	25.80 NTU	173.7 mV	2,943.8 cm	100.00 ml/min
5/23/2024 1:10 PM	09:00	8.17 pH	21.82 °C	1,067.7 µS/cm	0.98 mg/L	27.19 NTU	174.0 mV	2,943.8 cm	100.00 ml/min
5/23/2024 1:11 PM	10:00	8.17 pH	21.93 °C	1,066.9 µS/cm	0.97 mg/L	35.53 NTU	173.9 mV	2,943.8 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 5/23/2024 1:55:57 PM
Project: OW-113B
Operator Name:

Location Name: OW-113B
Initial Depth to Water: 4.23 ft

Estimated Total Volume Pumped: 1000 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
5/23/2024 1:55 PM	00:00	6.61 pH	23.26 °C	2,226.6 µS/cm	1.87 mg/L	100.17 NTU	249.3 mV	128.93 cm	100.00 ml/min
5/23/2024 1:56 PM	01:00	6.53 pH	21.50 °C	2,248.7 µS/cm	1.15 mg/L	119.95 NTU	250.4 mV	128.93 cm	100.00 ml/min
5/23/2024 1:57 PM	02:00	6.50 pH	20.30 °C	2,264.6 µS/cm	0.76 mg/L	126.59 NTU	250.4 mV	128.93 cm	100.00 ml/min
5/23/2024 1:58 PM	03:00	6.47 pH	19.87 °C	2,252.0 µS/cm	0.58 mg/L	127.60 NTU	250.1 mV	128.93 cm	100.00 ml/min
5/23/2024 1:59 PM	04:00	6.46 pH	19.78 °C	2,258.9 µS/cm	0.51 mg/L	130.44 NTU	249.8 mV	128.93 cm	100.00 ml/min
5/23/2024 2:00 PM	05:00	6.44 pH	19.60 °C	2,259.1 µS/cm	0.49 mg/L	135.99 NTU	249.3 mV	128.93 cm	100.00 ml/min
5/23/2024 2:01 PM	06:00	6.43 pH	19.43 °C	2,259.6 µS/cm	0.51 mg/L	127.51 NTU	248.9 mV	128.93 cm	100.00 ml/min
5/23/2024 2:02 PM	07:00	6.42 pH	19.23 °C	2,249.5 µS/cm	0.59 mg/L	122.66 NTU	248.3 mV	128.93 cm	100.00 ml/min
5/23/2024 2:03 PM	08:00	6.42 pH	19.32 °C	2,253.8 µS/cm	0.72 mg/L	135.01 NTU	247.7 mV	128.93 cm	100.00 ml/min
5/23/2024 2:04 PM	09:00	6.42 pH	19.05 °C	2,250.2 µS/cm	0.93 mg/L	140.79 NTU	247.1 mV	128.93 cm	100.00 ml/min
5/23/2024 2:05 PM	10:00	6.41 pH	18.93 °C	2,247.3 µS/cm	1.10 mg/L	135.60 NTU	246.5 mV	128.93 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 5/23/2024 3:02:43 PM
Project: OW-226B
Operator Name:

Location Name: OW-226B
Initial Depth to Water: 11.91 ft

Estimated Total Volume Pumped: 1000 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
5/23/2024 3:02 PM	00:00	6.90 pH	28.99 °C	6,989.5 µS/cm	2.71 mg/L	17.91 NTU	157.2 mV	363.02 cm	100.00 ml/min
5/23/2024 3:03 PM	01:00	6.88 pH	24.31 °C	7,554.8 µS/cm	1.80 mg/L	17.62 NTU	147.5 mV	363.02 cm	100.00 ml/min
5/23/2024 3:04 PM	02:00	6.88 pH	21.89 °C	7,687.7 µS/cm	1.21 mg/L	10.20 NTU	136.5 mV	363.02 cm	100.00 ml/min
5/23/2024 3:05 PM	03:00	6.87 pH	21.39 °C	7,713.6 µS/cm	0.75 mg/L	9.62 NTU	124.3 mV	363.02 cm	100.00 ml/min
5/23/2024 3:06 PM	04:00	6.86 pH	20.49 °C	7,716.6 µS/cm	0.50 mg/L	13.47 NTU	112.0 mV	363.02 cm	100.00 ml/min
5/23/2024 3:07 PM	05:00	6.85 pH	19.65 °C	7,674.5 µS/cm	0.37 mg/L	12.56 NTU	100.2 mV	363.02 cm	100.00 ml/min
5/23/2024 3:08 PM	06:00	6.84 pH	19.18 °C	7,541.7 µS/cm	0.30 mg/L	16.25 NTU	88.5 mV	363.02 cm	100.00 ml/min
5/23/2024 3:09 PM	07:00	6.83 pH	19.44 °C	7,487.6 µS/cm	0.27 mg/L	17.37 NTU	77.4 mV	363.02 cm	100.00 ml/min
5/23/2024 3:10 PM	08:00	6.83 pH	19.12 °C	7,137.8 µS/cm	0.43 mg/L	21.87 NTU	66.4 mV	363.02 cm	100.00 ml/min
5/23/2024 3:11 PM	09:00	6.84 pH	18.94 °C	6,668.2 µS/cm	1.08 mg/L	23.96 NTU	57.2 mV	363.02 cm	100.00 ml/min
5/23/2024 3:12 PM	10:00	6.86 pH	18.68 °C	6,474.6 µS/cm	1.70 mg/L	24.86 NTU	50.8 mV	363.02 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 5/23/2024 3:48:26 PM
Project: OW-227B
Operator Name:

Location Name: OW-227B
Initial Depth to Water: 9.23 ft

Estimated Total Volume Pumped: 1000 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
5/23/2024 3:48 PM	00:00	6.74 pH	24.68 °C	5,657.9 µS/cm	2.49 mg/L	16.72 NTU	47.5 mV	281.33 cm	100.00 ml/min
5/23/2024 3:49 PM	01:00	6.68 pH	21.57 °C	5,643.7 µS/cm	1.61 mg/L	9.39 NTU	49.8 mV	281.33 cm	100.00 ml/min
5/23/2024 3:50 PM	02:00	6.66 pH	20.91 °C	5,629.3 µS/cm	1.00 mg/L	4.38 NTU	49.1 mV	281.33 cm	100.00 ml/min
5/23/2024 3:51 PM	03:00	6.65 pH	19.77 °C	5,617.7 µS/cm	0.67 mg/L	3.26 NTU	46.5 mV	281.33 cm	100.00 ml/min
5/23/2024 3:52 PM	04:00	6.64 pH	18.91 °C	5,614.3 µS/cm	0.49 mg/L	2.79 NTU	44.2 mV	281.33 cm	100.00 ml/min
5/23/2024 3:53 PM	05:00	6.62 pH	18.43 °C	5,594.2 µS/cm	0.39 mg/L	6.18 NTU	42.0 mV	281.33 cm	100.00 ml/min
5/23/2024 3:54 PM	06:00	6.61 pH	18.52 °C	5,572.6 µS/cm	0.32 mg/L	2.16 NTU	39.8 mV	281.33 cm	100.00 ml/min
5/23/2024 3:55 PM	07:00	6.59 pH	18.04 °C	5,563.0 µS/cm	0.32 mg/L	5.83 NTU	37.3 mV	281.33 cm	100.00 ml/min
5/23/2024 3:56 PM	08:00	6.59 pH	17.51 °C	5,501.7 µS/cm	0.53 mg/L	3.78 NTU	35.7 mV	281.33 cm	100.00 ml/min
5/23/2024 3:57 PM	09:00	6.60 pH	17.26 °C	5,442.7 µS/cm	1.11 mg/L	6.16 NTU	34.3 mV	281.33 cm	100.00 ml/min
5/23/2024 3:58 PM	10:00	6.61 pH	17.37 °C	5,393.0 µS/cm	1.84 mg/L	9.52 NTU	34.3 mV	281.33 cm	100.00 ml/min

Samples

Sample ID:	Description:

APPENDIX C-4
FALL LOW FLOW TEST REPORTS

Low-Flow Test Report:

Test Date / Time: 9/25/2024 9:16:47 AM
Project: P-216CR
Operator Name:

Location Name: P-216CR
Initial Depth to Water: 113.57 ft

Estimated Total Volume Pumped: 1100 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
9/25/2024 9:16 AM	00:00	7.70 pH	19.99 °C	1,349.9 µS/cm	5.19 mg/L	8.93 NTU	175.1 mV	3,461.6 cm	100.00 ml/min
9/25/2024 9:17 AM	01:00	7.69 pH	19.28 °C	1,352.7 µS/cm	4.37 mg/L	7.37 NTU	174.4 mV	3,461.6 cm	100.00 ml/min
9/25/2024 9:18 AM	02:00	7.65 pH	18.87 °C	1,350.1 µS/cm	3.70 mg/L	6.88 NTU	176.9 mV	3,461.6 cm	100.00 ml/min
9/25/2024 9:19 AM	03:00	7.60 pH	18.57 °C	1,347.6 µS/cm	3.24 mg/L	6.42 NTU	179.1 mV	3,461.6 cm	100.00 ml/min
9/25/2024 9:20 AM	04:00	7.58 pH	18.22 °C	1,350.1 µS/cm	2.94 mg/L	7.24 NTU	180.0 mV	3,461.6 cm	100.00 ml/min
9/25/2024 9:21 AM	05:00	7.55 pH	17.93 °C	1,357.0 µS/cm	2.73 mg/L	6.42 NTU	182.2 mV	3,461.6 cm	100.00 ml/min
9/25/2024 9:22 AM	06:00	7.53 pH	17.84 °C	1,359.5 µS/cm	2.55 mg/L	5.78 NTU	182.4 mV	3,461.6 cm	100.00 ml/min
9/25/2024 9:23 AM	07:00	7.52 pH	17.77 °C	1,364.2 µS/cm	2.42 mg/L	7.50 NTU	184.0 mV	3,461.6 cm	100.00 ml/min
9/25/2024 9:24 AM	08:00	7.51 pH	17.72 °C	1,365.9 µS/cm	2.34 mg/L	7.17 NTU	186.0 mV	3,461.6 cm	100.00 ml/min
9/25/2024 9:25 AM	09:00	7.50 pH	17.71 °C	1,365.3 µS/cm	2.33 mg/L	10.06 NTU	186.8 mV	3,461.6 cm	100.00 ml/min
9/25/2024 9:26 AM	10:00	7.50 pH	17.79 °C	1,360.7 µS/cm	2.37 mg/L	10.68 NTU	188.0 mV	3,461.6 cm	100.00 ml/min
9/25/2024 9:27 AM	11:00	7.50 pH	17.77 °C	1,361.3 µS/cm	2.49 mg/L	8.54 NTU	189.0 mV	3,461.6 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 9/25/2024 11:25:00 AM
Project: OW-216BR
Operator Name:

Location Name: OW-216BR
Initial Depth to Water: 9.81 ft

Estimated Total Volume Pumped: 1000 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
9/25/2024 11:25 AM	00:00	7.95 pH	26.20 °C	832.38 µS/cm	3.19 mg/L	2.81 NTU	200.3 mV	299.01 cm	100.00 ml/min
9/25/2024 11:26 AM	01:00	7.76 pH	24.41 °C	820.91 µS/cm	2.10 mg/L	3.69 NTU	205.5 mV	299.01 cm	100.00 ml/min
9/25/2024 11:27 AM	02:00	7.67 pH	23.30 °C	818.69 µS/cm	1.59 mg/L	5.27 NTU	208.1 mV	299.01 cm	100.00 ml/min
9/25/2024 11:28 AM	03:00	7.61 pH	22.73 °C	818.98 µS/cm	1.27 mg/L	4.45 NTU	210.9 mV	299.01 cm	100.00 ml/min
9/25/2024 11:29 AM	04:00	7.58 pH	22.34 °C	813.11 µS/cm	1.17 mg/L	15.01 NTU	211.8 mV	299.01 cm	100.00 ml/min
9/25/2024 11:30 AM	05:00	7.54 pH	22.01 °C	813.55 µS/cm	1.18 mg/L	3.84 NTU	213.9 mV	299.01 cm	100.00 ml/min
9/25/2024 11:31 AM	06:00	7.51 pH	21.95 °C	810.76 µS/cm	1.35 mg/L	7.22 NTU	214.7 mV	299.01 cm	100.00 ml/min
9/25/2024 11:32 AM	07:00	7.49 pH	21.74 °C	807.46 µS/cm	1.58 mg/L	7.19 NTU	216.3 mV	299.01 cm	100.00 ml/min
9/25/2024 11:33 AM	08:00	7.48 pH	21.69 °C	800.58 µS/cm	1.97 mg/L	8.83 NTU	217.3 mV	299.01 cm	100.00 ml/min
9/25/2024 11:34 AM	09:00	7.48 pH	21.62 °C	794.24 µS/cm	2.70 mg/L	6.04 NTU	217.5 mV	299.01 cm	100.00 ml/min
9/25/2024 11:35 AM	10:00	7.48 pH	21.53 °C	793.51 µS/cm	3.22 mg/L	8.28 NTU	217.9 mV	299.01 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 9/26/2024 9:46:44 AM
Project: P-215CR
Operator Name:

Location Name: P-215CR
Initial Depth to Water: 105.18 ft

Estimated Total Volume Pumped: 1000 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
9/26/2024 9:46 AM	00:00	7.33 pH	20.20 °C	1,454.6 µS/cm	2.87 mg/L	15.62 NTU	193.9 mV	3,205.9 cm	100.00 ml/min
9/26/2024 9:47 AM	01:00	7.27 pH	19.95 °C	1,459.2 µS/cm	2.18 mg/L	12.82 NTU	196.6 mV	3,205.9 cm	100.00 ml/min
9/26/2024 9:48 AM	02:00	7.22 pH	19.72 °C	1,464.7 µS/cm	1.72 mg/L	11.79 NTU	198.7 mV	3,205.9 cm	100.00 ml/min
9/26/2024 9:49 AM	03:00	7.18 pH	19.60 °C	1,469.9 µS/cm	1.42 mg/L	9.95 NTU	199.9 mV	3,205.9 cm	100.00 ml/min
9/26/2024 9:50 AM	04:00	7.15 pH	19.54 °C	1,471.9 µS/cm	1.22 mg/L	7.31 NTU	201.5 mV	3,205.9 cm	100.00 ml/min
9/26/2024 9:51 AM	05:00	7.13 pH	19.48 °C	1,474.2 µS/cm	1.09 mg/L	8.45 NTU	202.4 mV	3,205.9 cm	100.00 ml/min
9/26/2024 9:52 AM	06:00	7.11 pH	19.49 °C	1,475.7 µS/cm	0.99 mg/L	7.22 NTU	203.4 mV	3,205.9 cm	100.00 ml/min
9/26/2024 9:53 AM	07:00	7.10 pH	19.45 °C	1,477.4 µS/cm	0.91 mg/L	8.73 NTU	203.9 mV	3,205.9 cm	100.00 ml/min
9/26/2024 9:54 AM	08:00	7.09 pH	19.43 °C	1,480.4 µS/cm	0.85 mg/L	8.52 NTU	204.4 mV	3,205.9 cm	100.00 ml/min
9/26/2024 9:55 AM	09:00	7.09 pH	19.51 °C	1,477.4 µS/cm	0.81 mg/L	7.58 NTU	204.9 mV	3,205.9 cm	100.00 ml/min
9/26/2024 9:56 AM	10:00	7.08 pH	20.41 °C	1,478.7 µS/cm	0.76 mg/L	6.14 NTU	205.3 mV	3,205.9 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 9/26/2024 11:23:00 AM
Project: P-214CR
Operator Name:

Location Name: P-214CR
Initial Depth to Water: 95.21 ft

Estimated Total Volume Pumped: 1200 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
9/26/2024 11:23 AM	00:00	7.99 pH	28.13 °C	1,350.3 µS/cm	3.32 mg/L	49.23 NTU	169.6 mV	2,902.0 cm	100.00 ml/min
9/26/2024 11:24 AM	01:00	8.00 pH	26.38 °C	1,355.3 µS/cm	2.25 mg/L	41.69 NTU	171.4 mV	2,902.0 cm	100.00 ml/min
9/26/2024 11:25 AM	02:00	7.99 pH	25.00 °C	1,356.2 µS/cm	1.69 mg/L	34.10 NTU	173.2 mV	2,902.0 cm	100.00 ml/min
9/26/2024 11:26 AM	03:00	7.98 pH	24.19 °C	1,357.6 µS/cm	1.38 mg/L	32.60 NTU	174.4 mV	2,902.0 cm	100.00 ml/min
9/26/2024 11:27 AM	04:00	7.98 pH	23.71 °C	1,357.2 µS/cm	1.18 mg/L	29.44 NTU	175.0 mV	2,902.0 cm	100.00 ml/min
9/26/2024 11:28 AM	05:00	7.97 pH	23.28 °C	1,360.4 µS/cm	1.06 mg/L	24.34 NTU	175.7 mV	2,902.0 cm	100.00 ml/min
9/26/2024 11:29 AM	06:00	7.96 pH	22.98 °C	1,360.1 µS/cm	0.98 mg/L	22.57 NTU	177.1 mV	2,902.0 cm	100.00 ml/min
9/26/2024 11:30 AM	07:00	7.97 pH	22.83 °C	1,359.7 µS/cm	0.96 mg/L	21.05 NTU	177.2 mV	2,902.0 cm	100.00 ml/min
9/26/2024 11:31 AM	08:00	7.98 pH	22.64 °C	1,362.0 µS/cm	1.00 mg/L	15.44 NTU	177.5 mV	2,902.0 cm	100.00 ml/min
9/26/2024 11:32 AM	09:00	8.01 pH	22.57 °C	1,363.6 µS/cm	1.09 mg/L	16.53 NTU	177.6 mV	2,902.0 cm	100.00 ml/min
9/26/2024 11:33 AM	10:00	8.04 pH	22.41 °C	1,362.7 µS/cm	1.26 mg/L	18.28 NTU	178.0 mV	2,902.0 cm	100.00 ml/min
9/26/2024 11:34 AM	11:00	8.08 pH	22.36 °C	1,360.4 µS/cm	1.46 mg/L	26.55 NTU	178.0 mV	2,902.0 cm	100.00 ml/min
9/26/2024 11:35 AM	12:00	8.10 pH	22.28 °C	1,361.5 µS/cm	1.68 mg/L	31.87 NTU	178.4 mV	2,902.0 cm	100.00 ml/min

Samples

Sample ID:	Description:

Created using VuSitu from In-Situ, Inc.

Low-Flow Test Report:

Test Date / Time: 9/26/2024 11:23:00 AM
Project: P-214CR
Operator Name:

Location Name: P-214CR
Initial Depth to Water: 95.21 ft

Estimated Total Volume Pumped: 1200 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
9/26/2024 11:23 AM	00:00	7.99 pH	28.13 °C	1,350.3 µS/cm	3.32 mg/L	49.23 NTU	169.6 mV	2,902.0 cm	100.00 ml/min
9/26/2024 11:24 AM	01:00	8.00 pH	26.38 °C	1,355.3 µS/cm	2.25 mg/L	41.69 NTU	171.4 mV	2,902.0 cm	100.00 ml/min
9/26/2024 11:25 AM	02:00	7.99 pH	25.00 °C	1,356.2 µS/cm	1.69 mg/L	34.10 NTU	173.2 mV	2,902.0 cm	100.00 ml/min
9/26/2024 11:26 AM	03:00	7.98 pH	24.19 °C	1,357.6 µS/cm	1.38 mg/L	32.60 NTU	174.4 mV	2,902.0 cm	100.00 ml/min
9/26/2024 11:27 AM	04:00	7.98 pH	23.71 °C	1,357.2 µS/cm	1.18 mg/L	29.44 NTU	175.0 mV	2,902.0 cm	100.00 ml/min
9/26/2024 11:28 AM	05:00	7.97 pH	23.28 °C	1,360.4 µS/cm	1.06 mg/L	24.34 NTU	175.7 mV	2,902.0 cm	100.00 ml/min
9/26/2024 11:29 AM	06:00	7.96 pH	22.98 °C	1,360.1 µS/cm	0.98 mg/L	22.57 NTU	177.1 mV	2,902.0 cm	100.00 ml/min
9/26/2024 11:30 AM	07:00	7.97 pH	22.83 °C	1,359.7 µS/cm	0.96 mg/L	21.05 NTU	177.2 mV	2,902.0 cm	100.00 ml/min
9/26/2024 11:31 AM	08:00	7.98 pH	22.64 °C	1,362.0 µS/cm	1.00 mg/L	15.44 NTU	177.5 mV	2,902.0 cm	100.00 ml/min
9/26/2024 11:32 AM	09:00	8.01 pH	22.57 °C	1,363.6 µS/cm	1.09 mg/L	16.53 NTU	177.6 mV	2,902.0 cm	100.00 ml/min
9/26/2024 11:33 AM	10:00	8.04 pH	22.41 °C	1,362.7 µS/cm	1.26 mg/L	18.28 NTU	178.0 mV	2,902.0 cm	100.00 ml/min
9/26/2024 11:34 AM	11:00	8.08 pH	22.36 °C	1,360.4 µS/cm	1.46 mg/L	26.55 NTU	178.0 mV	2,902.0 cm	100.00 ml/min
9/26/2024 11:35 AM	12:00	8.10 pH	22.28 °C	1,361.5 µS/cm	1.68 mg/L	31.87 NTU	178.4 mV	2,902.0 cm	100.00 ml/min

Samples

Sample ID:	Description:

Created using VuSitu from In-Situ, Inc.

Low-Flow Test Report:

Test Date / Time: 10/1/2024 9:12:03 AM
Project: OW-101B
Operator Name:

Location Name: OW-101B
Initial Depth to Water: 9.23 ft

Estimated Total Volume Pumped: 1000 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
10/1/2024 9:12 AM	00:00	7.59 pH	14.85 °C	725.21 µS/cm	3.53 mg/L	11.49 NTU	134.0 mV	281.33 cm	100.00 ml/min
10/1/2024 9:13 AM	01:00	7.40 pH	14.45 °C	721.84 µS/cm	2.08 mg/L	7.21 NTU	141.9 mV	281.33 cm	100.00 ml/min
10/1/2024 9:14 AM	02:00	7.26 pH	14.21 °C	719.81 µS/cm	1.36 mg/L	5.84 NTU	156.5 mV	281.33 cm	100.00 ml/min
10/1/2024 9:15 AM	03:00	7.16 pH	14.14 °C	718.93 µS/cm	1.00 mg/L	5.85 NTU	157.5 mV	281.33 cm	100.00 ml/min
10/1/2024 9:16 AM	04:00	7.09 pH	14.20 °C	717.98 µS/cm	0.83 mg/L	4.37 NTU	159.8 mV	281.33 cm	100.00 ml/min
10/1/2024 9:17 AM	05:00	7.03 pH	14.18 °C	717.02 µS/cm	0.76 mg/L	4.02 NTU	164.9 mV	281.33 cm	100.00 ml/min
10/1/2024 9:18 AM	06:00	6.99 pH	14.15 °C	715.54 µS/cm	0.79 mg/L	3.09 NTU	171.5 mV	281.33 cm	100.00 ml/min
10/1/2024 9:19 AM	07:00	6.96 pH	14.19 °C	714.35 µS/cm	0.97 mg/L	3.19 NTU	173.4 mV	281.33 cm	100.00 ml/min
10/1/2024 9:20 AM	08:00	6.93 pH	14.28 °C	714.14 µS/cm	1.34 mg/L	2.80 NTU	174.7 mV	281.33 cm	100.00 ml/min
10/1/2024 9:21 AM	09:00	6.92 pH	14.28 °C	713.75 µS/cm	1.80 mg/L	4.53 NTU	176.4 mV	281.33 cm	100.00 ml/min
10/1/2024 9:22 AM	10:00	6.91 pH	14.31 °C	713.08 µS/cm	2.19 mg/L	5.83 NTU	179.1 mV	281.33 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 10/1/2024 10:09:13 AM
Project: OW-105B
Operator Name:

Location Name: OW-105B
Initial Depth to Water: 17.26 ft

Estimated Total Volume Pumped: 1300 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
10/1/2024 10:09 AM	00:00	6.65 pH	14.73 °C	1,155.5 µS/cm	1.35 mg/L	1.52 NTU	213.3 mV	526.08 cm	100.00 ml/min
10/1/2024 10:10 AM	01:00	6.69 pH	14.70 °C	1,153.8 µS/cm	1.57 mg/L	2.19 NTU	213.0 mV	526.08 cm	100.00 ml/min
10/1/2024 10:11 AM	02:00	6.70 pH	14.66 °C	1,152.8 µS/cm	1.91 mg/L	3.28 NTU	212.4 mV	526.08 cm	100.00 ml/min
10/1/2024 10:12 AM	03:00	6.71 pH	14.68 °C	1,151.2 µS/cm	2.32 mg/L	3.25 NTU	211.8 mV	526.08 cm	100.00 ml/min
10/1/2024 10:13 AM	04:00	6.73 pH	14.69 °C	1,149.9 µS/cm	2.82 mg/L	4.81 NTU	211.1 mV	526.08 cm	100.00 ml/min
10/1/2024 10:14 AM	05:00	6.74 pH	14.68 °C	1,147.8 µS/cm	3.38 mg/L	5.82 NTU	210.5 mV	526.08 cm	100.00 ml/min
10/1/2024 10:15 AM	06:00	6.76 pH	14.67 °C	1,147.3 µS/cm	3.89 mg/L	7.61 NTU	210.0 mV	526.08 cm	100.00 ml/min
10/1/2024 10:16 AM	07:00	6.77 pH	14.70 °C	1,147.3 µS/cm	4.40 mg/L	3.57 NTU	209.6 mV	526.08 cm	100.00 ml/min
10/1/2024 10:17 AM	08:00	6.78 pH	14.72 °C	1,149.0 µS/cm	4.83 mg/L	4.53 NTU	209.1 mV	526.08 cm	100.00 ml/min
10/1/2024 10:18 AM	09:00	6.80 pH	14.79 °C	1,147.4 µS/cm	5.25 mg/L	4.74 NTU	208.7 mV	526.08 cm	100.00 ml/min
10/1/2024 10:19 AM	10:00	6.81 pH	14.83 °C	1,148.0 µS/cm	5.64 mg/L	3.27 NTU	208.3 mV	526.08 cm	100.00 ml/min
10/1/2024 10:20 AM	11:00	6.82 pH	14.82 °C	1,149.2 µS/cm	6.02 mg/L	4.81 NTU	207.7 mV	526.08 cm	100.00 ml/min
10/1/2024 10:21 AM	12:00	6.83 pH	14.82 °C	1,148.6 µS/cm	6.33 mg/L	4.20 NTU	207.5 mV	526.08 cm	100.00 ml/min
10/1/2024 10:22 AM	13:00	6.85 pH	14.81 °C	1,149.4 µS/cm	6.63 mg/L	5.38 NTU	207.1 mV	526.08 cm	100.00 ml/min

Samples

Sample ID:	Description:

Created using VuSitu from In-Situ, Inc.

Low-Flow Test Report:

Test Date / Time: 10/1/2024 11:00:07 AM
Project: OW-113B
Operator Name:

Location Name: OW-113B
Initial Depth to Water: 8.23 ft

Estimated Total Volume Pumped: 1000 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
10/1/2024 11:00 AM	00:00	6.40 pH	18.72 °C	2,360.7 µS/cm	1.33 mg/L	7.28 NTU	235.2 mV	250.85 cm	100.00 ml/min
10/1/2024 11:01 AM	01:00	6.40 pH	18.43 °C	2,363.3 µS/cm	0.81 mg/L	9.72 NTU	235.4 mV	250.85 cm	100.00 ml/min
10/1/2024 11:02 AM	02:00	6.40 pH	18.23 °C	2,366.9 µS/cm	0.54 mg/L	9.69 NTU	235.4 mV	250.85 cm	100.00 ml/min
10/1/2024 11:03 AM	03:00	6.40 pH	18.12 °C	2,366.9 µS/cm	0.39 mg/L	10.81 NTU	235.3 mV	250.85 cm	100.00 ml/min
10/1/2024 11:04 AM	04:00	6.39 pH	18.08 °C	2,365.9 µS/cm	0.35 mg/L	13.59 NTU	235.1 mV	250.85 cm	100.00 ml/min
10/1/2024 11:05 AM	05:00	6.39 pH	18.08 °C	2,359.3 µS/cm	0.43 mg/L	20.32 NTU	234.8 mV	250.85 cm	100.00 ml/min
10/1/2024 11:06 AM	06:00	6.40 pH	17.99 °C	2,352.4 µS/cm	0.67 mg/L	23.55 NTU	234.2 mV	250.85 cm	100.00 ml/min
10/1/2024 11:07 AM	07:00	6.41 pH	17.98 °C	2,347.4 µS/cm	1.04 mg/L	27.65 NTU	233.5 mV	250.85 cm	100.00 ml/min
10/1/2024 11:08 AM	08:00	6.43 pH	17.98 °C	2,340.5 µS/cm	1.57 mg/L	29.00 NTU	232.3 mV	250.85 cm	100.00 ml/min
10/1/2024 11:09 AM	09:00	6.45 pH	18.01 °C	2,336.5 µS/cm	2.14 mg/L	30.56 NTU	231.2 mV	250.85 cm	100.00 ml/min
10/1/2024 11:10 AM	10:00	6.47 pH	17.99 °C	2,333.8 µS/cm	2.81 mg/L	29.25 NTU	229.9 mV	250.85 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 10/2/2024 9:18:47 AM
Project: OW-114B
Operator Name:

Location Name: OW-114B
Initial Depth to Water: 9.84 ft

Estimated Total Volume Pumped: 1000 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
10/2/2024 9:18 AM	00:00	6.71 pH	17.39 °C	1,988.3 µS/cm	3.77 mg/L	11.16 NTU	224.4 mV	299.92 cm	100.00 ml/min
10/2/2024 9:19 AM	01:00	6.68 pH	17.01 °C	1,990.5 µS/cm	2.21 mg/L	6.80 NTU	226.7 mV	299.92 cm	100.00 ml/min
10/2/2024 9:20 AM	02:00	6.66 pH	16.76 °C	1,995.2 µS/cm	1.39 mg/L	8.14 NTU	227.4 mV	299.92 cm	100.00 ml/min
10/2/2024 9:21 AM	03:00	6.65 pH	16.69 °C	1,995.8 µS/cm	0.94 mg/L	4.06 NTU	228.0 mV	299.92 cm	100.00 ml/min
10/2/2024 9:22 AM	04:00	6.65 pH	16.71 °C	1,992.8 µS/cm	0.74 mg/L	3.29 NTU	228.4 mV	299.92 cm	100.00 ml/min
10/2/2024 9:23 AM	05:00	6.65 pH	16.77 °C	1,992.1 µS/cm	0.62 mg/L	2.59 NTU	228.7 mV	299.92 cm	100.00 ml/min
10/2/2024 9:24 AM	06:00	6.64 pH	16.82 °C	1,990.4 µS/cm	0.54 mg/L	2.89 NTU	229.0 mV	299.92 cm	100.00 ml/min
10/2/2024 9:25 AM	07:00	6.65 pH	16.81 °C	1,984.1 µS/cm	0.52 mg/L	1.99 NTU	229.1 mV	299.92 cm	100.00 ml/min
10/2/2024 9:26 AM	08:00	6.66 pH	16.72 °C	1,976.3 µS/cm	0.65 mg/L	2.21 NTU	228.9 mV	299.92 cm	100.00 ml/min
10/2/2024 9:27 AM	09:00	6.67 pH	16.75 °C	1,961.2 µS/cm	0.96 mg/L	2.41 NTU	228.3 mV	299.92 cm	100.00 ml/min
10/2/2024 9:28 AM	10:00	6.69 pH	16.83 °C	1,949.4 µS/cm	1.31 mg/L	1.55 NTU	227.8 mV	299.92 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 10/2/2024 9:18:47 AM
Project: OW-114B
Operator Name:

Location Name: OW-114B
Initial Depth to Water: 9.84 ft

Estimated Total Volume Pumped: 1000 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
10/2/2024 9:18 AM	00:00	6.71 pH	17.39 °C	1,988.3 µS/cm	3.77 mg/L	11.16 NTU	224.4 mV	299.92 cm	100.00 ml/min
10/2/2024 9:19 AM	01:00	6.68 pH	17.01 °C	1,990.5 µS/cm	2.21 mg/L	6.80 NTU	226.7 mV	299.92 cm	100.00 ml/min
10/2/2024 9:20 AM	02:00	6.66 pH	16.76 °C	1,995.2 µS/cm	1.39 mg/L	8.14 NTU	227.4 mV	299.92 cm	100.00 ml/min
10/2/2024 9:21 AM	03:00	6.65 pH	16.69 °C	1,995.8 µS/cm	0.94 mg/L	4.06 NTU	228.0 mV	299.92 cm	100.00 ml/min
10/2/2024 9:22 AM	04:00	6.65 pH	16.71 °C	1,992.8 µS/cm	0.74 mg/L	3.29 NTU	228.4 mV	299.92 cm	100.00 ml/min
10/2/2024 9:23 AM	05:00	6.65 pH	16.77 °C	1,992.1 µS/cm	0.62 mg/L	2.59 NTU	228.7 mV	299.92 cm	100.00 ml/min
10/2/2024 9:24 AM	06:00	6.64 pH	16.82 °C	1,990.4 µS/cm	0.54 mg/L	2.89 NTU	229.0 mV	299.92 cm	100.00 ml/min
10/2/2024 9:25 AM	07:00	6.65 pH	16.81 °C	1,984.1 µS/cm	0.52 mg/L	1.99 NTU	229.1 mV	299.92 cm	100.00 ml/min
10/2/2024 9:26 AM	08:00	6.66 pH	16.72 °C	1,976.3 µS/cm	0.65 mg/L	2.21 NTU	228.9 mV	299.92 cm	100.00 ml/min
10/2/2024 9:27 AM	09:00	6.67 pH	16.75 °C	1,961.2 µS/cm	0.96 mg/L	2.41 NTU	228.3 mV	299.92 cm	100.00 ml/min
10/2/2024 9:28 AM	10:00	6.69 pH	16.83 °C	1,949.4 µS/cm	1.31 mg/L	1.55 NTU	227.8 mV	299.92 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 10/2/2024 9:18:47 AM
Project: OW-114B
Operator Name:

Location Name: OW-114B
Initial Depth to Water: 9.84 ft

Estimated Total Volume Pumped: 1000 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
10/2/2024 9:18 AM	00:00	6.71 pH	17.39 °C	1,988.3 µS/cm	3.77 mg/L	11.16 NTU	224.4 mV	299.92 cm	100.00 ml/min
10/2/2024 9:19 AM	01:00	6.68 pH	17.01 °C	1,990.5 µS/cm	2.21 mg/L	6.80 NTU	226.7 mV	299.92 cm	100.00 ml/min
10/2/2024 9:20 AM	02:00	6.66 pH	16.76 °C	1,995.2 µS/cm	1.39 mg/L	8.14 NTU	227.4 mV	299.92 cm	100.00 ml/min
10/2/2024 9:21 AM	03:00	6.65 pH	16.69 °C	1,995.8 µS/cm	0.94 mg/L	4.06 NTU	228.0 mV	299.92 cm	100.00 ml/min
10/2/2024 9:22 AM	04:00	6.65 pH	16.71 °C	1,992.8 µS/cm	0.74 mg/L	3.29 NTU	228.4 mV	299.92 cm	100.00 ml/min
10/2/2024 9:23 AM	05:00	6.65 pH	16.77 °C	1,992.1 µS/cm	0.62 mg/L	2.59 NTU	228.7 mV	299.92 cm	100.00 ml/min
10/2/2024 9:24 AM	06:00	6.64 pH	16.82 °C	1,990.4 µS/cm	0.54 mg/L	2.89 NTU	229.0 mV	299.92 cm	100.00 ml/min
10/2/2024 9:25 AM	07:00	6.65 pH	16.81 °C	1,984.1 µS/cm	0.52 mg/L	1.99 NTU	229.1 mV	299.92 cm	100.00 ml/min
10/2/2024 9:26 AM	08:00	6.66 pH	16.72 °C	1,976.3 µS/cm	0.65 mg/L	2.21 NTU	228.9 mV	299.92 cm	100.00 ml/min
10/2/2024 9:27 AM	09:00	6.67 pH	16.75 °C	1,961.2 µS/cm	0.96 mg/L	2.41 NTU	228.3 mV	299.92 cm	100.00 ml/min
10/2/2024 9:28 AM	10:00	6.69 pH	16.83 °C	1,949.4 µS/cm	1.31 mg/L	1.55 NTU	227.8 mV	299.92 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 10/2/2024 10:12:52 AM
Project: OW-209B
Operator Name:

Location Name: OW-209B
Initial Depth to Water: 11.24 ft

Estimated Total Volume Pumped: 1100 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
10/2/2024 10:12 AM	00:00	7.06 pH	18.84 °C	1,300.4 µS/cm	4.74 mg/L	2.35 NTU	218.2 mV	342.60 cm	100.00 ml/min
10/2/2024 10:13 AM	01:00	6.92 pH	17.69 °C	1,269.7 µS/cm	2.86 mg/L	1.65 NTU	224.2 mV	342.60 cm	100.00 ml/min
10/2/2024 10:14 AM	02:00	6.88 pH	17.10 °C	1,250.3 µS/cm	1.97 mg/L	2.01 NTU	225.4 mV	342.60 cm	100.00 ml/min
10/2/2024 10:15 AM	03:00	6.87 pH	16.74 °C	1,230.8 µS/cm	1.71 mg/L	2.08 NTU	227.2 mV	342.60 cm	100.00 ml/min
10/2/2024 10:16 AM	04:00	6.87 pH	16.50 °C	1,232.3 µS/cm	1.77 mg/L	2.30 NTU	224.0 mV	342.60 cm	100.00 ml/min
10/2/2024 10:17 AM	05:00	6.89 pH	16.37 °C	1,230.7 µS/cm	2.05 mg/L	1.51 NTU	224.0 mV	342.60 cm	100.00 ml/min
10/2/2024 10:18 AM	06:00	6.92 pH	16.33 °C	1,224.4 µS/cm	2.49 mg/L	4.60 NTU	221.7 mV	342.60 cm	100.00 ml/min
10/2/2024 10:19 AM	07:00	6.97 pH	16.23 °C	1,217.9 µS/cm	3.22 mg/L	2.22 NTU	217.9 mV	342.60 cm	100.00 ml/min
10/2/2024 10:20 AM	08:00	7.03 pH	16.26 °C	1,209.4 µS/cm	4.27 mg/L	1.53 NTU	214.8 mV	342.60 cm	100.00 ml/min
10/2/2024 10:21 AM	09:00	7.08 pH	16.30 °C	1,204.6 µS/cm	5.27 mg/L	2.51 NTU	213.0 mV	342.60 cm	100.00 ml/min
10/2/2024 10:22 AM	10:00	7.11 pH	16.34 °C	1,201.1 µS/cm	6.02 mg/L	1.86 NTU	211.1 mV	342.60 cm	100.00 ml/min
10/2/2024 10:23 AM	11:00	7.13 pH	16.36 °C	1,200.9 µS/cm	6.51 mg/L	1.24 NTU	210.7 mV	342.60 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 10/2/2024 11:34:25 AM
Project: OW-212B
Operator Name:

Location Name: OW-212B
Initial Depth to Water: 12.87 ft

Estimated Total Volume Pumped: 1000 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
10/2/2024 11:34 AM	00:00	6.53 pH	21.98 °C	2,397.2 µS/cm	1.93 mg/L	1.50 NTU	250.8 mV	392.28 cm	100.00 ml/min
10/2/2024 11:35 AM	01:00	6.51 pH	21.49 °C	2,410.7 µS/cm	1.28 mg/L	1.50 NTU	251.4 mV	392.28 cm	100.00 ml/min
10/2/2024 11:36 AM	02:00	6.50 pH	21.17 °C	2,412.5 µS/cm	0.90 mg/L	2.04 NTU	251.4 mV	392.28 cm	100.00 ml/min
10/2/2024 11:37 AM	03:00	6.49 pH	20.85 °C	2,415.6 µS/cm	0.68 mg/L	2.92 NTU	251.1 mV	392.28 cm	100.00 ml/min
10/2/2024 11:38 AM	04:00	6.48 pH	20.60 °C	2,404.5 µS/cm	0.56 mg/L	2.86 NTU	250.9 mV	392.28 cm	100.00 ml/min
10/2/2024 11:39 AM	05:00	6.48 pH	20.48 °C	2,404.8 µS/cm	0.53 mg/L	3.36 NTU	250.3 mV	392.28 cm	100.00 ml/min
10/2/2024 11:40 AM	06:00	6.49 pH	20.42 °C	2,401.6 µS/cm	0.78 mg/L	3.37 NTU	249.1 mV	392.28 cm	100.00 ml/min
10/2/2024 11:41 AM	07:00	6.51 pH	20.33 °C	2,398.1 µS/cm	1.24 mg/L	3.80 NTU	247.8 mV	392.28 cm	100.00 ml/min
10/2/2024 11:42 AM	08:00	6.53 pH	20.30 °C	2,397.9 µS/cm	1.77 mg/L	3.47 NTU	246.6 mV	392.28 cm	100.00 ml/min
10/2/2024 11:43 AM	09:00	6.54 pH	20.40 °C	2,395.6 µS/cm	2.27 mg/L	3.53 NTU	245.4 mV	392.28 cm	100.00 ml/min
10/2/2024 11:44 AM	10:00	6.56 pH	20.56 °C	2,392.1 µS/cm	2.75 mg/L	4.68 NTU	244.0 mV	392.28 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 10/4/2024 9:00:42 AM
Project: OW-213BR
Operator Name:

Location Name: OW-213BR
Initial Depth to Water: 13.09 ft

Estimated Total Volume Pumped: 1000 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
10/4/2024 9:00 AM	00:00	6.66 pH	15.27 °C	1,613.6 µS/cm	4.58 mg/L	2.96 NTU	228.2 mV	398.98 cm	100.00 ml/min
10/4/2024 9:01 AM	01:00	6.61 pH	14.97 °C	1,599.7 µS/cm	2.70 mg/L	0.90 NTU	232.8 mV	398.98 cm	100.00 ml/min
10/4/2024 9:02 AM	02:00	6.58 pH	14.82 °C	1,593.6 µS/cm	1.68 mg/L	0.52 NTU	235.3 mV	398.98 cm	100.00 ml/min
10/4/2024 9:03 AM	03:00	6.56 pH	14.71 °C	1,591.0 µS/cm	1.12 mg/L	0.49 NTU	237.1 mV	398.98 cm	100.00 ml/min
10/4/2024 9:04 AM	04:00	6.54 pH	14.63 °C	1,587.7 µS/cm	0.84 mg/L	0.47 NTU	238.3 mV	398.98 cm	100.00 ml/min
10/4/2024 9:05 AM	05:00	6.53 pH	14.69 °C	1,585.2 µS/cm	0.66 mg/L	0.72 NTU	239.8 mV	398.98 cm	100.00 ml/min
10/4/2024 9:06 AM	06:00	6.52 pH	14.69 °C	1,583.6 µS/cm	0.54 mg/L	0.61 NTU	240.6 mV	398.98 cm	100.00 ml/min
10/4/2024 9:07 AM	07:00	6.51 pH	14.67 °C	1,581.2 µS/cm	0.46 mg/L	0.44 NTU	241.9 mV	398.98 cm	100.00 ml/min
10/4/2024 9:08 AM	08:00	6.50 pH	14.64 °C	1,577.9 µS/cm	0.47 mg/L	0.42 NTU	242.6 mV	398.98 cm	100.00 ml/min
10/4/2024 9:09 AM	09:00	6.50 pH	14.66 °C	1,571.1 µS/cm	0.71 mg/L	0.48 NTU	242.8 mV	398.98 cm	100.00 ml/min
10/4/2024 9:10 AM	10:00	6.51 pH	14.70 °C	1,563.9 µS/cm	1.19 mg/L	0.62 NTU	242.6 mV	398.98 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 10/4/2024 9:45:42 AM
Project: OW-219B
Operator Name:

Location Name: OW-219B
Initial Depth to Water: 9.09 ft

Estimated Total Volume Pumped: 1000 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
10/4/2024 9:45 AM	00:00	6.66 pH	17.34 °C	1,389.4 µS/cm	4.13 mg/L	8.58 NTU	242.9 mV	277.06 cm	100.00 ml/min
10/4/2024 9:46 AM	01:00	6.63 pH	17.16 °C	1,385.5 µS/cm	2.10 mg/L	5.02 NTU	247.1 mV	277.06 cm	100.00 ml/min
10/4/2024 9:47 AM	02:00	6.61 pH	17.15 °C	1,382.0 µS/cm	1.18 mg/L	5.03 NTU	248.9 mV	277.06 cm	100.00 ml/min
10/4/2024 9:48 AM	03:00	6.60 pH	17.13 °C	1,381.5 µS/cm	0.76 mg/L	6.05 NTU	249.9 mV	277.06 cm	100.00 ml/min
10/4/2024 9:49 AM	04:00	6.60 pH	17.22 °C	1,378.3 µS/cm	0.53 mg/L	4.00 NTU	250.4 mV	277.06 cm	100.00 ml/min
10/4/2024 9:50 AM	05:00	6.59 pH	17.24 °C	1,378.2 µS/cm	0.44 mg/L	4.27 NTU	250.7 mV	277.06 cm	100.00 ml/min
10/4/2024 9:51 AM	06:00	6.60 pH	17.20 °C	1,378.1 µS/cm	0.50 mg/L	5.10 NTU	250.8 mV	277.06 cm	100.00 ml/min
10/4/2024 9:52 AM	07:00	6.61 pH	17.22 °C	1,375.7 µS/cm	0.77 mg/L	6.08 NTU	250.3 mV	277.06 cm	100.00 ml/min
10/4/2024 9:53 AM	08:00	6.63 pH	17.32 °C	1,371.7 µS/cm	1.35 mg/L	4.79 NTU	249.0 mV	277.06 cm	100.00 ml/min
10/4/2024 9:54 AM	09:00	6.66 pH	17.45 °C	1,367.3 µS/cm	2.11 mg/L	4.97 NTU	247.5 mV	277.06 cm	100.00 ml/min
10/4/2024 9:55 AM	10:00	6.69 pH	17.48 °C	1,364.1 µS/cm	2.99 mg/L	5.01 NTU	245.5 mV	277.06 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 10/4/2024 10:38:39 AM
Project: OW-220B
Operator Name:

Location Name: OW-220B
Initial Depth to Water: 15.22 ft

Estimated Total Volume Pumped: 1000 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
10/4/2024 10:38 AM	00:00	6.60 pH	19.16 °C	4,716.8 µS/cm	3.82 mg/L	15.04 NTU	278.9 mV	463.91 cm	100.00 ml/min
10/4/2024 10:39 AM	01:00	6.61 pH	18.10 °C	4,878.3 µS/cm	1.95 mg/L	11.92 NTU	273.7 mV	463.91 cm	100.00 ml/min
10/4/2024 10:40 AM	02:00	6.61 pH	17.63 °C	4,896.6 µS/cm	1.07 mg/L	10.93 NTU	268.0 mV	463.91 cm	100.00 ml/min
10/4/2024 10:41 AM	03:00	6.61 pH	17.35 °C	4,878.6 µS/cm	0.65 mg/L	8.76 NTU	261.8 mV	463.91 cm	100.00 ml/min
10/4/2024 10:42 AM	04:00	6.60 pH	17.17 °C	4,843.7 µS/cm	0.44 mg/L	8.65 NTU	256.1 mV	463.91 cm	100.00 ml/min
10/4/2024 10:43 AM	05:00	6.60 pH	17.03 °C	4,836.0 µS/cm	0.32 mg/L	9.08 NTU	250.2 mV	463.91 cm	100.00 ml/min
10/4/2024 10:44 AM	06:00	6.59 pH	16.95 °C	4,830.2 µS/cm	0.27 mg/L	8.19 NTU	244.6 mV	463.91 cm	100.00 ml/min
10/4/2024 10:45 AM	07:00	6.59 pH	16.89 °C	4,821.7 µS/cm	0.23 mg/L	8.38 NTU	239.1 mV	463.91 cm	100.00 ml/min
10/4/2024 10:46 AM	08:00	6.58 pH	16.88 °C	4,816.0 µS/cm	0.21 mg/L	9.53 NTU	233.8 mV	463.91 cm	100.00 ml/min
10/4/2024 10:47 AM	09:00	6.58 pH	16.89 °C	4,815.3 µS/cm	0.20 mg/L	9.27 NTU	228.6 mV	463.91 cm	100.00 ml/min
10/4/2024 10:48 AM	10:00	6.57 pH	16.87 °C	4,813.8 µS/cm	0.19 mg/L	8.22 NTU	223.5 mV	463.91 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 10/4/2024 10:38:39 AM
Project: OW-220B
Operator Name:

Location Name: OW-220B
Initial Depth to Water: 15.22 ft

Estimated Total Volume Pumped: 1000 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
10/4/2024 10:38 AM	00:00	6.60 pH	19.16 °C	4,716.8 µS/cm	3.82 mg/L	15.04 NTU	278.9 mV	463.91 cm	100.00 ml/min
10/4/2024 10:39 AM	01:00	6.61 pH	18.10 °C	4,878.3 µS/cm	1.95 mg/L	11.92 NTU	273.7 mV	463.91 cm	100.00 ml/min
10/4/2024 10:40 AM	02:00	6.61 pH	17.63 °C	4,896.6 µS/cm	1.07 mg/L	10.93 NTU	268.0 mV	463.91 cm	100.00 ml/min
10/4/2024 10:41 AM	03:00	6.61 pH	17.35 °C	4,878.6 µS/cm	0.65 mg/L	8.76 NTU	261.8 mV	463.91 cm	100.00 ml/min
10/4/2024 10:42 AM	04:00	6.60 pH	17.17 °C	4,843.7 µS/cm	0.44 mg/L	8.65 NTU	256.1 mV	463.91 cm	100.00 ml/min
10/4/2024 10:43 AM	05:00	6.60 pH	17.03 °C	4,836.0 µS/cm	0.32 mg/L	9.08 NTU	250.2 mV	463.91 cm	100.00 ml/min
10/4/2024 10:44 AM	06:00	6.59 pH	16.95 °C	4,830.2 µS/cm	0.27 mg/L	8.19 NTU	244.6 mV	463.91 cm	100.00 ml/min
10/4/2024 10:45 AM	07:00	6.59 pH	16.89 °C	4,821.7 µS/cm	0.23 mg/L	8.38 NTU	239.1 mV	463.91 cm	100.00 ml/min
10/4/2024 10:46 AM	08:00	6.58 pH	16.88 °C	4,816.0 µS/cm	0.21 mg/L	9.53 NTU	233.8 mV	463.91 cm	100.00 ml/min
10/4/2024 10:47 AM	09:00	6.58 pH	16.89 °C	4,815.3 µS/cm	0.20 mg/L	9.27 NTU	228.6 mV	463.91 cm	100.00 ml/min
10/4/2024 10:48 AM	10:00	6.57 pH	16.87 °C	4,813.8 µS/cm	0.19 mg/L	8.22 NTU	223.5 mV	463.91 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 10/7/2024 9:11:44 AM
Project: OW-221B
Operator Name:

Location Name: OW-221B
Initial Depth to Water: 17.49 ft

Estimated Total Volume Pumped: 1200 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
10/7/2024 9:11 AM	00:00	6.67 pH	14.88 °C	1,024.5 µS/cm	3.61 mg/L	21.58 NTU	229.6 mV	533.10 cm	100.00 ml/min
10/7/2024 9:12 AM	01:00	6.61 pH	14.22 °C	973.95 µS/cm	2.63 mg/L	14.29 NTU	232.7 mV	533.10 cm	100.00 ml/min
10/7/2024 9:13 AM	02:00	6.55 pH	14.05 °C	965.61 µS/cm	2.03 mg/L	10.95 NTU	236.5 mV	533.10 cm	100.00 ml/min
10/7/2024 9:14 AM	03:00	6.49 pH	13.71 °C	942.11 µS/cm	1.57 mg/L	10.28 NTU	238.9 mV	533.10 cm	100.00 ml/min
10/7/2024 9:15 AM	04:00	6.44 pH	13.70 °C	915.23 µS/cm	1.24 mg/L	8.98 NTU	241.7 mV	533.10 cm	100.00 ml/min
10/7/2024 9:16 AM	05:00	6.39 pH	13.67 °C	885.73 µS/cm	1.04 mg/L	9.39 NTU	243.5 mV	533.10 cm	100.00 ml/min
10/7/2024 9:17 AM	06:00	6.36 pH	13.81 °C	877.82 µS/cm	1.15 mg/L	11.33 NTU	243.6 mV	533.10 cm	100.00 ml/min
10/7/2024 9:18 AM	07:00	6.36 pH	13.87 °C	869.19 µS/cm	1.62 mg/L	13.12 NTU	243.0 mV	533.10 cm	100.00 ml/min
10/7/2024 9:19 AM	08:00	6.36 pH	13.91 °C	863.32 µS/cm	2.21 mg/L	13.07 NTU	242.1 mV	533.10 cm	100.00 ml/min
10/7/2024 9:20 AM	09:00	6.37 pH	13.93 °C	858.23 µS/cm	2.77 mg/L	13.13 NTU	241.2 mV	533.10 cm	100.00 ml/min
10/7/2024 9:21 AM	10:00	6.38 pH	14.08 °C	861.92 µS/cm	3.23 mg/L	11.79 NTU	240.4 mV	533.10 cm	100.00 ml/min
10/7/2024 9:22 AM	11:00	6.38 pH	14.00 °C	860.97 µS/cm	3.64 mg/L	12.01 NTU	239.9 mV	533.10 cm	100.00 ml/min
10/7/2024 9:23 AM	12:00	6.40 pH	14.03 °C	861.94 µS/cm	3.97 mg/L	11.65 NTU	238.3 mV	533.10 cm	100.00 ml/min

Samples

Sample ID:	Description:

Created using VuSitu from In-Situ, Inc.

Low-Flow Test Report:

Test Date / Time: 10/7/2024 9:59:35 AM
Project: OW-222B
Operator Name:

Location Name: OW-222B
Initial Depth to Water: 17.86 ft

Estimated Total Volume Pumped: 1000 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
10/7/2024 9:59 AM	00:00	6.48 pH	18.01 °C	1,512.8 µS/cm	4.07 mg/L	2.57 NTU	194.8 mV	544.37 cm	100.00 ml/min
10/7/2024 10:00 AM	01:00	6.47 pH	17.56 °C	1,524.1 µS/cm	2.65 mg/L	1.75 NTU	192.2 mV	544.37 cm	100.00 ml/min
10/7/2024 10:01 AM	02:00	6.45 pH	17.04 °C	1,528.4 µS/cm	1.85 mg/L	1.48 NTU	189.6 mV	544.37 cm	100.00 ml/min
10/7/2024 10:02 AM	03:00	6.44 pH	16.50 °C	1,531.6 µS/cm	1.38 mg/L	1.43 NTU	187.8 mV	544.37 cm	100.00 ml/min
10/7/2024 10:03 AM	04:00	6.43 pH	16.41 °C	1,533.2 µS/cm	1.09 mg/L	1.36 NTU	186.0 mV	544.37 cm	100.00 ml/min
10/7/2024 10:04 AM	05:00	6.43 pH	16.41 °C	1,534.0 µS/cm	0.90 mg/L	1.51 NTU	184.2 mV	544.37 cm	100.00 ml/min
10/7/2024 10:05 AM	06:00	6.42 pH	16.51 °C	1,533.8 µS/cm	0.80 mg/L	1.94 NTU	182.5 mV	544.37 cm	100.00 ml/min
10/7/2024 10:06 AM	07:00	6.42 pH	16.27 °C	1,533.5 µS/cm	0.79 mg/L	1.86 NTU	180.7 mV	544.37 cm	100.00 ml/min
10/7/2024 10:07 AM	08:00	6.44 pH	16.21 °C	1,530.7 µS/cm	1.01 mg/L	2.90 NTU	178.1 mV	544.37 cm	100.00 ml/min
10/7/2024 10:08 AM	09:00	6.47 pH	16.19 °C	1,533.3 µS/cm	1.52 mg/L	4.91 NTU	175.0 mV	544.37 cm	100.00 ml/min
10/7/2024 10:09 AM	10:00	6.50 pH	16.20 °C	1,532.0 µS/cm	2.22 mg/L	5.59 NTU	171.2 mV	544.37 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 10/7/2024 10:50:30 AM
Project: OW-224B
Operator Name:

Location Name: OW-224B
Initial Depth to Water: 13.19 ft

Estimated Total Volume Pumped: 1000 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
10/7/2024 10:50 AM	00:00	6.57 pH	16.34 °C	4,418.8 µS/cm	2.31 mg/L	2.69 NTU	155.6 mV	402.03 cm	100.00 ml/min
10/7/2024 10:51 AM	01:00	6.59 pH	15.93 °C	4,488.6 µS/cm	1.40 mg/L	3.40 NTU	151.7 mV	402.03 cm	100.00 ml/min
10/7/2024 10:52 AM	02:00	6.59 pH	15.68 °C	4,509.1 µS/cm	0.89 mg/L	6.43 NTU	148.3 mV	402.03 cm	100.00 ml/min
10/7/2024 10:53 AM	03:00	6.59 pH	15.52 °C	4,509.1 µS/cm	0.60 mg/L	7.89 NTU	145.1 mV	402.03 cm	100.00 ml/min
10/7/2024 10:54 AM	04:00	6.59 pH	15.52 °C	4,502.3 µS/cm	0.45 mg/L	10.85 NTU	142.0 mV	402.03 cm	100.00 ml/min
10/7/2024 10:55 AM	05:00	6.60 pH	15.44 °C	4,520.2 µS/cm	0.40 mg/L	13.37 NTU	138.8 mV	402.03 cm	100.00 ml/min
10/7/2024 10:56 AM	06:00	6.62 pH	15.26 °C	4,523.6 µS/cm	0.50 mg/L	14.50 NTU	135.8 mV	402.03 cm	100.00 ml/min
10/7/2024 10:57 AM	07:00	6.64 pH	15.16 °C	4,530.5 µS/cm	0.76 mg/L	9.85 NTU	132.9 mV	402.03 cm	100.00 ml/min
10/7/2024 10:58 AM	08:00	6.66 pH	15.08 °C	4,527.6 µS/cm	1.14 mg/L	13.34 NTU	130.3 mV	402.03 cm	100.00 ml/min
10/7/2024 10:59 AM	09:00	6.69 pH	15.03 °C	4,543.5 µS/cm	1.60 mg/L	16.18 NTU	128.0 mV	402.03 cm	100.00 ml/min
10/7/2024 11:00 AM	10:00	6.72 pH	14.93 °C	4,552.0 µS/cm	2.04 mg/L	22.29 NTU	125.9 mV	402.03 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 10/8/2024 10:05:34 AM
Project: OW-225B
Operator Name:

Location Name: OW-225B
Initial Depth to Water: 12.16 ft

Estimated Total Volume Pumped: 1000 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
10/8/2024 10:05 AM	00:00	6.28 pH	14.29 °C	5,489.6 µS/cm	3.35 mg/L	6.80 NTU	266.1 mV	370.64 cm	100.00 ml/min
10/8/2024 10:06 AM	01:00	6.23 pH	14.56 °C	5,461.1 µS/cm	2.07 mg/L	3.26 NTU	267.7 mV	370.64 cm	100.00 ml/min
10/8/2024 10:07 AM	02:00	6.20 pH	14.67 °C	5,413.4 µS/cm	1.28 mg/L	3.70 NTU	268.5 mV	370.64 cm	100.00 ml/min
10/8/2024 10:08 AM	03:00	6.19 pH	14.79 °C	5,379.4 µS/cm	0.87 mg/L	2.97 NTU	268.8 mV	370.64 cm	100.00 ml/min
10/8/2024 10:09 AM	04:00	6.19 pH	14.90 °C	5,352.3 µS/cm	0.70 mg/L	5.70 NTU	268.7 mV	370.64 cm	100.00 ml/min
10/8/2024 10:10 AM	05:00	6.20 pH	15.01 °C	5,330.1 µS/cm	0.83 mg/L	8.14 NTU	268.0 mV	370.64 cm	100.00 ml/min
10/8/2024 10:11 AM	06:00	6.22 pH	15.05 °C	5,314.4 µS/cm	1.29 mg/L	11.27 NTU	267.2 mV	370.64 cm	100.00 ml/min
10/8/2024 10:12 AM	07:00	6.26 pH	15.09 °C	5,295.9 µS/cm	1.97 mg/L	12.61 NTU	266.1 mV	370.64 cm	100.00 ml/min
10/8/2024 10:13 AM	08:00	6.29 pH	15.16 °C	5,296.4 µS/cm	2.67 mg/L	13.70 NTU	264.9 mV	370.64 cm	100.00 ml/min
10/8/2024 10:14 AM	09:00	6.32 pH	15.21 °C	5,293.4 µS/cm	3.36 mg/L	17.71 NTU	263.8 mV	370.64 cm	100.00 ml/min
10/8/2024 10:15 AM	10:00	6.35 pH	15.25 °C	5,294.9 µS/cm	3.94 mg/L	19.72 NTU	262.8 mV	370.64 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 10/8/2024 11:42:41 AM
Project: OW-223B
Operator Name:

Location Name: OW-223B
Initial Depth to Water: 17.59 ft

Estimated Total Volume Pumped: 1000 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
10/8/2024 11:42 AM	00:00	6.64 pH	22.08 °C	1,599.5 µS/cm	3.51 mg/L	1.09 NTU	134.1 mV	536.14 cm	100.00 ml/min
10/8/2024 11:43 AM	01:00	6.55 pH	21.90 °C	1,582.3 µS/cm	2.91 mg/L	0.79 NTU	143.2 mV	536.14 cm	100.00 ml/min
10/8/2024 11:44 AM	02:00	6.49 pH	21.78 °C	1,545.2 µS/cm	2.64 mg/L	0.79 NTU	147.3 mV	536.14 cm	100.00 ml/min
10/8/2024 11:45 AM	03:00	6.46 pH	21.67 °C	1,521.9 µS/cm	2.55 mg/L	0.79 NTU	150.8 mV	536.14 cm	100.00 ml/min
10/8/2024 11:46 AM	04:00	6.44 pH	21.56 °C	1,513.8 µS/cm	2.54 mg/L	1.28 NTU	152.7 mV	536.14 cm	100.00 ml/min
10/8/2024 11:47 AM	05:00	6.43 pH	21.54 °C	1,508.0 µS/cm	2.55 mg/L	0.84 NTU	154.8 mV	536.14 cm	100.00 ml/min
10/8/2024 11:48 AM	06:00	6.43 pH	21.58 °C	1,501.7 µS/cm	2.62 mg/L	0.90 NTU	155.2 mV	536.14 cm	100.00 ml/min
10/8/2024 11:49 AM	07:00	6.43 pH	21.56 °C	1,499.6 µS/cm	2.74 mg/L	0.97 NTU	156.2 mV	536.14 cm	100.00 ml/min
10/8/2024 11:50 AM	08:00	6.44 pH	21.49 °C	1,494.3 µS/cm	2.90 mg/L	1.01 NTU	156.6 mV	536.14 cm	100.00 ml/min
10/8/2024 11:51 AM	09:00	6.44 pH	21.48 °C	1,489.4 µS/cm	3.07 mg/L	1.08 NTU	157.3 mV	536.14 cm	100.00 ml/min
10/8/2024 11:52 AM	10:00	6.44 pH	21.54 °C	1,485.8 µS/cm	3.18 mg/L	0.99 NTU	157.7 mV	536.14 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 10/9/2024 10:19:50 AM
Project: OW-226B
Operator Name:

Location Name: OW-226B
Initial Depth to Water: 12.83 ft

Estimated Total Volume Pumped: 1000 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
10/9/2024 10:19 AM	00:00	6.83 pH	16.84 °C	7,733.7 µS/cm	2.39 mg/L	8.53 NTU	209.4 mV	391.06 cm	100.00 ml/min
10/9/2024 10:20 AM	01:00	6.84 pH	16.64 °C	7,739.5 µS/cm	1.51 mg/L	9.74 NTU	212.0 mV	391.06 cm	100.00 ml/min
10/9/2024 10:21 AM	02:00	6.84 pH	16.51 °C	7,720.6 µS/cm	1.02 mg/L	10.43 NTU	213.8 mV	391.06 cm	100.00 ml/min
10/9/2024 10:22 AM	03:00	6.84 pH	16.43 °C	7,699.4 µS/cm	0.78 mg/L	9.42 NTU	215.4 mV	391.06 cm	100.00 ml/min
10/9/2024 10:23 AM	04:00	6.84 pH	16.35 °C	7,677.7 µS/cm	0.62 mg/L	9.69 NTU	216.6 mV	391.06 cm	100.00 ml/min
10/9/2024 10:24 AM	05:00	6.84 pH	16.34 °C	7,648.8 µS/cm	0.48 mg/L	9.77 NTU	217.6 mV	391.06 cm	100.00 ml/min
10/9/2024 10:25 AM	06:00	6.84 pH	16.39 °C	7,624.2 µS/cm	0.40 mg/L	12.79 NTU	218.4 mV	391.06 cm	100.00 ml/min
10/9/2024 10:26 AM	07:00	6.83 pH	16.46 °C	7,513.7 µS/cm	0.40 mg/L	20.65 NTU	218.7 mV	391.06 cm	100.00 ml/min
10/9/2024 10:27 AM	08:00	6.84 pH	16.49 °C	7,309.6 µS/cm	0.62 mg/L	25.85 NTU	218.4 mV	391.06 cm	100.00 ml/min
10/9/2024 10:28 AM	09:00	6.86 pH	16.52 °C	7,168.1 µS/cm	1.21 mg/L	34.71 NTU	218.4 mV	391.06 cm	100.00 ml/min
10/9/2024 10:29 AM	10:00	6.89 pH	16.50 °C	7,117.3 µS/cm	1.74 mg/L	37.92 NTU	219.1 mV	391.06 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 10/9/2024 11:43:13 AM
Project: OW-227B
Operator Name:

Location Name: OW-227B
Initial Depth to Water: 10.09 ft

Estimated Total Volume Pumped: 1100 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
10/9/2024 11:43 AM	00:00	6.70 pH	21.22 °C	6,426.8 µS/cm	3.84 mg/L	14.61 NTU	199.9 mV	307.54 cm	100.00 ml/min
10/9/2024 11:44 AM	01:00	6.60 pH	20.24 °C	6,132.1 µS/cm	2.15 mg/L	13.09 NTU	205.3 mV	307.54 cm	100.00 ml/min
10/9/2024 11:45 AM	02:00	6.57 pH	19.77 °C	5,963.1 µS/cm	1.25 mg/L	5.93 NTU	206.8 mV	307.54 cm	100.00 ml/min
10/9/2024 11:46 AM	03:00	6.56 pH	19.41 °C	5,852.2 µS/cm	0.76 mg/L	4.18 NTU	206.9 mV	307.54 cm	100.00 ml/min
10/9/2024 11:47 AM	04:00	6.56 pH	19.12 °C	5,777.8 µS/cm	0.50 mg/L	5.20 NTU	206.4 mV	307.54 cm	100.00 ml/min
10/9/2024 11:48 AM	05:00	6.55 pH	18.97 °C	5,717.1 µS/cm	0.36 mg/L	4.58 NTU	205.6 mV	307.54 cm	100.00 ml/min
10/9/2024 11:49 AM	06:00	6.55 pH	18.86 °C	5,668.5 µS/cm	0.28 mg/L	2.65 NTU	204.5 mV	307.54 cm	100.00 ml/min
10/9/2024 11:50 AM	07:00	6.55 pH	18.86 °C	5,624.7 µS/cm	0.25 mg/L	3.22 NTU	203.4 mV	307.54 cm	100.00 ml/min
10/9/2024 11:51 AM	08:00	6.56 pH	18.93 °C	5,572.2 µS/cm	0.30 mg/L	4.47 NTU	202.0 mV	307.54 cm	100.00 ml/min
10/9/2024 11:52 AM	09:00	6.56 pH	19.08 °C	5,527.8 µS/cm	0.50 mg/L	5.66 NTU	200.4 mV	307.54 cm	100.00 ml/min
10/9/2024 11:53 AM	10:00	6.58 pH	19.06 °C	5,483.1 µS/cm	0.82 mg/L	6.13 NTU	199.0 mV	307.54 cm	100.00 ml/min
10/9/2024 11:54 AM	11:00	6.59 pH	19.04 °C	5,477.1 µS/cm	1.13 mg/L	6.55 NTU	198.0 mV	307.54 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 10/15/2024 9:48:36 AM
Project: MW-319B
Operator Name:

Location Name: MW-319B
Initial Depth to Water: 9.5 ft

Estimated Total Volume Pumped: 1000 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
10/15/2024 9:48 AM	00:00	7.46 pH	13.14 °C	1,083.3 µS/cm	8.33 mg/L	3.96 NTU	190.8 mV	289.56 cm	100.00 ml/min
10/15/2024 9:49 AM	01:00	7.38 pH	13.09 °C	1,047.2 µS/cm	7.77 mg/L	1.39 NTU	193.1 mV	289.56 cm	100.00 ml/min
10/15/2024 9:50 AM	02:00	7.30 pH	13.10 °C	1,028.9 µS/cm	7.53 mg/L	1.24 NTU	196.6 mV	289.56 cm	100.00 ml/min
10/15/2024 9:51 AM	03:00	7.24 pH	13.18 °C	1,016.9 µS/cm	7.50 mg/L	1.05 NTU	199.3 mV	289.56 cm	100.00 ml/min
10/15/2024 9:52 AM	04:00	7.20 pH	13.23 °C	1,008.6 µS/cm	7.54 mg/L	1.51 NTU	201.2 mV	289.56 cm	100.00 ml/min
10/15/2024 9:53 AM	05:00	7.16 pH	13.19 °C	999.58 µS/cm	7.64 mg/L	1.60 NTU	203.6 mV	289.56 cm	100.00 ml/min
10/15/2024 9:54 AM	06:00	7.13 pH	13.18 °C	997.72 µS/cm	7.74 mg/L	1.19 NTU	205.6 mV	289.56 cm	100.00 ml/min
10/15/2024 9:55 AM	07:00	7.11 pH	13.19 °C	992.99 µS/cm	7.81 mg/L	1.60 NTU	207.5 mV	289.56 cm	100.00 ml/min
10/15/2024 9:56 AM	08:00	7.10 pH	13.23 °C	987.76 µS/cm	7.92 mg/L	1.40 NTU	208.3 mV	289.56 cm	100.00 ml/min
10/15/2024 9:57 AM	09:00	7.10 pH	13.25 °C	983.37 µS/cm	8.05 mg/L	1.57 NTU	209.2 mV	289.56 cm	100.00 ml/min
10/15/2024 9:58 AM	10:00	7.10 pH	13.26 °C	982.21 µS/cm	8.18 mg/L	1.94 NTU	209.9 mV	289.56 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 10/15/2024 10:26:17 AM
Project: MW-320B
Operator Name:

Location Name: MW-320B
Initial Depth to Water: 6.97 ft

Estimated Total Volume Pumped: 1000 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
10/15/2024 10:26 AM	00:00	7.06 pH	15.08 °C	1,236.2 µS/cm	6.33 mg/L	25.61 NTU	222.7 mV	212.45 cm	100.00 ml/min
10/15/2024 10:27 AM	01:00	6.96 pH	15.30 °C	1,244.9 µS/cm	3.96 mg/L	21.68 NTU	227.9 mV	212.45 cm	100.00 ml/min
10/15/2024 10:28 AM	02:00	6.91 pH	15.36 °C	1,245.6 µS/cm	2.53 mg/L	20.72 NTU	230.1 mV	212.45 cm	100.00 ml/min
10/15/2024 10:29 AM	03:00	6.88 pH	15.41 °C	1,242.6 µS/cm	1.72 mg/L	18.95 NTU	231.6 mV	212.45 cm	100.00 ml/min
10/15/2024 10:30 AM	04:00	6.85 pH	15.67 °C	1,239.3 µS/cm	1.27 mg/L	20.21 NTU	232.4 mV	212.45 cm	100.00 ml/min
10/15/2024 10:31 AM	05:00	6.83 pH	15.94 °C	1,235.6 µS/cm	1.01 mg/L	13.99 NTU	233.0 mV	212.45 cm	100.00 ml/min
10/15/2024 10:32 AM	06:00	6.82 pH	16.01 °C	1,233.0 µS/cm	0.85 mg/L	16.65 NTU	233.5 mV	212.45 cm	100.00 ml/min
10/15/2024 10:33 AM	07:00	6.82 pH	16.05 °C	1,232.5 µS/cm	0.86 mg/L	11.88 NTU	233.3 mV	212.45 cm	100.00 ml/min
10/15/2024 10:34 AM	08:00	6.83 pH	16.07 °C	1,224.2 µS/cm	1.10 mg/L	13.11 NTU	233.0 mV	212.45 cm	100.00 ml/min
10/15/2024 10:35 AM	09:00	6.85 pH	15.93 °C	1,208.2 µS/cm	1.54 mg/L	9.68 NTU	232.5 mV	212.45 cm	100.00 ml/min
10/15/2024 10:36 AM	10:00	6.86 pH	15.85 °C	1,204.7 µS/cm	2.05 mg/L	10.84 NTU	232.0 mV	212.45 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 10/15/2024 11:08:41 AM
Project: OW-401B
Operator Name:

Location Name: OW-401B
Initial Depth to Water: 24.61 ft

Estimated Total Volume Pumped: 2100 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
10/15/2024 11:08 AM	00:00	6.27 pH	13.89 °C	3,972.7 µS/cm	2.04 mg/L	1.49 NTU	273.8 mV	750.11 cm	100.00 ml/min
10/15/2024 11:09 AM	01:00	6.27 pH	13.70 °C	3,951.5 µS/cm	1.62 mg/L	1.26 NTU	272.4 mV	750.11 cm	100.00 ml/min
10/15/2024 11:10 AM	02:00	6.27 pH	13.62 °C	3,930.3 µS/cm	1.41 mg/L	1.51 NTU	270.9 mV	750.11 cm	100.00 ml/min
10/15/2024 11:11 AM	03:00	6.27 pH	13.61 °C	3,913.7 µS/cm	1.30 mg/L	1.31 NTU	269.2 mV	750.11 cm	100.00 ml/min
10/15/2024 11:12 AM	04:00	6.26 pH	13.60 °C	3,893.3 µS/cm	1.13 mg/L	1.77 NTU	267.6 mV	750.11 cm	100.00 ml/min
10/15/2024 11:13 AM	05:00	6.26 pH	13.57 °C	3,889.1 µS/cm	0.97 mg/L	2.55 NTU	266.1 mV	750.11 cm	100.00 ml/min
10/15/2024 11:14 AM	06:00	6.27 pH	13.50 °C	3,880.8 µS/cm	0.87 mg/L	3.27 NTU	264.5 mV	750.11 cm	100.00 ml/min
10/15/2024 11:15 AM	07:00	6.27 pH	13.43 °C	3,877.1 µS/cm	0.90 mg/L	5.07 NTU	262.7 mV	750.11 cm	100.00 ml/min
10/15/2024 11:16 AM	08:00	6.28 pH	13.38 °C	3,871.3 µS/cm	1.05 mg/L	7.04 NTU	261.0 mV	750.11 cm	100.00 ml/min
10/15/2024 11:17 AM	09:00	6.30 pH	13.34 °C	3,869.5 µS/cm	1.30 mg/L	8.48 NTU	259.3 mV	750.11 cm	100.00 ml/min
10/15/2024 11:18 AM	10:00	6.31 pH	13.38 °C	3,863.5 µS/cm	1.56 mg/L	8.38 NTU	257.8 mV	750.11 cm	100.00 ml/min
10/15/2024 11:19 AM	11:00	6.32 pH	13.38 °C	3,863.5 µS/cm	1.86 mg/L	9.91 NTU	256.2 mV	750.11 cm	100.00 ml/min
10/15/2024 11:20 AM	12:00	6.34 pH	13.26 °C	3,859.3 µS/cm	2.14 mg/L	10.20 NTU	254.8 mV	750.11 cm	100.00 ml/min
10/15/2024 11:21 AM	13:00	6.36 pH	13.10 °C	3,859.4 µS/cm	2.41 mg/L	11.65 NTU	253.7 mV	750.11 cm	100.00 ml/min
10/15/2024 11:22 AM	14:00	6.37 pH	13.10 °C	3,853.2 µS/cm	2.64 mg/L	11.94 NTU	252.6 mV	750.11 cm	100.00 ml/min
10/15/2024 11:23 AM	15:00	6.38 pH	13.08 °C	3,854.3 µS/cm	2.83 mg/L	13.24 NTU	251.7 mV	750.11 cm	100.00 ml/min
10/15/2024 11:24 AM	16:00	6.38 pH	13.20 °C	3,850.5 µS/cm	2.99 mg/L	14.06 NTU	250.7 mV	750.11 cm	100.00 ml/min

10/15/2024 11:25 AM	17:00	6.39 pH	13.27 °C	3,850.8 µS/cm	3.13 mg/L	13.17 NTU	249.8 mV	750.11 cm	100.00 ml/min
10/15/2024 11:26 AM	18:00	6.39 pH	13.68 °C	3,842.6 µS/cm	3.18 mg/L	11.86 NTU	248.8 mV	750.11 cm	100.00 ml/min
10/15/2024 11:27 AM	19:00	6.40 pH	14.11 °C	3,839.7 µS/cm	3.18 mg/L	12.33 NTU	247.8 mV	750.11 cm	100.00 ml/min
10/15/2024 11:28 AM	20:00	6.40 pH	14.48 °C	3,840.6 µS/cm	3.16 mg/L	11.77 NTU	247.1 mV	750.11 cm	100.00 ml/min
10/15/2024 11:29 AM	21:00	6.40 pH	14.78 °C	3,843.1 µS/cm	3.16 mg/L	12.29 NTU	246.4 mV	750.11 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 10/16/2024 8:54:34 AM
Project: OW-402B
Operator Name:

Location Name: OW-402B
Initial Depth to Water: 16.89 ft

Estimated Total Volume Pumped: 1300 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
10/16/2024 8:54 AM	00:00	6.50 pH	8.77 °C	3,899.6 µS/cm	6.73 mg/L	4.35 NTU	250.3 mV	514.81 cm	100.00 ml/min
10/16/2024 8:55 AM	01:00	6.25 pH	9.25 °C	3,792.8 µS/cm	4.48 mg/L	0.95 NTU	254.8 mV	514.81 cm	100.00 ml/min
10/16/2024 8:56 AM	02:00	6.13 pH	9.81 °C	3,692.0 µS/cm	2.98 mg/L	1.17 NTU	256.8 mV	514.81 cm	100.00 ml/min
10/16/2024 8:57 AM	03:00	6.06 pH	10.32 °C	3,634.0 µS/cm	2.01 mg/L	1.41 NTU	258.0 mV	514.81 cm	100.00 ml/min
10/16/2024 8:58 AM	04:00	6.03 pH	10.38 °C	3,606.0 µS/cm	1.43 mg/L	0.76 NTU	258.9 mV	514.81 cm	100.00 ml/min
10/16/2024 8:59 AM	05:00	6.00 pH	10.54 °C	3,602.0 µS/cm	1.08 mg/L	1.27 NTU	259.7 mV	514.81 cm	100.00 ml/min
10/16/2024 9:00 AM	06:00	5.97 pH	10.50 °C	3,643.4 µS/cm	0.85 mg/L	0.57 NTU	260.8 mV	514.81 cm	100.00 ml/min
10/16/2024 9:01 AM	07:00	5.96 pH	10.50 °C	3,711.1 µS/cm	0.69 mg/L	0.84 NTU	261.3 mV	514.81 cm	100.00 ml/min
10/16/2024 9:02 AM	08:00	5.94 pH	10.50 °C	3,767.7 µS/cm	0.58 mg/L	0.84 NTU	262.1 mV	514.81 cm	100.00 ml/min
10/16/2024 9:03 AM	09:00	5.94 pH	10.56 °C	3,800.2 µS/cm	0.52 mg/L	1.06 NTU	262.5 mV	514.81 cm	100.00 ml/min
10/16/2024 9:04 AM	10:00	5.93 pH	10.72 °C	3,819.8 µS/cm	0.48 mg/L	2.26 NTU	262.6 mV	514.81 cm	100.00 ml/min
10/16/2024 9:05 AM	11:00	5.93 pH	10.83 °C	3,834.4 µS/cm	0.44 mg/L	0.71 NTU	262.6 mV	514.81 cm	100.00 ml/min
10/16/2024 9:06 AM	12:00	5.93 pH	10.79 °C	3,847.7 µS/cm	0.42 mg/L	1.07 NTU	262.8 mV	514.81 cm	100.00 ml/min
10/16/2024 9:07 AM	13:00	5.92 pH	10.95 °C	3,853.1 µS/cm	0.41 mg/L	0.97 NTU	262.7 mV	514.81 cm	100.00 ml/min

Samples

Sample ID:	Description:

Created using VuSitu from In-Situ, Inc.

Low-Flow Test Report:

Test Date / Time: 10/16/2024 10:31:12 AM
Project: OW-413B
Operator Name:

Location Name: OW-413B
Initial Depth to Water: 11.61 ft

Estimated Total Volume Pumped: 1000 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
10/16/2024 10:31 AM	00:00	6.27 pH	13.83 °C	2,986.3 µS/cm	5.57 mg/L	3.67 NTU	243.7 mV	353.87 cm	100.00 ml/min
10/16/2024 10:32 AM	01:00	6.17 pH	13.83 °C	2,930.4 µS/cm	3.56 mg/L	2.26 NTU	245.5 mV	353.87 cm	100.00 ml/min
10/16/2024 10:33 AM	02:00	6.13 pH	13.73 °C	2,902.5 µS/cm	2.29 mg/L	3.25 NTU	246.0 mV	353.87 cm	100.00 ml/min
10/16/2024 10:34 AM	03:00	6.10 pH	13.72 °C	2,884.2 µS/cm	1.52 mg/L	2.33 NTU	245.7 mV	353.87 cm	100.00 ml/min
10/16/2024 10:35 AM	04:00	6.08 pH	13.76 °C	2,868.3 µS/cm	1.07 mg/L	3.77 NTU	245.1 mV	353.87 cm	100.00 ml/min
10/16/2024 10:36 AM	05:00	6.06 pH	13.88 °C	2,857.3 µS/cm	0.77 mg/L	2.96 NTU	244.3 mV	353.87 cm	100.00 ml/min
10/16/2024 10:37 AM	06:00	6.06 pH	13.83 °C	2,847.6 µS/cm	0.59 mg/L	6.39 NTU	243.5 mV	353.87 cm	100.00 ml/min
10/16/2024 10:38 AM	07:00	6.05 pH	13.80 °C	2,840.5 µS/cm	0.55 mg/L	6.85 NTU	242.4 mV	353.87 cm	100.00 ml/min
10/16/2024 10:39 AM	08:00	6.06 pH	13.75 °C	2,837.7 µS/cm	0.70 mg/L	13.07 NTU	240.8 mV	353.87 cm	100.00 ml/min
10/16/2024 10:40 AM	09:00	6.08 pH	13.91 °C	2,827.2 µS/cm	1.07 mg/L	16.99 NTU	239.0 mV	353.87 cm	100.00 ml/min
10/16/2024 10:41 AM	10:00	6.10 pH	13.88 °C	2,822.1 µS/cm	1.57 mg/L	25.27 NTU	237.1 mV	353.87 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 10/16/2024 10:31:12 AM
Project: OW-413B
Operator Name:

Location Name: OW-413B
Initial Depth to Water: 11.61 ft

Estimated Total Volume Pumped: 1000 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
10/16/2024 10:31 AM	00:00	6.27 pH	13.83 °C	2,986.3 µS/cm	5.57 mg/L	3.67 NTU	243.7 mV	353.87 cm	100.00 ml/min
10/16/2024 10:32 AM	01:00	6.17 pH	13.83 °C	2,930.4 µS/cm	3.56 mg/L	2.26 NTU	245.5 mV	353.87 cm	100.00 ml/min
10/16/2024 10:33 AM	02:00	6.13 pH	13.73 °C	2,902.5 µS/cm	2.29 mg/L	3.25 NTU	246.0 mV	353.87 cm	100.00 ml/min
10/16/2024 10:34 AM	03:00	6.10 pH	13.72 °C	2,884.2 µS/cm	1.52 mg/L	2.33 NTU	245.7 mV	353.87 cm	100.00 ml/min
10/16/2024 10:35 AM	04:00	6.08 pH	13.76 °C	2,868.3 µS/cm	1.07 mg/L	3.77 NTU	245.1 mV	353.87 cm	100.00 ml/min
10/16/2024 10:36 AM	05:00	6.06 pH	13.88 °C	2,857.3 µS/cm	0.77 mg/L	2.96 NTU	244.3 mV	353.87 cm	100.00 ml/min
10/16/2024 10:37 AM	06:00	6.06 pH	13.83 °C	2,847.6 µS/cm	0.59 mg/L	6.39 NTU	243.5 mV	353.87 cm	100.00 ml/min
10/16/2024 10:38 AM	07:00	6.05 pH	13.80 °C	2,840.5 µS/cm	0.55 mg/L	6.85 NTU	242.4 mV	353.87 cm	100.00 ml/min
10/16/2024 10:39 AM	08:00	6.06 pH	13.75 °C	2,837.7 µS/cm	0.70 mg/L	13.07 NTU	240.8 mV	353.87 cm	100.00 ml/min
10/16/2024 10:40 AM	09:00	6.08 pH	13.91 °C	2,827.2 µS/cm	1.07 mg/L	16.99 NTU	239.0 mV	353.87 cm	100.00 ml/min
10/16/2024 10:41 AM	10:00	6.10 pH	13.88 °C	2,822.1 µS/cm	1.57 mg/L	25.27 NTU	237.1 mV	353.87 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 10/21/2024 9:56:24 AM
Project: MW-501B
Operator Name:

Location Name: MW-501B
Initial Depth to Water: 10.16 ft

Estimated Total Volume Pumped: 1200 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
10/21/2024 9:56 AM	00:00	7.36 pH	19.13 °C	905.44 µS/cm	4.82 mg/L	6.69 NTU	181.4 mV	309.68 cm	100.00 ml/min
10/21/2024 9:57 AM	01:00	7.32 pH	18.60 °C	892.22 µS/cm	3.04 mg/L	10.98 NTU	184.5 mV	309.68 cm	100.00 ml/min
10/21/2024 9:58 AM	02:00	7.29 pH	18.31 °C	887.66 µS/cm	1.96 mg/L	15.58 NTU	187.5 mV	309.68 cm	100.00 ml/min
10/21/2024 9:59 AM	03:00	7.27 pH	18.10 °C	884.86 µS/cm	1.35 mg/L	20.94 NTU	189.8 mV	309.68 cm	100.00 ml/min
10/21/2024 10:00 AM	04:00	7.26 pH	17.95 °C	882.89 µS/cm	0.98 mg/L	21.45 NTU	191.2 mV	309.68 cm	100.00 ml/min
10/21/2024 10:01 AM	05:00	7.25 pH	17.88 °C	881.69 µS/cm	0.76 mg/L	25.16 NTU	192.6 mV	309.68 cm	100.00 ml/min
10/21/2024 10:02 AM	06:00	7.24 pH	17.85 °C	881.71 µS/cm	0.66 mg/L	1.34 NTU	194.4 mV	309.68 cm	100.00 ml/min
10/21/2024 10:03 AM	07:00	7.24 pH	17.84 °C	881.77 µS/cm	0.68 mg/L	2.36 NTU	195.4 mV	309.68 cm	100.00 ml/min
10/21/2024 10:04 AM	08:00	7.24 pH	17.85 °C	880.18 µS/cm	0.91 mg/L	2.45 NTU	195.9 mV	309.68 cm	100.00 ml/min
10/21/2024 10:05 AM	09:00	7.25 pH	17.90 °C	877.58 µS/cm	1.31 mg/L	2.46 NTU	196.3 mV	309.68 cm	100.00 ml/min
10/21/2024 10:06 AM	10:00	7.26 pH	17.96 °C	876.56 µS/cm	1.83 mg/L	3.92 NTU	196.4 mV	309.68 cm	100.00 ml/min
10/21/2024 10:07 AM	11:00	7.27 pH	18.04 °C	877.41 µS/cm	2.39 mg/L	4.51 NTU	196.3 mV	309.68 cm	100.00 ml/min
10/21/2024 10:08 AM	12:00	7.28 pH	18.10 °C	875.87 µS/cm	2.97 mg/L	5.83 NTU	196.4 mV	309.68 cm	100.00 ml/min

Samples

Sample ID:	Description:

Created using VuSitu from In-Situ, Inc.

Low-Flow Test Report:

Test Date / Time: 10/21/2024 9:56:24 AM
Project: MW-501B
Operator Name:

Location Name: MW-501B
Initial Depth to Water: 10.16 ft

Estimated Total Volume Pumped: 1200 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
10/21/2024 9:56 AM	00:00	7.36 pH	19.13 °C	905.44 µS/cm	4.82 mg/L	6.69 NTU	181.4 mV	309.68 cm	100.00 ml/min
10/21/2024 9:57 AM	01:00	7.32 pH	18.60 °C	892.22 µS/cm	3.04 mg/L	10.98 NTU	184.5 mV	309.68 cm	100.00 ml/min
10/21/2024 9:58 AM	02:00	7.29 pH	18.31 °C	887.66 µS/cm	1.96 mg/L	15.58 NTU	187.5 mV	309.68 cm	100.00 ml/min
10/21/2024 9:59 AM	03:00	7.27 pH	18.10 °C	884.86 µS/cm	1.35 mg/L	20.94 NTU	189.8 mV	309.68 cm	100.00 ml/min
10/21/2024 10:00 AM	04:00	7.26 pH	17.95 °C	882.89 µS/cm	0.98 mg/L	21.45 NTU	191.2 mV	309.68 cm	100.00 ml/min
10/21/2024 10:01 AM	05:00	7.25 pH	17.88 °C	881.69 µS/cm	0.76 mg/L	25.16 NTU	192.6 mV	309.68 cm	100.00 ml/min
10/21/2024 10:02 AM	06:00	7.24 pH	17.85 °C	881.71 µS/cm	0.66 mg/L	1.34 NTU	194.4 mV	309.68 cm	100.00 ml/min
10/21/2024 10:03 AM	07:00	7.24 pH	17.84 °C	881.77 µS/cm	0.68 mg/L	2.36 NTU	195.4 mV	309.68 cm	100.00 ml/min
10/21/2024 10:04 AM	08:00	7.24 pH	17.85 °C	880.18 µS/cm	0.91 mg/L	2.45 NTU	195.9 mV	309.68 cm	100.00 ml/min
10/21/2024 10:05 AM	09:00	7.25 pH	17.90 °C	877.58 µS/cm	1.31 mg/L	2.46 NTU	196.3 mV	309.68 cm	100.00 ml/min
10/21/2024 10:06 AM	10:00	7.26 pH	17.96 °C	876.56 µS/cm	1.83 mg/L	3.92 NTU	196.4 mV	309.68 cm	100.00 ml/min
10/21/2024 10:07 AM	11:00	7.27 pH	18.04 °C	877.41 µS/cm	2.39 mg/L	4.51 NTU	196.3 mV	309.68 cm	100.00 ml/min
10/21/2024 10:08 AM	12:00	7.28 pH	18.10 °C	875.87 µS/cm	2.97 mg/L	5.83 NTU	196.4 mV	309.68 cm	100.00 ml/min

Samples

Sample ID:	Description:

Created using VuSitu from In-Situ, Inc.

Low-Flow Test Report:

Test Date / Time: 10/21/2024 10:42:33 AM
Project: OW-602B
Operator Name:

Location Name: OW-602B
Initial Depth to Water: 14.1 ft

Estimated Total Volume Pumped: 1000 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
10/21/2024 10:42 AM	00:00	7.03 pH	19.08 °C	1,387.2 µS/cm	3.29 mg/L	1.29 NTU	226.4 mV	429.77 cm	100.00 ml/min
10/21/2024 10:43 AM	01:00	7.01 pH	18.67 °C	1,390.5 µS/cm	2.26 mg/L	1.03 NTU	228.2 mV	429.77 cm	100.00 ml/min
10/21/2024 10:44 AM	02:00	6.98 pH	18.49 °C	1,389.8 µS/cm	1.66 mg/L	1.00 NTU	229.4 mV	429.77 cm	100.00 ml/min
10/21/2024 10:45 AM	03:00	6.96 pH	18.33 °C	1,388.0 µS/cm	1.29 mg/L	2.56 NTU	230.3 mV	429.77 cm	100.00 ml/min
10/21/2024 10:46 AM	04:00	6.94 pH	18.29 °C	1,385.8 µS/cm	1.06 mg/L	1.20 NTU	231.0 mV	429.77 cm	100.00 ml/min
10/21/2024 10:47 AM	05:00	6.93 pH	18.27 °C	1,380.6 µS/cm	1.06 mg/L	1.54 NTU	231.3 mV	429.77 cm	100.00 ml/min
10/21/2024 10:48 AM	06:00	6.93 pH	18.34 °C	1,375.9 µS/cm	1.37 mg/L	1.86 NTU	231.0 mV	429.77 cm	100.00 ml/min
10/21/2024 10:49 AM	07:00	6.94 pH	18.42 °C	1,372.2 µS/cm	1.92 mg/L	1.91 NTU	230.5 mV	429.77 cm	100.00 ml/min
10/21/2024 10:50 AM	08:00	6.95 pH	18.52 °C	1,369.8 µS/cm	2.52 mg/L	3.15 NTU	229.8 mV	429.77 cm	100.00 ml/min
10/21/2024 10:51 AM	09:00	6.96 pH	18.66 °C	1,366.2 µS/cm	3.10 mg/L	1.85 NTU	229.1 mV	429.77 cm	100.00 ml/min
10/21/2024 10:52 AM	10:00	6.98 pH	18.65 °C	1,365.1 µS/cm	3.60 mg/L	2.51 NTU	228.4 mV	429.77 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 10/21/2024 10:42:33 AM
Project: OW-602B
Operator Name:

Location Name: OW-602B
Initial Depth to Water: 14.1 ft

Estimated Total Volume Pumped: 1000 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
10/21/2024 10:42 AM	00:00	7.03 pH	19.08 °C	1,387.2 µS/cm	3.29 mg/L	1.29 NTU	226.4 mV	429.77 cm	100.00 ml/min
10/21/2024 10:43 AM	01:00	7.01 pH	18.67 °C	1,390.5 µS/cm	2.26 mg/L	1.03 NTU	228.2 mV	429.77 cm	100.00 ml/min
10/21/2024 10:44 AM	02:00	6.98 pH	18.49 °C	1,389.8 µS/cm	1.66 mg/L	1.00 NTU	229.4 mV	429.77 cm	100.00 ml/min
10/21/2024 10:45 AM	03:00	6.96 pH	18.33 °C	1,388.0 µS/cm	1.29 mg/L	2.56 NTU	230.3 mV	429.77 cm	100.00 ml/min
10/21/2024 10:46 AM	04:00	6.94 pH	18.29 °C	1,385.8 µS/cm	1.06 mg/L	1.20 NTU	231.0 mV	429.77 cm	100.00 ml/min
10/21/2024 10:47 AM	05:00	6.93 pH	18.27 °C	1,380.6 µS/cm	1.06 mg/L	1.54 NTU	231.3 mV	429.77 cm	100.00 ml/min
10/21/2024 10:48 AM	06:00	6.93 pH	18.34 °C	1,375.9 µS/cm	1.37 mg/L	1.86 NTU	231.0 mV	429.77 cm	100.00 ml/min
10/21/2024 10:49 AM	07:00	6.94 pH	18.42 °C	1,372.2 µS/cm	1.92 mg/L	1.91 NTU	230.5 mV	429.77 cm	100.00 ml/min
10/21/2024 10:50 AM	08:00	6.95 pH	18.52 °C	1,369.8 µS/cm	2.52 mg/L	3.15 NTU	229.8 mV	429.77 cm	100.00 ml/min
10/21/2024 10:51 AM	09:00	6.96 pH	18.66 °C	1,366.2 µS/cm	3.10 mg/L	1.85 NTU	229.1 mV	429.77 cm	100.00 ml/min
10/21/2024 10:52 AM	10:00	6.98 pH	18.65 °C	1,365.1 µS/cm	3.60 mg/L	2.51 NTU	228.4 mV	429.77 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 10/21/2024 11:30:44 AM
Project: OW-604B
Operator Name:

Location Name: OW-604B
Initial Depth to Water: 14.09 ft

Estimated Total Volume Pumped: 1000 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
10/21/2024 11:30 AM	00:00	7.77 pH	22.54 °C	1,178.1 µS/cm	4.95 mg/L	1.45 NTU	179.6 mV	429.46 cm	100.00 ml/min
10/21/2024 11:31 AM	01:00	7.82 pH	21.94 °C	1,187.8 µS/cm	2.98 mg/L	1.42 NTU	171.7 mV	429.46 cm	100.00 ml/min
10/21/2024 11:32 AM	02:00	7.84 pH	21.51 °C	1,187.3 µS/cm	1.87 mg/L	1.48 NTU	164.8 mV	429.46 cm	100.00 ml/min
10/21/2024 11:33 AM	03:00	7.86 pH	21.19 °C	1,183.6 µS/cm	1.26 mg/L	1.15 NTU	158.0 mV	429.46 cm	100.00 ml/min
10/21/2024 11:34 AM	04:00	7.88 pH	21.17 °C	1,178.6 µS/cm	0.91 mg/L	1.06 NTU	151.3 mV	429.46 cm	100.00 ml/min
10/21/2024 11:35 AM	05:00	7.91 pH	21.12 °C	1,166.8 µS/cm	0.70 mg/L	1.87 NTU	144.8 mV	429.46 cm	100.00 ml/min
10/21/2024 11:36 AM	06:00	7.93 pH	21.04 °C	1,166.4 µS/cm	0.56 mg/L	1.05 NTU	138.9 mV	429.46 cm	100.00 ml/min
10/21/2024 11:37 AM	07:00	7.96 pH	20.96 °C	1,162.0 µS/cm	0.48 mg/L	0.90 NTU	133.2 mV	429.46 cm	100.00 ml/min
10/21/2024 11:38 AM	08:00	7.98 pH	20.90 °C	1,154.2 µS/cm	0.43 mg/L	0.93 NTU	127.4 mV	429.46 cm	100.00 ml/min
10/21/2024 11:39 AM	09:00	8.04 pH	20.98 °C	1,134.5 µS/cm	0.44 mg/L	1.00 NTU	120.8 mV	429.46 cm	100.00 ml/min
10/21/2024 11:40 AM	10:00	8.14 pH	20.98 °C	1,109.9 µS/cm	0.59 mg/L	1.01 NTU	112.9 mV	429.46 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 10/21/2024 11:30:44 AM
Project: OW-604B
Operator Name:

Location Name: OW-604B
Initial Depth to Water: 14.09 ft

Estimated Total Volume Pumped: 1000 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
10/21/2024 11:30 AM	00:00	7.77 pH	22.54 °C	1,178.1 µS/cm	4.95 mg/L	1.45 NTU	179.6 mV	429.46 cm	100.00 ml/min
10/21/2024 11:31 AM	01:00	7.82 pH	21.94 °C	1,187.8 µS/cm	2.98 mg/L	1.42 NTU	171.7 mV	429.46 cm	100.00 ml/min
10/21/2024 11:32 AM	02:00	7.84 pH	21.51 °C	1,187.3 µS/cm	1.87 mg/L	1.48 NTU	164.8 mV	429.46 cm	100.00 ml/min
10/21/2024 11:33 AM	03:00	7.86 pH	21.19 °C	1,183.6 µS/cm	1.26 mg/L	1.15 NTU	158.0 mV	429.46 cm	100.00 ml/min
10/21/2024 11:34 AM	04:00	7.88 pH	21.17 °C	1,178.6 µS/cm	0.91 mg/L	1.06 NTU	151.3 mV	429.46 cm	100.00 ml/min
10/21/2024 11:35 AM	05:00	7.91 pH	21.12 °C	1,166.8 µS/cm	0.70 mg/L	1.87 NTU	144.8 mV	429.46 cm	100.00 ml/min
10/21/2024 11:36 AM	06:00	7.93 pH	21.04 °C	1,166.4 µS/cm	0.56 mg/L	1.05 NTU	138.9 mV	429.46 cm	100.00 ml/min
10/21/2024 11:37 AM	07:00	7.96 pH	20.96 °C	1,162.0 µS/cm	0.48 mg/L	0.90 NTU	133.2 mV	429.46 cm	100.00 ml/min
10/21/2024 11:38 AM	08:00	7.98 pH	20.90 °C	1,154.2 µS/cm	0.43 mg/L	0.93 NTU	127.4 mV	429.46 cm	100.00 ml/min
10/21/2024 11:39 AM	09:00	8.04 pH	20.98 °C	1,134.5 µS/cm	0.44 mg/L	1.00 NTU	120.8 mV	429.46 cm	100.00 ml/min
10/21/2024 11:40 AM	10:00	8.14 pH	20.98 °C	1,109.9 µS/cm	0.59 mg/L	1.01 NTU	112.9 mV	429.46 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 10/21/2024 12:10:24 PM
Project: OW-604B
Operator Name:

Location Name: OW-604B
Initial Depth to Water: 14.08 ft

Estimated Total Volume Pumped: 1000 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
10/21/2024 12:10 PM	00:00	7.18 pH	24.22 °C	1,232.3 µS/cm	4.04 mg/L	7.65 NTU	34.7 mV	429.16 cm	100.00 ml/min
10/21/2024 12:11 PM	01:00	7.11 pH	23.12 °C	1,234.2 µS/cm	2.45 mg/L	9.31 NTU	37.6 mV	429.16 cm	100.00 ml/min
10/21/2024 12:12 PM	02:00	7.07 pH	22.72 °C	1,234.5 µS/cm	1.61 mg/L	7.80 NTU	38.8 mV	429.16 cm	100.00 ml/min
10/21/2024 12:13 PM	03:00	7.04 pH	22.50 °C	1,234.3 µS/cm	1.17 mg/L	4.38 NTU	39.5 mV	429.16 cm	100.00 ml/min
10/21/2024 12:14 PM	04:00	7.03 pH	22.33 °C	1,231.9 µS/cm	0.92 mg/L	3.88 NTU	40.1 mV	429.16 cm	100.00 ml/min
10/21/2024 12:15 PM	05:00	7.01 pH	22.15 °C	1,230.2 µS/cm	0.78 mg/L	3.30 NTU	40.7 mV	429.16 cm	100.00 ml/min
10/21/2024 12:16 PM	06:00	7.00 pH	22.23 °C	1,227.4 µS/cm	0.70 mg/L	2.61 NTU	41.0 mV	429.16 cm	100.00 ml/min
10/21/2024 12:17 PM	07:00	7.00 pH	22.19 °C	1,224.4 µS/cm	0.72 mg/L	3.59 NTU	41.3 mV	429.16 cm	100.00 ml/min
10/21/2024 12:18 PM	08:00	7.01 pH	22.17 °C	1,217.8 µS/cm	0.87 mg/L	2.78 NTU	41.6 mV	429.16 cm	100.00 ml/min
10/21/2024 12:19 PM	09:00	7.02 pH	22.13 °C	1,211.0 µS/cm	1.20 mg/L	2.38 NTU	41.8 mV	429.16 cm	100.00 ml/min
10/21/2024 12:20 PM	10:00	7.04 pH	22.05 °C	1,200.6 µS/cm	1.78 mg/L	1.80 NTU	42.3 mV	429.16 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 10/23/2024 9:56:51 AM
Project: OW-709B
Operator Name:

Location Name: OW-709B
Initial Depth to Water: 17.09 ft

Estimated Total Volume Pumped: 1100 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
10/23/2024 9:56 AM	00:00	7.11 pH	11.77 °C	1,685.0 µS/cm	4.99 mg/L	8.54 NTU	236.1 mV	520.90 cm	100.00 ml/min
10/23/2024 9:57 AM	01:00	6.91 pH	11.84 °C	1,676.6 µS/cm	3.46 mg/L	9.41 NTU	245.1 mV	520.90 cm	100.00 ml/min
10/23/2024 9:58 AM	02:00	6.80 pH	11.89 °C	1,669.9 µS/cm	2.58 mg/L	8.92 NTU	250.7 mV	520.90 cm	100.00 ml/min
10/23/2024 9:59 AM	03:00	6.74 pH	11.97 °C	1,663.8 µS/cm	2.08 mg/L	8.35 NTU	253.7 mV	520.90 cm	100.00 ml/min
10/23/2024 10:00 AM	04:00	6.70 pH	11.90 °C	1,660.9 µS/cm	1.86 mg/L	10.21 NTU	255.9 mV	520.90 cm	100.00 ml/min
10/23/2024 10:01 AM	05:00	6.69 pH	11.85 °C	1,657.9 µS/cm	1.96 mg/L	18.39 NTU	256.7 mV	520.90 cm	100.00 ml/min
10/23/2024 10:02 AM	06:00	6.69 pH	11.80 °C	1,654.0 µS/cm	2.40 mg/L	30.72 NTU	256.8 mV	520.90 cm	100.00 ml/min
10/23/2024 10:03 AM	07:00	6.71 pH	11.85 °C	1,651.6 µS/cm	3.01 mg/L	38.95 NTU	255.6 mV	520.90 cm	100.00 ml/min
10/23/2024 10:04 AM	08:00	6.73 pH	11.88 °C	1,649.2 µS/cm	3.72 mg/L	35.34 NTU	254.6 mV	520.90 cm	100.00 ml/min
10/23/2024 10:05 AM	09:00	6.75 pH	11.90 °C	1,646.5 µS/cm	4.37 mg/L	36.29 NTU	253.9 mV	520.90 cm	100.00 ml/min
10/23/2024 10:06 AM	10:00	6.78 pH	11.85 °C	1,645.5 µS/cm	4.91 mg/L	40.39 NTU	252.5 mV	520.90 cm	100.00 ml/min
10/23/2024 10:07 AM	11:00	6.81 pH	11.81 °C	1,644.2 µS/cm	5.45 mg/L	38.23 NTU	251.6 mV	520.90 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 10/23/2024 10:39:36 AM
Project: OW-710B
Operator Name:

Location Name: OW-710B
Initial Depth to Water: 17.91 ft

Estimated Total Volume Pumped: 1000 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
10/23/2024 10:39 AM	00:00	6.92 pH	12.32 °C	1,251.6 µS/cm	4.81 mg/L	8.80 NTU	249.7 mV	545.90 cm	100.00 ml/min
10/23/2024 10:40 AM	01:00	6.90 pH	12.24 °C	1,246.6 µS/cm	3.63 mg/L	9.65 NTU	252.4 mV	545.90 cm	100.00 ml/min
10/23/2024 10:41 AM	02:00	6.87 pH	12.29 °C	1,244.5 µS/cm	2.94 mg/L	8.97 NTU	254.2 mV	545.90 cm	100.00 ml/min
10/23/2024 10:42 AM	03:00	6.84 pH	12.27 °C	1,242.8 µS/cm	2.55 mg/L	9.65 NTU	255.1 mV	545.90 cm	100.00 ml/min
10/23/2024 10:43 AM	04:00	6.83 pH	12.24 °C	1,242.9 µS/cm	2.31 mg/L	12.25 NTU	256.0 mV	545.90 cm	100.00 ml/min
10/23/2024 10:44 AM	05:00	6.82 pH	12.22 °C	1,243.7 µS/cm	2.16 mg/L	8.87 NTU	256.5 mV	545.90 cm	100.00 ml/min
10/23/2024 10:45 AM	06:00	6.81 pH	12.24 °C	1,244.8 µS/cm	2.08 mg/L	7.87 NTU	257.0 mV	545.90 cm	100.00 ml/min
10/23/2024 10:46 AM	07:00	6.80 pH	12.24 °C	1,244.9 µS/cm	2.04 mg/L	9.31 NTU	257.2 mV	545.90 cm	100.00 ml/min
10/23/2024 10:47 AM	08:00	6.80 pH	12.20 °C	1,244.9 µS/cm	2.05 mg/L	10.12 NTU	257.2 mV	545.90 cm	100.00 ml/min
10/23/2024 10:48 AM	09:00	6.80 pH	12.22 °C	1,244.7 µS/cm	2.07 mg/L	6.65 NTU	257.2 mV	545.90 cm	100.00 ml/min
10/23/2024 10:49 AM	10:00	6.80 pH	12.33 °C	1,241.2 µS/cm	2.15 mg/L	9.28 NTU	257.0 mV	545.90 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 10/23/2024 11:21:05 AM
Project: OW-711B
Operator Name:

Location Name: OW-711B
Initial Depth to Water: 12 ft

Estimated Total Volume Pumped: 1000 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
10/23/2024 11:21 AM	00:00	6.57 pH	14.60 °C	1,796.4 µS/cm	5.67 mg/L	15.89 NTU	267.3 mV	365.76 cm	100.00 ml/min
10/23/2024 11:22 AM	01:00	6.55 pH	14.72 °C	1,811.9 µS/cm	3.57 mg/L	8.57 NTU	269.7 mV	365.76 cm	100.00 ml/min
10/23/2024 11:23 AM	02:00	6.53 pH	14.74 °C	1,819.6 µS/cm	2.32 mg/L	7.89 NTU	270.6 mV	365.76 cm	100.00 ml/min
10/23/2024 11:24 AM	03:00	6.52 pH	14.68 °C	1,823.7 µS/cm	1.63 mg/L	8.79 NTU	271.0 mV	365.76 cm	100.00 ml/min
10/23/2024 11:25 AM	04:00	6.52 pH	14.72 °C	1,822.8 µS/cm	1.29 mg/L	10.99 NTU	270.8 mV	365.76 cm	100.00 ml/min
10/23/2024 11:26 AM	05:00	6.54 pH	14.82 °C	1,814.3 µS/cm	1.35 mg/L	13.38 NTU	269.8 mV	365.76 cm	100.00 ml/min
10/23/2024 11:27 AM	06:00	6.56 pH	14.87 °C	1,798.7 µS/cm	1.85 mg/L	16.57 NTU	267.8 mV	365.76 cm	100.00 ml/min
10/23/2024 11:28 AM	07:00	6.60 pH	14.92 °C	1,770.4 µS/cm	2.62 mg/L	21.55 NTU	265.5 mV	365.76 cm	100.00 ml/min
10/23/2024 11:29 AM	08:00	6.65 pH	14.91 °C	1,732.0 µS/cm	3.65 mg/L	24.92 NTU	262.5 mV	365.76 cm	100.00 ml/min
10/23/2024 11:30 AM	09:00	6.72 pH	14.88 °C	1,702.8 µS/cm	4.89 mg/L	25.52 NTU	258.8 mV	365.76 cm	100.00 ml/min
10/23/2024 11:31 AM	10:00	6.77 pH	14.89 °C	1,686.8 µS/cm	6.01 mg/L	23.97 NTU	256.1 mV	365.76 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 10/25/2024 11:01:33 AM
Project: OW-409B
Operator Name:

Location Name: OW-409B
Initial Depth to Water: 20.89 ft

Estimated Total Volume Pumped: 1000 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
10/25/2024 11:01 AM	00:00	6.63 pH	16.87 °C	1,924.8 µS/cm	4.64 mg/L	2.63 NTU	273.7 mV	636.73 cm	100.00 ml/min
10/25/2024 11:02 AM	01:00	6.52 pH	16.51 °C	1,908.2 µS/cm	3.07 mg/L	1.70 NTU	279.6 mV	636.73 cm	100.00 ml/min
10/25/2024 11:03 AM	02:00	6.48 pH	16.26 °C	1,890.8 µS/cm	2.30 mg/L	1.45 NTU	282.6 mV	636.73 cm	100.00 ml/min
10/25/2024 11:04 AM	03:00	6.45 pH	16.10 °C	1,874.1 µS/cm	1.83 mg/L	1.67 NTU	283.9 mV	636.73 cm	100.00 ml/min
10/25/2024 11:05 AM	04:00	6.44 pH	15.97 °C	1,859.5 µS/cm	1.45 mg/L	1.97 NTU	284.8 mV	636.73 cm	100.00 ml/min
10/25/2024 11:06 AM	05:00	6.43 pH	15.89 °C	1,848.0 µS/cm	1.17 mg/L	2.10 NTU	285.5 mV	636.73 cm	100.00 ml/min
10/25/2024 11:07 AM	06:00	6.44 pH	15.82 °C	1,834.9 µS/cm	1.12 mg/L	3.57 NTU	283.9 mV	636.73 cm	100.00 ml/min
10/25/2024 11:08 AM	07:00	6.47 pH	15.83 °C	1,822.1 µS/cm	1.36 mg/L	4.19 NTU	282.0 mV	636.73 cm	100.00 ml/min
10/25/2024 11:09 AM	08:00	6.50 pH	15.80 °C	1,811.0 µS/cm	1.76 mg/L	4.93 NTU	279.7 mV	636.73 cm	100.00 ml/min
10/25/2024 11:10 AM	09:00	6.54 pH	15.78 °C	1,807.2 µS/cm	2.26 mg/L	15.72 NTU	277.7 mV	636.73 cm	100.00 ml/min
10/25/2024 11:11 AM	10:00	6.57 pH	15.80 °C	1,802.1 µS/cm	2.88 mg/L	3.88 NTU	275.6 mV	636.73 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 10/25/2024 12:07:15 PM
Project: OW-712B
Operator Name:

Location Name: OW-712B
Initial Depth to Water: 7.12 ft

Estimated Total Volume Pumped: 1000 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
10/25/2024 12:07 PM	00:00	6.68 pH	17.50 °C	1,724.8 µS/cm	5.24 mg/L	9.48 NTU	256.9 mV	217.02 cm	100.00 ml/min
10/25/2024 12:08 PM	01:00	6.62 pH	16.82 °C	1,721.9 µS/cm	3.38 mg/L	10.68 NTU	259.6 mV	217.02 cm	100.00 ml/min
10/25/2024 12:09 PM	02:00	6.59 pH	16.46 °C	1,718.3 µS/cm	2.28 mg/L	11.01 NTU	261.1 mV	217.02 cm	100.00 ml/min
10/25/2024 12:10 PM	03:00	6.57 pH	16.19 °C	1,714.6 µS/cm	1.67 mg/L	8.76 NTU	262.0 mV	217.02 cm	100.00 ml/min
10/25/2024 12:11 PM	04:00	6.55 pH	16.08 °C	1,709.9 µS/cm	1.32 mg/L	7.02 NTU	262.4 mV	217.02 cm	100.00 ml/min
10/25/2024 12:12 PM	05:00	6.55 pH	16.00 °C	1,705.4 µS/cm	1.22 mg/L	6.79 NTU	262.3 mV	217.02 cm	100.00 ml/min
10/25/2024 12:13 PM	06:00	6.56 pH	15.91 °C	1,701.8 µS/cm	1.43 mg/L	6.12 NTU	260.9 mV	217.02 cm	100.00 ml/min
10/25/2024 12:14 PM	07:00	6.59 pH	15.85 °C	1,697.8 µS/cm	1.99 mg/L	6.73 NTU	259.0 mV	217.02 cm	100.00 ml/min
10/25/2024 12:15 PM	08:00	6.60 pH	15.82 °C	1,690.6 µS/cm	2.58 mg/L	5.72 NTU	257.9 mV	217.02 cm	100.00 ml/min
10/25/2024 12:16 PM	09:00	6.62 pH	15.77 °C	1,690.2 µS/cm	3.10 mg/L	7.27 NTU	256.6 mV	217.02 cm	100.00 ml/min
10/25/2024 12:17 PM	10:00	6.63 pH	15.76 °C	1,689.2 µS/cm	3.60 mg/L	5.79 NTU	255.4 mV	217.02 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 10/28/2024 10:40:29 AM
Project: P-703C
Operator Name:

Location Name: P-703C
Initial Depth to Water: 92.23 ft

Estimated Total Volume Pumped: 1000 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
10/28/2024 10:40 AM	00:00	7.35 pH	14.35 °C	2,194.3 µS/cm	5.20 mg/L	4.15 NTU	104.2 mV	2,811.2 cm	100.00 ml/min
10/28/2024 10:41 AM	01:00	7.32 pH	14.27 °C	2,194.4 µS/cm	4.48 mg/L	5.81 NTU	108.2 mV	2,811.2 cm	100.00 ml/min
10/28/2024 10:42 AM	02:00	7.28 pH	14.22 °C	2,192.7 µS/cm	3.92 mg/L	3.83 NTU	111.1 mV	2,811.2 cm	100.00 ml/min
10/28/2024 10:43 AM	03:00	7.26 pH	14.20 °C	2,189.6 µS/cm	3.49 mg/L	4.83 NTU	113.4 mV	2,811.2 cm	100.00 ml/min
10/28/2024 10:44 AM	04:00	7.24 pH	14.17 °C	2,187.8 µS/cm	3.19 mg/L	2.58 NTU	115.4 mV	2,811.2 cm	100.00 ml/min
10/28/2024 10:45 AM	05:00	7.23 pH	14.16 °C	2,184.5 µS/cm	2.96 mg/L	7.45 NTU	117.0 mV	2,811.2 cm	100.00 ml/min
10/28/2024 10:46 AM	06:00	7.22 pH	14.19 °C	2,184.0 µS/cm	2.79 mg/L	4.87 NTU	118.5 mV	2,811.2 cm	100.00 ml/min
10/28/2024 10:47 AM	07:00	7.22 pH	14.20 °C	2,181.5 µS/cm	2.65 mg/L	3.50 NTU	119.8 mV	2,811.2 cm	100.00 ml/min
10/28/2024 10:48 AM	08:00	7.21 pH	14.21 °C	2,180.3 µS/cm	2.55 mg/L	3.13 NTU	120.8 mV	2,811.2 cm	100.00 ml/min
10/28/2024 10:49 AM	09:00	7.21 pH	14.26 °C	2,178.6 µS/cm	2.52 mg/L	3.28 NTU	121.9 mV	2,811.2 cm	100.00 ml/min
10/28/2024 10:50 AM	10:00	7.21 pH	14.29 °C	2,178.0 µS/cm	2.54 mg/L	4.11 NTU	122.9 mV	2,811.2 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 10/28/2024 12:49:47 PM
Project: P-604C
Operator Name:

Location Name: P-604C
Initial Depth to Water: 96.56 ft

Estimated Total Volume Pumped: 1100 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
10/28/2024 12:49 PM	00:00	6.50 pH	21.05 °C	3,638.0 µS/cm	3.52 mg/L	7.69 NTU	245.3 mV	2,943.1 cm	100.00 ml/min
10/28/2024 12:50 PM	01:00	6.44 pH	20.55 °C	3,689.2 µS/cm	2.94 mg/L	3.92 NTU	246.3 mV	2,943.1 cm	100.00 ml/min
10/28/2024 12:51 PM	02:00	6.41 pH	20.10 °C	3,715.8 µS/cm	2.45 mg/L	3.94 NTU	247.8 mV	2,943.1 cm	100.00 ml/min
10/28/2024 12:52 PM	03:00	6.39 pH	19.85 °C	3,722.8 µS/cm	2.09 mg/L	3.10 NTU	248.3 mV	2,943.1 cm	100.00 ml/min
10/28/2024 12:53 PM	04:00	6.38 pH	19.86 °C	3,717.2 µS/cm	1.76 mg/L	2.91 NTU	248.5 mV	2,943.1 cm	100.00 ml/min
10/28/2024 12:54 PM	05:00	6.37 pH	19.83 °C	3,714.6 µS/cm	1.54 mg/L	2.58 NTU	248.4 mV	2,943.1 cm	100.00 ml/min
10/28/2024 12:55 PM	06:00	6.37 pH	19.78 °C	3,711.5 µS/cm	1.39 mg/L	2.03 NTU	248.3 mV	2,943.1 cm	100.00 ml/min
10/28/2024 12:56 PM	07:00	6.37 pH	19.68 °C	3,711.4 µS/cm	1.29 mg/L	2.49 NTU	248.2 mV	2,943.1 cm	100.00 ml/min
10/28/2024 12:57 PM	08:00	6.36 pH	19.64 °C	3,712.7 µS/cm	1.22 mg/L	2.26 NTU	248.1 mV	2,943.1 cm	100.00 ml/min
10/28/2024 12:58 PM	09:00	6.36 pH	19.66 °C	3,714.9 µS/cm	1.16 mg/L	1.79 NTU	247.9 mV	2,943.1 cm	100.00 ml/min
10/28/2024 12:59 PM	10:00	6.36 pH	19.86 °C	3,711.4 µS/cm	1.13 mg/L	1.49 NTU	247.6 mV	2,943.1 cm	100.00 ml/min
10/28/2024 1:00 PM	11:00	6.36 pH	20.06 °C	3,706.3 µS/cm	1.12 mg/L	1.31 NTU	247.0 mV	2,943.1 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 10/30/2024 10:45:38 AM
Project: P-213C
Operator Name:

Location Name: P-213C
Initial Depth to Water: 113.03 ft

Estimated Total Volume Pumped: 1500 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: Aqua TROLL 500
Serial Number: 647779

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
10/30/2024 10:45 AM	00:00	7.39 pH	23.40 °C	1,963.5 µS/cm	6.03 mg/L	2.84 NTU	193.9 mV	3,445.2 cm	100.00 ml/min
10/30/2024 10:46 AM	01:00	7.39 pH	23.39 °C	1,946.8 µS/cm	5.62 mg/L	1.71 NTU	195.4 mV	3,445.2 cm	100.00 ml/min
10/30/2024 10:47 AM	02:00	7.38 pH	23.36 °C	1,938.7 µS/cm	5.30 mg/L	2.16 NTU	196.1 mV	3,445.2 cm	100.00 ml/min
10/30/2024 10:48 AM	03:00	7.37 pH	23.39 °C	1,934.0 µS/cm	5.16 mg/L	2.07 NTU	197.0 mV	3,445.2 cm	100.00 ml/min
10/30/2024 10:49 AM	04:00	7.36 pH	23.46 °C	1,932.9 µS/cm	5.15 mg/L	1.89 NTU	197.9 mV	3,445.2 cm	100.00 ml/min
10/30/2024 10:50 AM	05:00	7.35 pH	23.53 °C	1,932.2 µS/cm	5.20 mg/L	2.44 NTU	198.7 mV	3,445.2 cm	100.00 ml/min
10/30/2024 10:51 AM	06:00	7.35 pH	23.60 °C	1,931.0 µS/cm	5.29 mg/L	1.69 NTU	199.0 mV	3,445.2 cm	100.00 ml/min
10/30/2024 10:52 AM	07:00	7.35 pH	23.66 °C	1,929.0 µS/cm	5.39 mg/L	1.74 NTU	199.1 mV	3,445.2 cm	100.00 ml/min
10/30/2024 10:53 AM	08:00	7.35 pH	23.72 °C	1,928.1 µS/cm	5.47 mg/L	1.65 NTU	199.1 mV	3,445.2 cm	100.00 ml/min
10/30/2024 10:54 AM	09:00	7.36 pH	23.78 °C	1,928.1 µS/cm	5.50 mg/L	1.48 NTU	199.1 mV	3,445.2 cm	100.00 ml/min
10/30/2024 10:55 AM	10:00	7.36 pH	23.84 °C	1,928.1 µS/cm	5.55 mg/L	1.46 NTU	199.2 mV	3,445.2 cm	100.00 ml/min
10/30/2024 10:56 AM	11:00	7.36 pH	23.89 °C	1,928.1 µS/cm	5.64 mg/L	1.35 NTU	199.4 mV	3,445.2 cm	100.00 ml/min
10/30/2024 10:57 AM	12:00	7.37 pH	23.94 °C	1,928.6 µS/cm	5.76 mg/L	1.48 NTU	199.6 mV	3,445.2 cm	100.00 ml/min
10/30/2024 10:58 AM	13:00	7.37 pH	24.00 °C	1,926.9 µS/cm	5.88 mg/L	1.45 NTU	199.6 mV	3,445.2 cm	100.00 ml/min
10/30/2024 10:59 AM	14:00	7.37 pH	24.05 °C	1,926.3 µS/cm	6.02 mg/L	1.57 NTU	199.6 mV	3,445.2 cm	100.00 ml/min
10/30/2024 11:00 AM	15:00	7.38 pH	24.10 °C	1,926.7 µS/cm	6.19 mg/L	1.57 NTU	199.6 mV	3,445.2 cm	100.00 ml/min

Appendix D - Leachate Collection System Performance Evaluation Report

2024 LEACHATE CONTROL SYSTEM PERFORMANCE EVALUATION

1.0 LEACHATE COLLECTION SYSTEM

The Black Hawk County Sanitary Landfill has six (6) separate leachate systems serving various parts of the facility.

1. Area E. The first leachate system in a Municipal Solid Waste (MSW) cell at the Black Hawk County Sanitary Landfill was installed in Area E. This is a gravity collection pipe that flows to the east. A leachate sump with a side slope riser and leachate storage tank were initially used at this location. Since Area E was closed and capped in approximately 2000, a Windmill Pump was installed and has performed well in keeping leachate pumped from Area E.

   In 1990, a groundwater collection toe drain was constructed outside Area E. The north, west and south boundaries are drained by a continuous perforated pipe that enters GUE-2 MH No. 1 from the west. The east boundary is drained by a perforated pipe that enters GUE-2 MH No. 1 from the north.

   GUE-2 MH No. 1 initially discharged to the south to the drainageway between Area E / Cell X and Co-Disposal. GUE-2 is the sample name for the Area E Groundwater Discharge. GUE-2 exceeded the Reporting Limit (RL) for 1,1-Dichloroethane, Benzene, cis-1, 2-Dichloroethylene, Trichloroethylene and Vinyl Chloride. An Assessment of Corrective Measures (ACM) is required once a sampling point is confirmed to exceed the RL of any Appendix I analyte according to IAC 567 113.10. However, the Commission decided to bypass the ACM process and installed a Bypass Manhole GUE-2 MH No. 2 and valving to divert the GUE-2 groundwater to the Cell X Leachate Riser Manhole and the Cell X Leachate Collection System.

2. Cell X. A groundwater collection system, leachate collection system, sump, side slope riser pump and storage tank were installed as part of this construction. The Windmill Pump was installed similar to Area E to pump the leachate and groundwater collection effluents to the Leachate Gravity Sewer that discharges to the City of Waterloo Wastewater Treatment Plant.

   As stated above, GUE-2 can also be diverted to the Cell X Leachate Collection and Discharge System.

3. Asbestos Cell No. 2. A leachate system was installed under this cell during the construction. It drains by gravity to the sanitary sewer at the Landfill's north property line.

4. Cell W-1. The leachate system was installed as part of the Cell W-1 construction, and extended with Phases 2, 3 and 4. The leachate collection pipe flows to the east to a leachate manhole. Leachate is pumped by a rail-mounted submersible pump to the sanitary sewer.

5. Cell W-2. The leachate system was installed as part of the Cell W-2 construction. The leachate collection pipe flows to the west to a leachate pump station inside the cell. Leachate is pumped through a 4-inch PVC force main to the sanitary sewer.

6. Cell W-3. The leachate system was installed as part of the Cell W-3, Phase I construction. The leachate collection pipe flows to the east to a leachate side slope riser pump inside the cell. Leachate is pumped through a 4-inch PVC force main to the sanitary sewer.

2.0 LEACHATE PRODUCTION

All of the leachate collected at the Black Hawk County Sanitary Landfill is discharged to the City of Waterloo's sanitary sewer system at the north boundary of the Landfill. The leachate flows through the City's sanitary sewer collection system for treatment at the Water Pollution Control Facility.

Table 1A summarizes the leachate pumping records since 2011, and Table 1B summarizes 2024. The site precipitation was up approximately 17 inches in 2024 from 2023. That resulted in an increase of annual leachate production of approximately 2.8 MG.

Figure 1 presents the monitoring points. Table 2 presents leachate depth data for Area E, Cells X, W-1 and W-2 and Asbestos No. 2. The levels in the sump are well below the tops of the respective liners, indicating that leachate is being removed effectively from the system.

Leachate level transducers were installed in the leachate sumps of Area E, Cell X, Cell W-1, Cell W-2, Cell W-3 and Asbestos No. 2 to measure the leachate levels over the liner systems. Table 2 represents the amount of leachate in feet over the liner in the cells. Negative numbers represent leachate elevations in the leachate sump below the liner elevation. Positive numbers represent leachate elevations above the liner elevation. There were instances in 2022 where the leachate head was over 1-FT in Cells X and W-2.

- Cell X – We had reoccurring issues with the . The transducer was getting fowled with sludge. The leachate level was monitored manually and was under 1-FT. The issue has been resolved.

- Cell W-2 & W-3 – The leachate elevation of over 1-FT for these cells are a result of timing of the transducer readings. The data presented in the first day of the month at approximately 1 AM. Subsequent readings later in those particular days show leachate levels less than one foot.

3.0 LEACHATE SYSTEM MAINTENANCE

Cleaning Schedule:

- Area E and Cell X
  - Last Cleaned in 2024
  - Scheduled to be Cleaned in 2027

- Cell W-1
  - Last Cleaned in 2022
  - Scheduled to be Cleaned in 2025

- Cell W-2
  - Last Cleaned in 2024
  - Scheduled to be Cleaned in 2027

- Cell W-3
  - Last Cleaned in 2024
  - Scheduled to be Cleaned in 2027

- Asbestos Cell No. 2
  - Last Cleaned in 2024
  - Scheduled to be Cleaned in 2027

TABLE 1A
LEACHATE PUMPING HISTORICAL RECORD
BLACK HAWK COUNTY LANDFILL

MONTHLY AVERAGES 2011 thru 2024

	Asbestos Cell No. 2	Area E & Cell X	Cell W1	Cell W2	Cell W3	Total	Monthly Precip, in
January	33,904	49,028	122,023	276,466	471,436	952,857	1.49
February	19,164	68,038	129,119	423,284	694,633	1,334,238	1.33
March	38,414	40,960	226,077	292,703	1,241,515	1,839,668	2.06
April	62,187	63,439	188,660	470,171	551,472	1,335,930	3.37
May	54,231	57,201	255,047	335,506	1,640,491	2,342,475	4.79
June	50,990	60,697	235,269	517,207	2,093,956	2,958,119	5.88
July	84,643	109,862	247,623	832,016	1,052,909	2,327,052	3.00
August	31,879	54,443	197,640	933,680	754,199	1,971,841	3.38
September	37,153	63,014	207,890	865,148	403,451	1,576,655	3.34
October	35,872	86,804	250,072	810,333	511,911	1,694,992	3.24
November	23,130	70,077	167,207	434,233	1,138,486	1,833,133	1.79
December	21,180	54,779	164,219	236,601	377,415	854,194	1.66
AVG TOTAL	492,747	778,339	2,390,848	6,427,346	10,931,874	21,021,155	35.33

YEARLY TOTALS

	Asbestos Cell No. 2	Area E & Cell X	Cell W1	Cell W2	Cell W3	Total	Yearly Precip, in
2011		466,646	4,106,259			4,572,905	40.81
2012		387,557	3,434,046			3,821,603	23.91
2013		466,646	4,106,259			4,572,905	40.81
2014	1,032,300	389,778	3,734,484	306,790		5,463,352	39.52
2015	1,231,060	353,824	1,989,732	9,916,468		13,491,084	43.90
2016	714,864	498,516	2,615,330	15,758,600		19,587,310	41.84
2017	314,670	741,853	2,277,979	6,229,233		9,563,735	30.42
2018	497,458	1,191,682	3,010,141	11,644,884		16,344,165	54.15
2019	438,206	2,261,900	1,693,760	8,325,424		12,719,290	41.77
2020	330,133	1,386,346	1,888,036	4,283,994		7,888,509	35.81
2021	185,300	1,100,813	1,505,789	3,560,982		6,352,884	24.89
2022	247,284	441,212	1,328,035	3,057,928	3,974,022	9,048,481	34.09
2023	150,840	560,994	926,974	969,221	1,896,051	4,504,080	22.63
2024	278,102	648,985	855,051	456,538	5,061,801	7,300,477	39.86

Leachate amounts given in gallons.

TABLE 1B
2024 LEACHATE PUMPING RECORD
BLACK HAWK COUNTY LANDFILL

	Asbestos Cell No. 2	Area E & Cell X	Cell W1	Cell W2	Cell W3	Total	Monthly Precip, in
January	838	33,399	0	40,075	138,922	213,234	2.61
February	49,786	24,474	0	67,347	527,368	668,975	0.11
March	1,391	62,408	185,627	58,183	98,167	405,776	2.50
April	29,014	59,007	120,672	40,560	268,360	517,613	3.98
May	33,375	17,020	60,772	37,350	514,070	662,587	10.40
June	99,096	128,537	75,539	52,921	1,596,941	1,953,034	7.24
July	31,087	0	97,041	34,874	696,725	859,727	5.39
August	10,448	0	48,567	31,748	338,822	429,585	1.78
September	2,977	171,499	80,047	22,985	163,782	441,290	0.44
October	300	52,607	64,272	16,868	53,331	187,378	1.69
November	13,505	47,902	57,672	28,244	336,610	483,933	3.72
December	6,285	52,132	64,842	25,383	328,703	477,345	0.00
TOTAL	278,102	648,985	855,051	456,538	5,061,801	7,300,477	39.86

Leachate amounts given in gallons.

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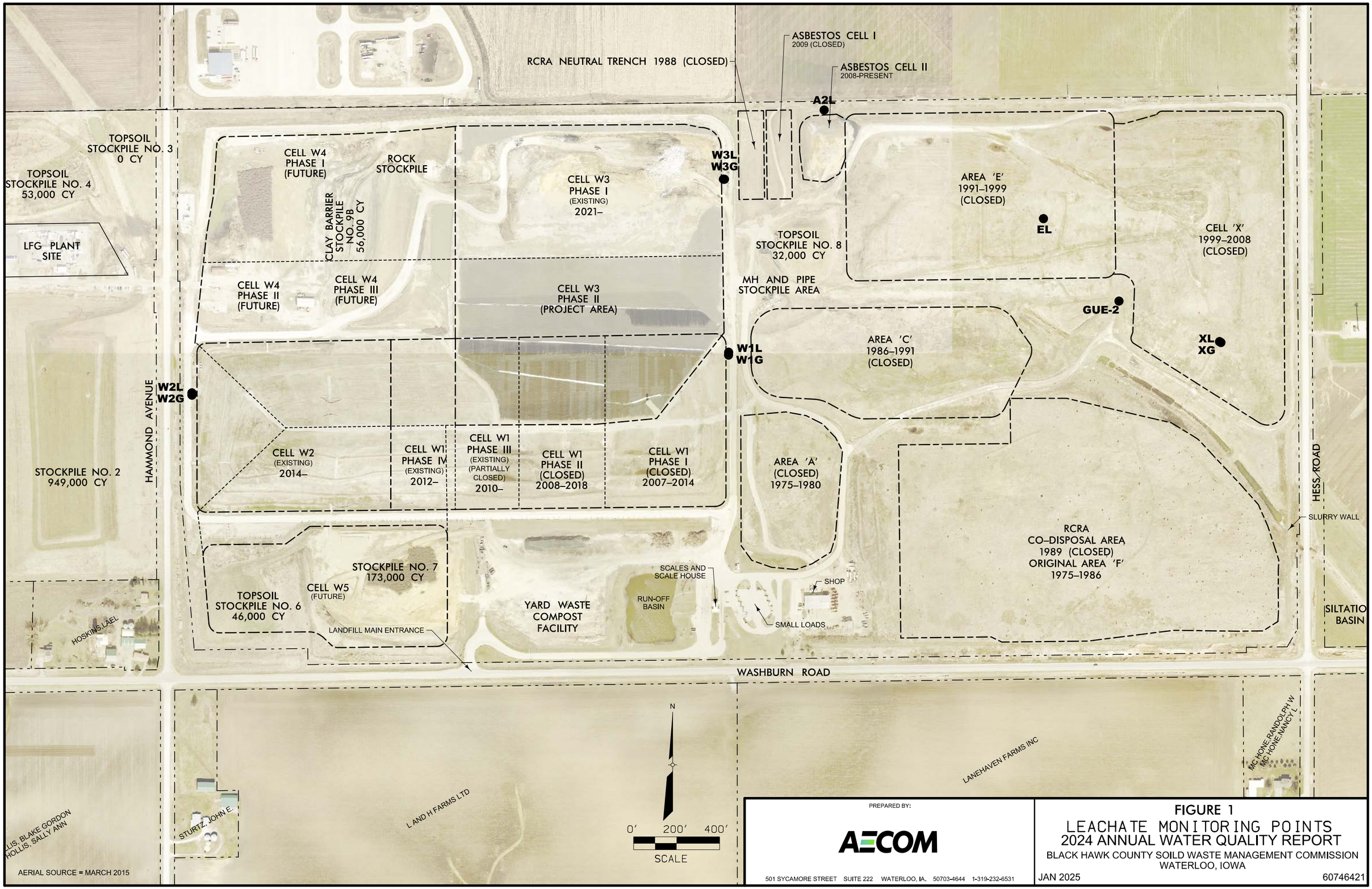

PREPARED BY:

AECOM

501 SYCAMORE STREET SUITE 222 WATERLOO, IA. 50703-4644 1-319-232-6531

FIGURE 1

LEACHATE MONITORING POINTS
2024 ANNUAL WATER QUALITY REPORT

BLACK HAWK COUNTY SOILD WASTE MANAGEMENT COMMISSION
WATERLOO, IOWA

JAN 2025 60746421

Plotted: 1/29/2025, 10:42:03 AM

Waterloo, Iowa
Printed from MicroStation V8i
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Appendix E - Methane Monitoring Report

BLACK HAWK COUNTY SANITARY LANDFILL
IDNR Permit No. 7-SDP-1-75P
2024 METHANE MONITORING PROGRAM REPORT

1.0 PROGRAM PLAN

Landfill gas (LFG), produced during bio-degradation of the waste, can migrate through soils. Methane and carbon dioxide are the primary constituents. Methane is explosive at concentrations between 5% (lower explosive limit) (LEL) and 15% (upper explosive limit) (UEL) in air, and can collect in buildings or other structures.

At Black Hawk County Sanitary Landfill, the LFG generated is passively vented through the final cover using a series of gas vents in Cells A, C, E, X and W1 and the Co-Disposal Area. The trenches are excavated into the waste 6 feet below the final cover. In the trenches, horizontal perforated PVC pipe surrounded by granular material or tire shreds create a path of least resistance for the LFG to collect. The final cover is placed over the trench to prevent precipitation from entering the waste mass. Vertical PVC pipes are connected to the horizontal pipes equipped with roof turbines, allowing the LFG to vent to the atmosphere.

Methane monitoring will be conducted quarterly at Black Hawk County Sanitary Landfill in accordance with the permit and the Methane Monitoring Program Plan. The site perimeter and all site buildings will be inspected to check for the presence of methane gas. The perimeter sample locations are sited on each side of the facility. Methane concentrations greater than 1.25% (25% of the LEL) in facility structures, or greater than 5% at the facility boundary, require immediate action as discussed in IAC 113.26(15)c(1-3). Readings will be field recorded and included in the annual Methane Monitoring Report.

2.0 TITLE V OPERATING PERMIT

The Black Hawk County Sanitary Landfill has undergone Tier 2 gas analysis and has a current Air Quality Operation Permit (99-TV-054) which is required due to the volume of wastes received at the Landfill since starting operations. The current Title V Operating Permit was issued November 2023.

An active landfill gas system with a flare and a gas to energy plant is being constructed in 2023.

A copy of the Title V Operating Permit has not been included; however, it may be made available upon request of IDNR.

3.0 MONITORING RESULTS

During 2024, Black Hawk County Sanitary Landfill was monitored for LFG in accordance with the permit. Methane monitoring was conducted using an RKI Eagle Portable Multi-Gas Meter which monitors for organic gases such as methane, oxygen deficiency, hydrogen sulfide and carbon monoxide. The samples were taken quarterly at the gas monitoring points shown in Figure 1. The 2024 methane monitoring data is recorded in Table 1.

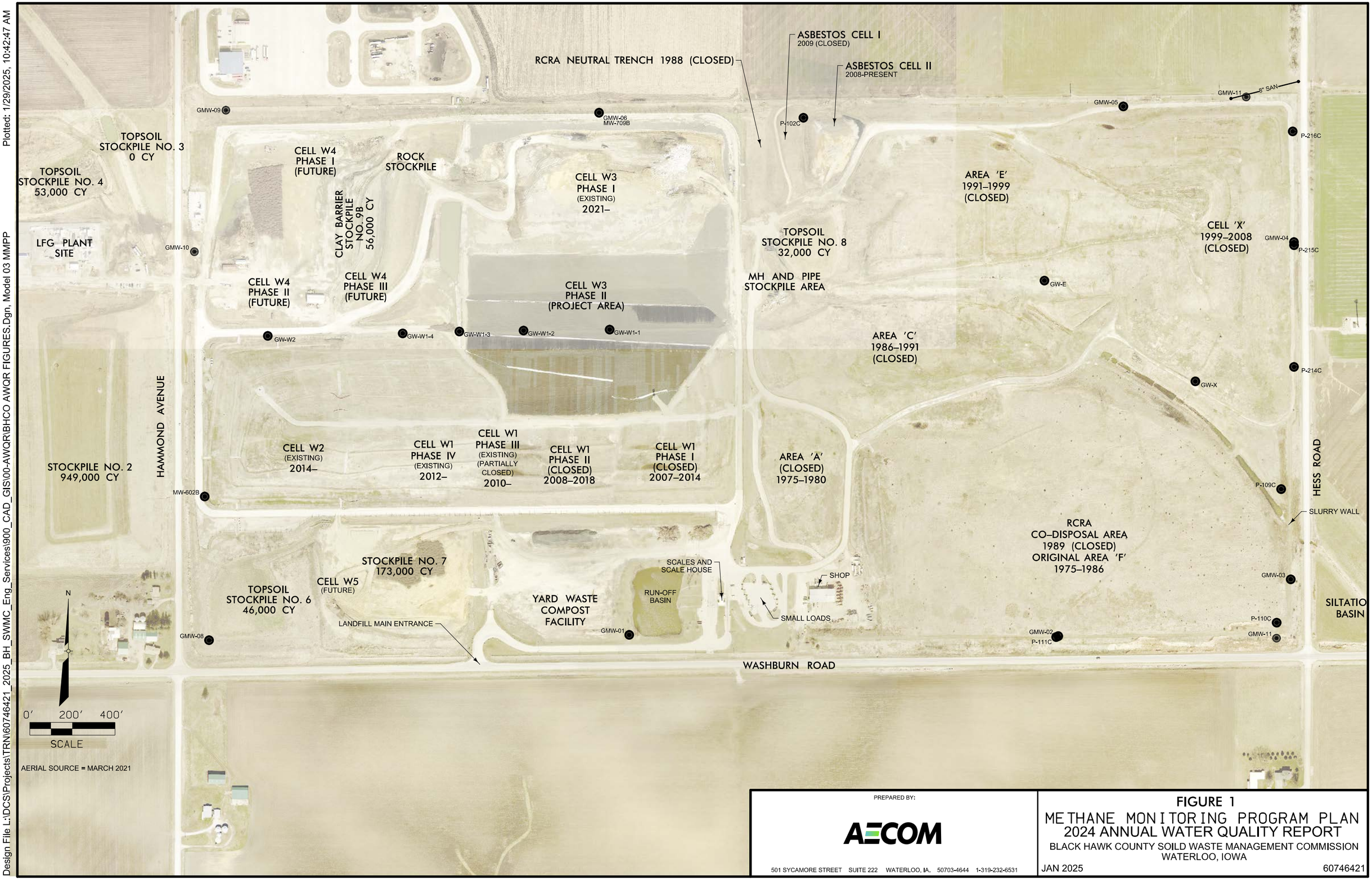
Throughout 2024, Methane gas was not recorded as exceeding concentrations greater than 5% at the gas monitoring points nor 1.25% at the facility buildings.

AECOM will continue to report any methane exceedances within 30 days to IDNR.

TABLE 1
2024 METHANE MONITORING PROGRAM REPORT
BLACK HAWK COUNTY SANITARY LANDFILL

CH_4 in % LEL	
MW & MH > 100%	
BUILDINGS > 25%	

Date		**Jan.**				**Apr.**				**Jul.**				**Oct**			
PID METER NO.																	
Location	**Type**	**CH_4**	**H_2S ppm**	**O_2**	**CO ppm**	**CH_4**	**H_2S ppm**	**O_2**	**CO ppm**	**CH_4**	**H_2S ppm**	**O_2**	**CO ppm**	**CH_4**	**H_2S ppm**	**O_2**	**CO ppm**
GMW-01	Subsurface	**0.00%**	0.00	20.90%	0.00	**0.00%**	0.00	20.00%	0.00	**0.00%**	0.00	19.90%	0.00	**0.00%**	0.00	20.00%	0.00
Scale House	Indoor	**0.00%**	0.00	18.20%	0.00	**0.00%**	0.00	2030.00%	0.00	**0.00%**	0.00	20.30%	0.00	**0.00%**	0.00	20.30%	0.00
Shop	Indoor	**0.00%**	0.00	19.00%	0.00	**0.00%**	0.00	19.80%	0.00	**0.00%**	0.00	20.00%	0.00	**0.00%**	0.00	19.90%	0.00
GMW-02	Subsurface	**0.00%**	0.00	20.10%	0.00	**0.00%**	0.00	20.00%	0.00	**0.00%**	0.00	19.50%	0.00	**0.00%**	0.00	19.00%	0.00
P-111C	Bedrock	**0.00%**	0.00	20.00%	0.00	**0.00%**	0.00	20.90%	0.00	**0.00%**	0.00	20.90%	0.00	**0.00%**	0.00	20.90%	0.00
GMW-11	Subsurface	**0.00%**	0.00	18.90%	0.00	**0.00%**	0.00	18.90%	0.00	**0.00%**	0.00	20.90%	0.00	**0.00%**	0.00	20.30%	0.00
P-110C	Bedrock	**0.00%**	0.00	19.00%	0.00	**0.00%**	0.00	20.10%	0.00	**0.00%**	0.00	20.10%	0.00	**0.00%**	0.00	20.90%	0.00
GMW-03	Subsurface	**0.00%**	0.00	19.80%	0.00	**0.00%**	0.00	20.40%	0.00	**0.00%**	0.00	18.20%	0.00	**0.00%**	0.00	20.80%	0.00
P-109C	Bedrock	**0.00%**	0.00	20.00%	0.00	**0.00%**	0.00	20.90%	0.00	**0.00%**	0.00	19.90%	0.00	**0.00%**	0.00	20.00%	0.00
P-214C	Bedrock	**0.00%**	0.00	20.00%	0.00	**0.00%**	0.00	19.50%	0.00	**0.00%**	0.00	20.00%	0.00	**0.00%**	0.00	19.80%	0.00
GMW-04	Subsurface	**0.00%**	0.00	20.90%	0.00	**0.00%**	0.00	20.60%	0.00	**0.00%**	0.00	20.90%	0.00	**0.00%**	0.00	19.50%	0.00
P-215C	Bedrock	**0.00%**	0.00	19.20%	0.00	**0.00%**	0.00	20.00%	0.00	**0.00%**	0.00	20.80%	0.00	**0.00%**	0.00	20.50%	0.00
P-216C	Bedrock	**0.00%**	0.00	20.90%	0.00	**0.00%**	0.00	18.90%	0.00	**0.00%**	0.00	20.90%	0.00	**0.00%**	0.00	20.00%	0.00
GMW-12	Pipe	**0.00%**	0.00	20.20%	0.00	**0.00%**	0.00	20.90%	0.00	**0.00%**	0.00	19.70%	0.00	**0.00%**	0.00	20.60%	0.00
GMW-05	Subsurface	**0.00%**	0.00	20.20%	0.00	**0.00%**	0.00	20.30%	0.00	**0.00%**	0.00	20.50%	0.00	**0.00%**	0.00	20.90%	0.00
P-102C	Bedrock	**0.00%**	0.00	19.50%	0.00	**0.00%**	0.00	19.00%	0.00	**0.00%**	0.00	20.90%	0.00	**0.00%**	0.00	18.30%	0.00
GMW-06 (MW-709B)	Subsurface	**0.00%**	0.00	18.80%	0.00	**0.00%**	0.00	20.20%	0.00	**0.00%**	0.00	20.00%	0.00	**0.00%**	0.00	20.00%	0.00
GMW-09	Subsurface	**0.00%**	0.00	20.80%	0.00	**0.00%**	0.00	20.00%	0.00	**0.00%**	0.00	19.60%	0.00	**0.00%**	0.00	20.20%	0.00
GMW-10	Subsurface	**0.00%**	0.00	20.30%	0.00	**0.00%**	0.00	20.90%	0.00	**0.00%**	0.00	20.20%	0.00	**0.00%**	0.00	19.50%	0.00
MW-602B	Subsurface	**0.00%**	0.00	11.20%	0.00	**0.00%**	0.00	16.80%	0.00	**0.00%**	0.00	14.50%	0.00	**0.00%**	0.00	14.70%	0.00
GMW-08	Subsurface	**0.00%**	0.00	18.90%	0.00	**0.00%**	0.00	18.60%	0.00	**0.00%**	0.00	20.90%	0.00	**0.00%**	0.00	20.90%	0.00
GW-X	GW Drain	**0.00%**	0.00	20.60%	0.00	**0.00%**	0.00	20.30%	0.00	**0.00%**	0.00	20.90%	0.00	**0.00%**	0.00	20.90%	0.00
GW-E	GW Drain	**0.00%**	0.00	20.20%	0.00	**0.00%**	0.00	20.80%	0.00	**0.00%**	0.00	20.00%	0.00	**0.00%**	0.00	20.00%	0.00
GW-W1-1	GW Drain	**0.00%**	0.00	20.90%	0.00	**0.00%**	0.00	19.90%	0.00	**0.00%**	0.00	19.40%	0.00	**0.00%**	0.00	40.00%	0.00
GW-W1-2	GW Drain	**0.00%**	0.00	20.50%	0.00	**0.00%**	0.00	20.90%	0.00	**0.00%**	0.00	20.90%	0.00	**0.00%**	0.00	20.90%	0.00
GW-W1-3	GW Drain	**0.00%**	0.00	20.80%	0.00	**0.00%**	0.00	20.90%	0.00	**0.00%**	0.00	20.50%	0.00	**0.00%**	0.00	19.30%	0.00
GW-W1-4	GW Drain	**0.00%**	0.00	20.90%	0.00	**0.00%**	0.00	20.90%	0.00	**0.00%**	0.00	20.00%	0.00	**0.00%**	0.00	9.90%	0.00
GW-W2	GW Drain	**0.00%**	0.00	20.90%	0.00	**0.00%**	0.00	19.60%	0.00	**0.00%**	0.00	20.90%	0.00	**0.00%**	0.00	20.70%	0.00
GMW-7	Subsurface	**0.00%**	0.00	20.00%	0.00	**0.00%**	0.00	20.10%	0.00	**0.00%**	0.00	20.90%	0.00	**0.00%**	0.00	20.00%	0.00



PREPARED BY:

AECOM

501 SYCAMORE STREET SUITE 222 WATERLOO, IA. 50703-4644 1-319-232-6531

FIGURE 1

METHANE MONITORING PROGRAM PLAN
2024 ANNUAL WATER QUALITY REPORT

BLACK HAWK COUNTY SOILD WASTE MANAGEMENT COMMISSION
WATERLOO, IOWA

JAN 2025 60746421

Plotted: 1/29/2025, 10:42:47 AM

Waterloo, Iowa
Printed from MicroStation V8i
Design File L:\DCS\Projects\TRN\60746421_2025_BH_SWMC_Eng_Services\900_CAD_GIS\00-AWQR\BHCO AWQR FIGURES.Dgn, Model 03 MMPP

Appendix F - Storm Sampling Report

Black Hawk County Landfill
SWPPP Results
Monitoring Location SW-1

Parameter Name	Units	2021 MSGP Benchmark	09/09/20		03/22/22		03/15/23		04/02/24	
Sample Type			Grab	Composite	Grab	Composite	Grab	Composite	Grab	Composite
Metals										
Aluminum	mg/L	1.1	--	--	--	--	--	--	**3.21**	**3.49**
Antimony	mg/L	0.64	--	--	--	--	--	--	<0.038	<0.038
Arsenic	mg/L	0.15	**0.00222**	*0.00194 J*	*0.000923 J*	*0.000792 J*	*0.000845 J*	*0.000927 J*	<0.016	<0.016
Barium[1]	mg/L	NS	**0.0569**	**0.0535**	**0.0444**	**0.0458**	**0.0374**	**0.0377**	**0.0788**	**0.0816**
Beryllium	mg/L	0.13	--	--	--	--	--	--	<0.0014	<0.0014
Cadmium	mg/L	0.0018	*0.000068 J*	*0.0000560 J*	*0.000057 J*	<0.000055	<0.000055	<0.000055	<0.0039	<0.0039
Calcium[1]	mg/L	--	**70.1**	**66**	**132**	**129**	**251**	**256**	**151**	**155**
Chromium[1]	mg/L	0.016	**0.00656**	**0.00541**	<0.0011	<0.0011	<0.0011	<0.0011	<0.006	*0.00629 J*
Copper	mg/L	0.00519	--	--	--	--	--	--	*0.00803 J*	*0.00723 J*
Iron	mg/L	NS	**5.04**	**4.33**	**0.4**	**0.439**	**0.761**	**1.01**	**4.77**	**5.2**
Lead	mg/L	0.082	**0.00232**	**0.00202**	**0.000611**	**0.000748**	*0.000435 J*	*0.000344 J*	<0.024	<0.024
Magnesium	mg/L	NS	**12.7**	**12.1**	**25.3**	**24.4**	**56.9**	**58.6**	**32.8**	**33.6**
Magnesium, Dissolved	mg/L	NS	**12.3**	**10.1**	**26.5**	**26.9**	**60.9**	**58**	**28.1**	**29.1**
Mercury	mg/L	0.0014	<0.000100	<0.000100	<0.00011	<0.00011	<0.00014	<0.00014	<0.00014	<0.00014
Nickel	mg/L	0.47	--	--	--	--	--	--	<0.015	<0.015
Potassium[1]	mg/L	NS	**4.54**	**4.24**	**6.66**	**7.47**	**7.78**	**7.87**	**9.01**	**9.25**
Selenium	mg/L	0.0031	*0.00387 J*	*0.00352 J*	*0.00417 J*	*0.00291 J*	<0.00096	<0.00096	<0.029	<0.029
Silver	mg/L	0.0032	<0.000370	<0.000370	*0.000557 J*	<0.00049	<0.00049	<0.00049	<0.0091	<0.0091
Sodium[1]	mg/L	NS	2.16	**2.07**	**5.06**	**4.84**	**7.91**	**7.86**	**14**	**14.5**
Zinc	mg/L	0.12	--	--	--	--	--	--	**0.104**	**0.108**
Nonmetallic Inorganics										
Ammonia (as N)	mg/L	2.14	*0.201 J*	<0.200	<0.22	<0.22	<0.22	<0.22	*0.398 J*	*0.456 J*
Biochemical Oxygen Demand	mg/L	30	--	--	--	--	--	--	<3	**3**
Chemical Oxygen Demand	mg/L	120	**44.5**	**47.8**	<24	**43.6**	**54.8**	**59.7**	**47.2**	**37.2**
Chloride[1]	mg/L	0.629	*3.03 J*	*3.53 J*	**8.25**	**8.73**	**7.87**	**7.83**	**22.4**	**22.7**
Cyanide	mg/L	0.022	<0.00500	--	<0.0043	--	<0.0043	<0.0043	<0.0043	<0.0043
Nitrate Nitrite as N	mg/L	0.68	**0.375**	**0.389**	**0.795**	**0.786**	**0.243**	**0.199**	**0.639**	**0.734**
Sulfate[1]	mg/L	500	**173**	**173**	**317**	**337**	**640**	**661**	**348**	**351**
Total Phosphorus as P	mg/L	2	--	--	--	--	--	--	**0.491**	**0.328**
Organics										
HEM (Oil and Grease)[1]	mg/L	NS	<4.2	--	*4.6 J*	--	<4.4	--	<4.7	<4.7
TOC[1]	mg/L	NS	**3.45**	**2.91**	**7.9**	**7.75**	**5.59**	**6.96**	**9.78**	**10.8**
Organics, Semivolatile										
Alpha-Terpineol[2]	µg/L	42	--	--	--	--	--	--	<2.9	<2.9
Aniline[2]	µg/L	24	--	--	--	--	--	--	<0.35	<0.35
Benzoic acid[2]	µg/L	119	--	--	--	--	--	--	<17	<17
Naphthalene[2]	µg/L	59	--	--	--	--	--	--	<6.1	<6.1
p-Cresol[2]	µg/L	24	--	--	--	--	--	--	<0.7	<0.7
Phenol[2]	µg/L	48	--	--	--	--	--	--	<1.1	<1.1
Pyridine[2]	µg/L	72	--	--	--	--	--	--	<1.6	<1.6
Other Chemical Properties										
Bicarbonate Alkalinity as $CaCO_3$[1]	mg/L	NS	--	--	**78.4**	**118**	**211**	**210**	**163**	**184**
Carbonate Alkalinity as $CaCO_3$	mg/L	NS	--	--	<4.6	<4.6	<2.3	<2.3	--	--
Hydroxide Alkalinity as $CaCO_3$	mg/L	NS	--	--	<4.6	<4.6	<2.3	<2.3	--	--
pH	SU	6.0 - 9.0	7.9	--	7.9	7.9	7.1	--	7.8	7.8
Phenolphthalein Alkalinity as $CaCO_3$	mg/L	NS	--	--	<4.6	<4.6	<2.3	<2.3	<2.5	<2.5
Total Alkalinity as $CaCO_3$	mg/L	20	**34.5**	**34.5**	**78.4**	**118**	**211**	**210**	**163**	**184**
Total Dissolved Solids[1]	mg/L	NS	**366**	**366**	**546**	**540**	**1170**	**1140**	**640**	**570**
Total hardness as $CaCO_3$	mg/L	NS	--	--	--	--	--	--	**512**	**525**
Total Suspended Solids	mg/L	100	--	--	--	--	--	--	**179**	**314**
Turbidity, Lab	NTU	50	--	--	--	--	--	--	**210**	**280**

NOTES:

Detections above the 2021 MSGP are shaded in gray

-- Not collected prior to spring 2024

Detections at or above the RL are shown in bold

Detections greater than the MDL but less than the RL are shown in italics on white background with a J.

[1] - IDNR NPDES Parameters

[2] - 2021 MSGP benchmarks: 40 CFR Part 445 Subpart A RCRA Subtitle C Hazardous Waste Landfill (2023)

NS = no benchmark standard

Black Hawk County Landfill
SWPPP Results
Monitoring Location SW-2

Parameter Name	Units	2021 MSGP Benchmark	09/09/20		03/22/22		03/15/23		04/02/24	
Sample Type			Grab	Composite	Grab	Composite	Grab	Composite	Grab	Composite
Metals										
Aluminum	mg/L	1.1	--	--	--	--	--	--	**1.84**	**2.13**
Antimony	mg/L	0.64	--	--	--	--	--	--	<0.038	<0.038
Arsenic	mg/L	0.15	*0.00138 J*	*0.00132 J*	*0.000822 J*	<0.00075	<0.00075	<0.00075	<0.016	<0.016
Barium[1]	mg/L	NS	**0.0805**	**0.0779**	**0.126**	**0.122**	**0.127**	**0.125**	**0.0934**	**0.1**
Beryllium	mg/L	0.13	--	--	--	--	--	--	<0.0014	<0.0014
Cadmium	mg/L	0.0018	<0.0000490	<0.0000490	<0.000055	<0.000055	0.000059 J	<0.000055	<0.0039	<0.0039
Calcium[1]	mg/L	--	**62.4**	**59.6**	**116**	**114**	**124**	**123**	**119**	**121**
Chromium[1]	mg/L	0.016	<0.00110	<0.00110	*0.00314 J*	*0.00156 J*	<0.0011	<0.0011	<0.006	*0.00738 J*
Copper	mg/L	0.00519	--	--	--	--	--	--	*0.00828 J*	*0.00936 J*
Iron	mg/L	NS	**0.357**	**0.372**	**1.18**	**0.47**	**0.125**	**0.132**	**2.83**	**3.51**
Lead	mg/L	0.082	*0.000277 J*	*0.000285 J*	**0.00196**	**0.00135**	<0.00024	<0.00024	<0.024	<0.024
Magnesium	mg/L	NS	**16.5**	**15.8**	**27.1**	**26.8**	**33.6**	**33.4**	**29.8**	**30.2**
Magnesium, Dissolved	mg/L	NS	**14.6**	**16**	**29.6**	**29**	**32.4**	**33.2**	**27.4**	**26.2**
Mercury	mg/L	0.0014	<0.000100	<0.000100	<0.00011	<0.00011	<0.00014	<0.00014	<0.00014	<0.00014
Nickel	mg/L	0.47	--	--	--	--	--	--	<0.015	<0.015
Potassium[1]	mg/L	NS	**12.7**	**12**	**8.23**	**8.04**	**7.48**	**7.34**	**9.39**	**9.49**
Selenium	mg/L	0.0031	<0.00100	<0.00100	0.00105 J	*0.00116 J*	*0.000972 J*	<0.00096	<0.029	<0.029
Silver	mg/L	0.0032	<0.000370	<0.000370	<0.00049	<0.00049	<0.00049	<0.00049	<0.0091	<0.0091
Sodium[1]	mg/L	NS	**21.8**	**20.9**	**51.7**	**50.8**	**40.9**	**40.8**	**45.3**	**45.5**
Zinc	mg/L	0.12	--	--	--	--	--	--	*0.0355 J*	**0.043**
Nonmetallic Inorganics										
Ammonia (as N)	mg/L	2.14	<0.200	<0.200	*0.462 J*	<0.22	**0.752**	**0.824**	<0.22	<0.22
Biochemical Oxygen Demand	mg/L	30	--	--	--	--	--	--	<3	<3
Chemical Oxygen Demand	mg/L	120	**76.5**	**61.9**	<24	**34.8**	**58**	**53.2**	**25.6**	**40.5**
Chloride[1]	mg/L	0.629	**35.1**	**34.5**	**114**	**114**	**85.3**	**84.1**	**80.1**	**82.2**
Cyanide	mg/L	0.022	<0.00500	--	<0.0043	--	<0.0043	<0.0043	<0.0043	<0.0043
Nitrate Nitrite as N	mg/L	0.68	**0.473**	**0.478**	**2.2**	**2.17**	**4.47**	**3.78**	**1.6**	**1.66**
Sulfate[1]	mg/L	500	**46.8**	**46.7**	**108**	**104**	**107**	**104**	**176**	**179**
Total Phosphorus as P	mg/L	2	--	--	--	--	--	--	**0.142**	**0.233**
Organics										
HEM (Oil and Grease)[1]	mg/L	NS	<4.2	--	<4.7	--	<4.5	--	<4.7	<4.6
TOC[1]	mg/L	NS	**12.6**	**12**	**8.16**	**8.15**	**5.91**	**6.02**	**9.3**	**9.35**
Organics, Semivolatile										
Alpha-Terpineol[2]	µg/L	42	--	--	--	--	--	--	<3.09	<3.3
Aniline[2]	µg/L	24	--	--	--	--	--	--	*1.26 J*	*1.26 J*
Benzoic acid[2]	µg/L	119	--	--	--	--	--	--	<18.1	<19.3
Naphthalene[2]	µg/L	59	--	--	--	--	--	--	<6.49	<6.93
p-Cresol[2]	µg/L	24	--	--	--	--	--	--	<0.745	<0.795
Phenol[2]	µg/L	48	--	--	--	--	--	--	<1.17	<1.25
Pyridine[2]	µg/L	72	--	--	--	--	--	--	<1.7	<1.82
Other Chemical Properties										
Bicarbonate Alkalinity as $CaCO_3$[1]	mg/L	NS	--	--	**245**	**284**	**298**	**296**	**111**	**244**
Carbonate Alkalinity as $CaCO_3$	mg/L	NS	--	--	<4.6	<4.6	<2.3	<2.3	--	--
Hydroxide Alkalinity as $CaCO_3$	mg/L	NS	--	--	<4.6	<4.6	<2.3	<2.3	--	--
pH	SU	6.0 - 9.0	**8.1**	--	**7.8**	**7.8**	**7.9**	--	**7.8**	**7.8**
Phenolphthalein Alkalinity as $CaCO_3$	mg/L	NS	--	--	<4.6	<4.6	<2.3	<2.3	<2.5	<2.5
Total Alkalinity as $CaCO_3$	mg/L	20	**158**	**158**	**245**	**284**	**298**	**296**	**111**	**244**
Total Dissolved Solids[1]	mg/L	NS	**306**	**324**	**548**	**510**	**566**	**544**	**610**	**610**
Total hardness as $CaCO_3$	mg/L	NS	--	--	--	--	--	--	**420**	**427**
Total Suspended Solids	mg/L	100	--	--	--	--	--	--	**95**	**138**
Turbidity, Lab	NTU	50	--	--	--	--	--	--	**150**	**160**

NOTES:

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-- Not collected prior to spring 2024

Detections at or above the RL are shown in bold

Detections greater than the MDL but less than the RL are shown in italics on white background with a J.

[1] - IDNR NPDES Parameters

[2] - 2021 MSGP benchmarks: 40 CFR Part 445 Subpart A RCRA Subtitle C Hazardous Waste Landfill (2023)

NS = no benchmark standard

Black Hawk County Landfill
SWPPP Results
Monitoring Location SW-3

Parameter Name	Units	2021 MSGP Benchmark	09/09/20		03/22/22		03/15/23		04/02/24	
Sample Type			Grab	Composite	Grab	Composite	Grab	Composite	Grab	Composite
Metals										
Aluminum	mg/L	1.1	--	--	--	--	--	--	**0.416**	**0.211**
Antimony	mg/L	0.64	--	--	--	--	--	--	<0.038	<0.038
Arsenic	mg/L	0.15	<0.000880	<0.000880	**0.00204**	*0.00116 J*	*0.000836 J*	*0.00084 J*	<0.016	<0.016
Barium[1]	mg/L	NS	**0.0645**	**0.0654**	**0.102**	**0.0815**	**0.0912**	**0.0884**	**0.0802**	**0.076**
Beryllium	mg/L	0.13	--	--	--	--	--	--	<0.0014	<0.0014
Cadmium	mg/L	0.0018	<0.0000490	*0.000079 J*	*0.000076 J*	<0.000055	<0.000055	<0.000055	<0.0039	<0.0039
Calcium[1]	mg/L	--	**143**	**145**	**146**	**208**	**211**	**221**	**247**	**237**
Chromium[1]	mg/L	0.016	*0.0012 J*	*0.00124 J*	*0.00201 J*	<0.0011	<0.0011	<0.0011	<0.006	<0.006
Copper	mg/L	0.00519	--	--	--	--	--	--	<0.0049	<0.0049
Iron	mg/L	NS	**0.885**	**0.835**	**1.91**	**0.519**	**0.321**	**0.348**	**0.886**	**0.597**
Lead	mg/L	0.082	**0.000526**	*0.000464 J*	**0.00146**	*0.000394 J*	<0.00024	<0.00024	<0.024	<0.024
Magnesium	mg/L	NS	**28**	**27.9**	**30.2**	**45.7**	**53.4**	**55.7**	**63.1**	**60.6**
Magnesium, Dissolved	mg/L	NS	**28.1**	**28.8**	**31.4**	**49.8**	**48.8**	**53.3**	**57.7**	**55.6**
Mercury	mg/L	0.0014	<0.000100	<0.000100	<0.00011	<0.00011	<0.00014	<0.00014	<0.00014	<0.00014
Nickel	mg/L	0.47	--	--	--	--	--	--	<0.015	<0.015
Potassium[1]	mg/L	NS	**5.78**	**5.75**	**18**	**11**	**6.4**	**6.62**	**5.34**	**5.06**
Selenium	mg/L	0.0031	*0.00119 J*	*0.00126 J*	*0.000997 J*	*0.001 J*	<0.00096	<0.00096	<0.029	<0.029
Silver	mg/L	0.0032	<0.000370	<0.000370	*0.000556 J*	<0.00049	<0.00049	<0.00049	<0.0091	<0.0091
Sodium[1]	mg/L	NS	**18.8**	**18.8**	**6.98**	**22.6**	**26.2**	**27.6**	**20.7**	**20**
Zinc	mg/L	0.12	--	--	--	--	--	--	*<0.0160*	*<0.0160*
Nonmetallic Inorganics										
Ammonia (as N)	mg/L	2.14	<0.200	<0.200	*0.276 J*	**0.922**	*0.471 J*	*0.476 J*	<0.22	<0.22
Biochemical Oxygen Demand	mg/L	30	--	--	--	--	--	--	<3	<3
Chemical Oxygen Demand	mg/L	120	**69.7**	<24.0	<24	<24	**64.5**	**53.2**	<24	**27.3**
Chloride[1]	mg/L	0.629	**32.7**	**33.2**	**11.2**	**35.3**	**34.4**	**34.4**	**32**	**31.4**
Cyanide	mg/L	0.022	<0.00500	--	<0.0043	--	<0.0043	<0.0043	<0.0043	<0.0043
Nitrate Nitrite as N	mg/L	0.68	**1.36**	**1.46**	**0.861**	**2.53**	**5.36**	**4.54**	**3.35**	**3.43**
Sulfate[1]	mg/L	500	**278**	**283**	**206**	**358**	**392**	**403**	**562**	**553**
Total Phosphorus as P	mg/L	2	--	--	--	--	--	--	*0.0731 J*	*0.0643 J*
Organics										
HEM (Oil and Grease)[1]	mg/L	NS	<4.5	--	<4.5	--	<4.2	--	<5	<4.6
TOC[1]	mg/L	NS	**7.77**	**7.57**	**14.9**	**11.3**	**6.25**	**6.87**	**6.89**	**6.64**
Organics, Semivolatile										
Alpha-Terpineol[2]	µg/L	42	--	--	--	--	--	--	<3.45	<3.15
Aniline[2]	µg/L	24	--	--	--	--	--	--	<0.417	<0.38
Benzoic acid[2]	µg/L	119	--	--	--	--	--	--	<20.2	<18.5
Naphthalene[2]	µg/L	59	--	--	--	--	--	--	<7.26	<6.63
p-Cresol[2]	µg/L	24	--	--	--	--	--	--	<0.833	<0.761
Phenol[2]	µg/L	48	--	--	--	--	--	--	<1.31	<1.2
Pyridine[2]	µg/L	72	--	--	--	--	--	--	<1.9	<1.74
Other Chemical Properties										
Bicarbonate Alkalinity as $CaCO_3$[1]	mg/L	NS	--	--	**294**	**392**	**338**	**350**	**249**	**245**
Carbonate Alkalinity as $CaCO_3$	mg/L	NS	--	--	<4.6	<4.6	<2.3	<2.3	--	--
Hydroxide Alkalinity as $CaCO_3$	mg/L	NS	--	--	<4.6	<4.6	<2.3	<2.3	--	--
pH	SU	6.0 - 9.0	**7.9**	--	**7.7**	**7.6**	**7.6**	--	**7.5**	**7.5**
Phenolphthalein Alkalinity as $CaCO_3$	mg/L	NS	--	--	<4.6	<4.6	<2.3	<2.3	<2.5	<2.5
Total Alkalinity as $CaCO_3$	mg/L	20	**158**	**168**	**294**	**392**	**338**	**350**	**249**	**245**
Total Dissolved Solids[1]	mg/L	NS	--	**684**	**574**	**868**	**942**	**986**	**1110**	**1120**
Total hardness as $CaCO_3$	mg/L	NS	--	--	--	--	--	--	**877**	**841**
Total Suspended Solids	mg/L	100	--	--	--	--	--	--	**69.3**	**34**
Turbidity, Lab	NTU	50	--	--	--	--	--	--	**25**	**14**

NOTES:

Detections above the 2021 MSGP are shaded in gray

-- Not collected prior to spring 2024

Detections at or above the RL are shown in bold

Detections greater than the MDL but less than the RL are shown in italics on white background with a J.

[1] - IDNR NPDES Parameters

[2] - 2021 MSGP benchmarks: 40 CFR Part 445 Subpart A RCRA Subtitle C Hazardous Waste Landfill (2023)

NS = no benchmark standard

Black Hawk County Landfill
SWPPP Results
Monitoring Location SW-4

Parameter Name	Units	2021 MSGP Benchmark	09/09/20		03/22/22		03/15/23		04/02/24	
Sample Type			Grab	Composite	Grab	Composite	Grab	Composite	Grab	Composite
Metals										
Aluminum	mg/L	1.1	--	--	--	--	--	--	**1.76**	**1.67**
Antimony	mg/L	0.64	--	--	--	--	--	--	<0.038	<0.038
Arsenic	mg/L	0.15	*0.00165 J*	*0.00142 J*	*0.00098 J*	*0.000807 J*	**0.00203**	**0.00303**	<0.016	<0.016
Barium[1]	mg/L	NS	**0.0722**	**0.0657**	**0.0698**	**0.0668**	**0.129**	**0.0644**	**0.0555**	**0.0542**
Beryllium	mg/L	0.13	--	--	--	--	--	--	<0.0014	<0.0014
Cadmium	mg/L	0.0018	*0.000061 J*	*0.000056 J*	*0.000057 J*	<0.000055	**0.00131**	**0.000289**	<0.0039	<0.0039
Calcium1	mg/L	--	**119**	**103**	**141**	**140**	**600**	**210**	**111**	**110**
Chromium[1]	mg/L	0.016	*0.00308 J*	*0.00284 J*	*0.0014 J*	<0.0011	0.00352 J	**0.00536**	<0.006	<0.006
Copper	mg/L	0.00519	--	--	--	--	--	--	*0.00703 J*	*0.00643 J*
Iron	mg/L	NS	**2.64**	**2.32**	**1.77**	**1.38**	**2.56**	**5.3**	**2.46**	**2.29**
Lead	mg/L	0.082	**0.00175**	**0.0015**	**0.0014**	**0.00137**	**0.00101**	**0.00519**	<0.024	<0.024
Magnesium	mg/L	NS	**26.6**	**22.2**	**34.3**	**33.6**	**60.6**	**44.8**	**24.2**	**23.9**
Magnesium, Dissolved	mg/L	NS	**25.8**	**26.8**	**36.7**	**37.2**	**41.7**	**43.2**	**22.4**	**22**
Mercury	mg/L	0.0014	<0.000100	<0.000100	<0.00011	<0.00011	<0.00014	<0.00014	<0.00014	<0.00014
Nickel	mg/L	0.47	--	--	--	--	--	--	<0.015	<0.015
Potassium1	mg/L	NS	**7.12**	**5.34**	**6.94**	**6.73**	**10.3**	**8.32**	**5.57**	**5.47**
Selenium	mg/L	0.0031	*0.00144 J*	*0.00125 J*	*0.00127 J*	*0.00133 J*	*0.00342 J*	*0.00398 J*	<0.029	<0.029
Silver	mg/L	0.0032	<0.000370	<0.000370	<0.00049	<0.00049	<0.00049	<0.00049	<0.0091	<0.0091
Sodium[1]	mg/L	NS	**27.6**	**22.3**	**25.9**	**25.1**	**29.2**	**26.6**	**12**	**11.9**
Zinc	mg/L	0.12	--	--	--	--	--	--	*<0.0160*	*<0.0160*
Nonmetallic Inorganics										
Ammonia (as N)	mg/L	2.14	**0.654**	**0.702**	**1.51**	**1.36**	**5.25**	**3.5**	*0.378 J*	*0.423 J*
Biochemical Oxygen Demand	mg/L	30	--	--	--	--	--	--	**4.03**	**7.59**
Chemical Oxygen Demand	mg/L	120	**63**	**44.8**	<24	**27.4**	**128**	**54.8**	**45.5**	**60.4**
Chloride[1]	mg/L	0.629	**42.4**	**40.9**	**49.8**	**50.3**	**31.6**	**28.6**	**19.3**	**19.7**
Cyanide	mg/L	0.022	<0.00500	--	<0.0043	--	<0.0043	<0.0043	<0.0043	<0.0043
Nitrate Nitrite as N	mg/L	0.68	**0.213**	**0.167**	**1.47**	**1.5**	**0.352**	**0.537**	**0.366**	**0.421**
Sulfate1	mg/L	500	**239**	**283**	**191**	**192**	**530**	**455**	**294**	**297**
Total Phosphorus as P	mg/L	2	--	--	--	--	--	--	**0.112**	**0.109**
Organics										
HEM (Oil and Grease)[1]	mg/L	NS	<4.3	--	<4.4	--	<5.6	--	<4.7	<5
TOC[1]	mg/L	NS	**6.67**	**6.84**	**8.01**	**7.75**	**20.6**	**18.5**	**16.4**	**16.3**
Organics, Semivolatile	mg/L									
Alpha-Terpineol[2]	µg/L	42	--	--	--	--	--	--	<3.09	<2.96
Aniline[2]	µg/L	24	--	--	--	--	--	--	*7.84 J*	*8.43 J*
Benzoic acid[2]	µg/L	119	--	--	--	--	--	--	<18.1	<17.3
Naphthalene[2]	µg/L	59	--	--	--	--	--	--	<6.49	<6.22
p-Cresol[2]	µg/L	24	--	--	--	--	--	--	<0.745	<0.714
Phenol[2]	µg/L	48	--	--	--	--	--	--	<1.17	<1.12
Pyridine[2]	µg/L	72	--	--	--	--	--	--	<1.7	<1.63
Other Chemical Properties										
Bicarbonate Alkalinity as $CaCO_3$[1]	mg/L	NS	--	--	**294**	**294**	**206**	**184**	**86.6**	**75.8**
Carbonate Alkalinity as $CaCO_3$	mg/L	NS	--	--	<4.6	<4.6	<2.3	<2.3	--	--
Hydroxide Alkalinity as $CaCO_3$	mg/L	NS	--	--	<4.6	<4.6	<2.3	<2.3	--	--
pH	SU	6.0 - 9.0	**8**	--	**7.8**	**7.8**	**7.7**	--	**7.7**	**7.8**
Phenolphthalein Alkalinity as $CaCO_3$	mg/L	NS	--	--	<4.6	<4.6	<2.3	<2.3	<2.5	<2.5
Total Alkalinity as $CaCO_3$	mg/L	20	**158**	**178**	**294**	**294**	**206**	**184**	**86.6**	**75.8**
Total Dissolved Solids[1]	mg/L	NS	**608**	**536**	**588**	**600**	**994**	**884**	**542**	**548**
Total hardness as $CaCO_3$	mg/L	NS	--	--	--	--	--	--	**377**	**373**
Total Suspended Solids	mg/L	100	--	--	--	--	--	--	**116**	**82**
Turbidity, Lab	NTU	50	--	--	--	--	--	--	**17**	**95**

NOTES:
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-- Not collected prior to spring 2024
Detections at or above the RL are shown in bold
Detections greater than the MDL but less than the RL are shown in italics on white background with a J.
[1] - IDNR NPDES Parameters
[2] - 2021 MSGP benchmarks: 40 CFR Part 445 Subpart A RCRA Subtitle C Hazardous Waste Landfill (2023)
NS = no benchmark standard

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ANALYTICAL REPORT

PREPARED FOR

Attn: Craig Chumbley
AECOM
501 Sycamore Street
Suite #222
Waterloo, Iowa 50703

Generated 4/25/2024 12:40:21 PM Revision 1

JOB DESCRIPTION

Black Hawk Co. SWPPP Sampling

JOB NUMBER

310-277937-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

my EOL

Job Notes

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The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



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Job Narrative
310-277937-1

REVISION

The report being provided is a revision of the original report sent on 4/16/2024. The report (revision 1) is being revised due to This report was revised 4/25/2024. Zn was not analyzed due to project setup error..

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 4/2/2024 2:15 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.9°C.

GC/MS Semi VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

HPLC/IC
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
Method SM5210B_Calc: The USB dilution water D.O. depletion was greater than 0.2 mg/L. The associated sample results in batch 310-417646 are qualified and reported. The USB depletion was 0.815 mg/L.

Method SM5210B_Calc: The glucose-glutamic acid standard (LCS) recovered outside the recovery limits specified in the method in batch 310-417646. The method holding time had expired, therefore the analysis was not repeated. The data was qualified and reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Sample Summary

Client: AECOM
Job ID: 310-277937-1
Project/Site: Black Hawk Co. SWPPP Sampling

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-277937-1	SW-1	Water	04/02/24 08:30	04/02/24 14:15
310-277937-2	SW-1	Water	04/02/24 10:30	04/02/24 14:15

Detection Summary

Client: AECOM
Job ID: 310-277937-1
Project/Site: Black Hawk Co. SWPPP Sampling

Client Sample ID: SW-1 — Lab Sample ID: 310-277937-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	22.4		10.0	4.50	mg/L	10		300.0	Total/NA
Sulfate	348		10.0	4.20	mg/L	10		300.0	Total/NA
Aluminum	3.21		0.100	0.0250	mg/L	1		200.7 Rev 4.4	Total/NA
Barium	0.0788		0.0100	0.00200	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	151		1.00	0.330	mg/L	1		200.7 Rev 4.4	Total/NA
Copper	0.00803	J	0.0200	0.00490	mg/L	1		200.7 Rev 4.4	Total/NA
Iron	4.77		0.500	0.0930	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	32.8		1.00	0.250	mg/L	1		200.7 Rev 4.4	Total/NA
Potassium	9.01		2.00	0.880	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	14.0		2.00	1.20	mg/L	1		200.7 Rev 4.4	Total/NA
Zinc	0.104		0.0400	0.0160	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	28.1		1.00	0.250	mg/L	1		200.7 Rev 4.4	Dissolved
Total hardness as CaCO3	512		4.12	1.03	mg/L	1		SM 2340B	Total/NA
Turbidity	210		10	2.0	NTU	10		180.1	Total/NA
Ammonia	0.398	J	0.500	0.220	mg/L	1		350.1	Total/NA
Nitrate Nitrite as N	0.639		0.100	0.0540	mg/L	1		353.2	Total/NA
Total Phosphorus as P	0.491		0.100	0.0620	mg/L	1		365.1	Total/NA
Total Suspended Solids	179		15.0	5.10	mg/L	1		I-3765-85	Total/NA
Alkalinity, Total (As CaCO3)	163		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Alkalinity, Bicarbonate (As CaCO3)	163		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	640		250	170	mg/L	1		SM 2540C	Total/NA
pH	7.8	HF	1.0	1.0	SU	1		SM 4500 H+ B	Total/NA
Chemical Oxygen Demand	47.2		25.0	24.0	mg/L	5		SM 5220D	Total/NA
Total Organic Carbon	9.78		1.00	0.230	mg/L	1		SM 5310C	Total/NA

Client Sample ID: SW-1 — Lab Sample ID: 310-277937-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	22.7		10.0	4.50	mg/L	10		300.0	Total/NA
Sulfate	351		10.0	4.20	mg/L	10		300.0	Total/NA
Aluminum	3.49		0.100	0.0250	mg/L	1		200.7 Rev 4.4	Total/NA
Barium	0.0816		0.0100	0.00200	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	155		1.00	0.330	mg/L	1		200.7 Rev 4.4	Total/NA
Chromium	0.00629	J	0.0200	0.00600	mg/L	1		200.7 Rev 4.4	Total/NA
Copper	0.00723	J	0.0200	0.00490	mg/L	1		200.7 Rev 4.4	Total/NA
Iron	5.20		0.500	0.0930	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	33.6		1.00	0.250	mg/L	1		200.7 Rev 4.4	Total/NA
Potassium	9.25		2.00	0.880	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	14.5		2.00	1.20	mg/L	1		200.7 Rev 4.4	Total/NA
Zinc	0.108		0.0400	0.0160	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	29.1		1.00	0.250	mg/L	1		200.7 Rev 4.4	Dissolved
Total hardness as CaCO3	525		4.12	1.03	mg/L	1		SM 2340B	Total/NA
Turbidity	280		10	2.0	NTU	10		180.1	Total/NA
Ammonia	0.456	J	0.500	0.220	mg/L	1		350.1	Total/NA
Nitrate Nitrite as N	0.734		0.100	0.0540	mg/L	1		353.2	Total/NA
Total Phosphorus as P	0.328		0.100	0.0620	mg/L	1		365.1	Total/NA
Total Suspended Solids	314		30.0	10.2	mg/L	1		I-3765-85	Total/NA
Alkalinity, Total (As CaCO3)	184		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Alkalinity, Bicarbonate (As CaCO3)	184		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	570		250	170	mg/L	1		SM 2540C	Total/NA
pH	7.8	HF	1.0	1.0	SU	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: AECOM
Job ID: 310-277937-1
Project/Site: Black Hawk Co. SWPPP Sampling

Client Sample ID: SW-1 (Continued)
Lab Sample ID: 310-277937-2

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Biochemical Oxygen Demand	3.00	b *-	3.00	3.00	mg/L	1		SM 5210B	Total/NA
Chemical Oxygen Demand	37.2		25.0	24.0	mg/L	5		SM 5220D	Total/NA
Total Organic Carbon	10.8		1.00	0.230	mg/L	1		SM 5310C	Total/NA

This Detection Summary does not include radiochemical test results.

Client: AECOM
Job ID: 310-277937-1
Project/Site: Black Hawk Co. SWPPP Sampling

Client Sample ID: SW-1
Lab Sample ID: 310-277937-1
Date Collected: 04/02/24 08:30
Matrix: Water
Date Received: 04/02/24 14:15

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alpha-Terpineol	<2.90		10.0	2.90	ug/L		04/05/24 10:59	04/11/24 15:39	1
Aniline	<0.350		10.0	0.350	ug/L		04/05/24 10:59	04/11/24 15:39	1
Benzoic acid	<17.0		100	17.0	ug/L		04/05/24 10:59	04/11/24 15:39	1
Naphthalene	<6.10		10.0	6.10	ug/L		04/05/24 10:59	04/11/24 15:39	1
p-Cresol	<0.700		10.0	0.700	ug/L		04/05/24 10:59	04/11/24 15:39	1
Phenol	<1.10		10.0	1.10	ug/L		04/05/24 10:59	04/11/24 15:39	1
Pyridine	<1.60		10.0	1.60	ug/L		04/05/24 10:59	04/11/24 15:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorophenol (Surr)	*68*		*25 - 110*	*04/05/24 10:59*	*04/11/24 15:39*	*1*
Phenol-d5 (Surr)	*57*		*21 - 110*	*04/05/24 10:59*	*04/11/24 15:39*	*1*
2,4,6-Tribromophenol (Surr)	*98*		*27 - 136*	*04/05/24 10:59*	*04/11/24 15:39*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**22.4**		10.0	4.50	mg/L			04/04/24 14:32	10
Sulfate	**348**		10.0	4.20	mg/L			04/04/24 14:32	10

Method: EPA 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**3.21**		0.100	0.0250	mg/L		04/03/24 09:30	04/04/24 15:34	1
Antimony	<0.0380		0.100	0.0380	mg/L		04/03/24 09:30	04/04/24 15:34	1
Arsenic	<0.0160		0.0800	0.0160	mg/L		04/03/24 09:30	04/04/24 15:34	1
Barium	**0.0788**		0.0100	0.00200	mg/L		04/03/24 09:30	04/04/24 15:34	1
Beryllium	<0.00140		0.0100	0.00140	mg/L		04/03/24 09:30	04/04/24 15:34	1
Cadmium	<0.00390		0.0200	0.00390	mg/L		04/03/24 09:30	04/04/24 15:34	1
Calcium	**151**		1.00	0.330	mg/L		04/03/24 09:30	04/04/24 15:34	1
Chromium	<0.00600		0.0200	0.00600	mg/L		04/03/24 09:30	04/04/24 15:34	1
Copper	**0.00803**	**J**	0.0200	0.00490	mg/L		04/03/24 09:30	04/04/24 15:34	1
Iron	**4.77**		0.500	0.0930	mg/L		04/03/24 09:30	04/04/24 15:34	1
Lead	<0.0240		0.100	0.0240	mg/L		04/03/24 09:30	04/04/24 15:34	1
Magnesium	**32.8**		1.00	0.250	mg/L		04/03/24 09:30	04/04/24 15:34	1
Nickel	<0.0150		0.0500	0.0150	mg/L		04/03/24 09:30	04/04/24 15:34	1
Potassium	**9.01**		2.00	0.880	mg/L		04/03/24 09:30	04/04/24 15:34	1
Selenium	<0.0290		0.100	0.0290	mg/L		04/03/24 09:30	04/04/24 15:34	1
Silver	<0.00910		0.0200	0.00910	mg/L		04/03/24 09:30	04/04/24 15:34	1
Sodium	**14.0**		2.00	1.20	mg/L		04/03/24 09:30	04/05/24 14:46	1
Zinc	**0.104**		0.0400	0.0160	mg/L		04/03/24 09:30	04/04/24 15:34	1

Method: EPA 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Magnesium	**28.1**		1.00	0.250	mg/L			04/04/24 12:19	1

Method: EPA 245.2 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000140		0.000200	0.000140	mg/L		04/05/24 14:06	04/08/24 13:55	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total hardness as CaCO3	**512**		4.12	1.03	mg/L			04/04/24 15:34	1

Client Sample Results

Client: AECOM
Job ID: 310-277937-1
Project/Site: Black Hawk Co. SWPPP Sampling

Client Sample ID: SW-1
Lab Sample ID: 310-277937-1
Date Collected: 04/02/24 08:30
Matrix: Water
Date Received: 04/02/24 14:15

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease) (1664A)	<4.7		5.4	4.7	mg/L		04/04/24 14:00	04/04/24 14:00	1
Turbidity (EPA 180.1)	**210**		10	2.0	NTU			04/02/24 15:21	10
Cyanide, Total (EPA 335.4)	<0.00430		0.0100	0.00430	mg/L		04/03/24 09:59	04/03/24 21:31	1
Ammonia (EPA 350.1)	**0.398**	**J**	0.500	0.220	mg/L		04/04/24 08:32	04/04/24 19:10	1
Nitrate Nitrite as N (EPA 353.2)	**0.639**		0.100	0.0540	mg/L			04/04/24 11:35	1
Total Phosphorus as P (EPA 365.1)	**0.491**		0.100	0.0620	mg/L		04/03/24 08:32	04/03/24 18:20	1
Total Suspended Solids (USGS I-3765-85)	**179**		15.0	5.10	mg/L			04/05/24 14:20	1
Alkalinity, Total (As CaCO3) (SM 2320B)	**163**		5.00	2.50	mg/L			04/03/24 16:01	1
Alkalinity, Bicarbonate (As CaCO3) (SM 2320B)	**163**		5.00	2.50	mg/L			04/03/24 16:01	1
Phenolphthalein Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			04/03/24 16:01	1
Total Dissolved Solids (SM 2540C)	**640**		250	170	mg/L			04/03/24 16:46	1
Chemical Oxygen Demand (SM 5220D)	**47.2**		25.0	24.0	mg/L			04/05/24 10:12	5
Total Organic Carbon (SM 5310C)	**9.78**		1.00	0.230	mg/L			04/09/24 15:59	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**7.8**	**HF**	1.0	1.0	SU			04/02/24 17:40	1
Biochemical Oxygen Demand (SM 5210B)	<3.00	*-	3.00	3.00	mg/L			04/03/24 07:57	1

Client: AECOM
Job ID: 310-277937-1
Project/Site: Black Hawk Co. SWPPP Sampling

Client Sample ID: SW-1
Lab Sample ID: 310-277937-2
Date Collected: 04/02/24 10:30
Matrix: Water
Date Received: 04/02/24 14:15

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alpha-Terpineol	<2.90		10.0	2.90	ug/L		04/05/24 10:59	04/11/24 16:05	1
Aniline	<0.350		10.0	0.350	ug/L		04/05/24 10:59	04/11/24 16:05	1
Benzoic acid	<17.0		100	17.0	ug/L		04/05/24 10:59	04/11/24 16:05	1
Naphthalene	<6.10		10.0	6.10	ug/L		04/05/24 10:59	04/11/24 16:05	1
p-Cresol	<0.700		10.0	0.700	ug/L		04/05/24 10:59	04/11/24 16:05	1
Phenol	<1.10		10.0	1.10	ug/L		04/05/24 10:59	04/11/24 16:05	1
Pyridine	<1.60		10.0	1.60	ug/L		04/05/24 10:59	04/11/24 16:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorophenol (Surr)	*72*		*25 - 110*	*04/05/24 10:59*	*04/11/24 16:05*	*1*
Phenol-d5 (Surr)	*62*		*21 - 110*	*04/05/24 10:59*	*04/11/24 16:05*	*1*
2,4,6-Tribromophenol (Surr)	*99*		*27 - 136*	*04/05/24 10:59*	*04/11/24 16:05*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**22.7**		10.0	4.50	mg/L			04/04/24 14:46	10
Sulfate	**351**		10.0	4.20	mg/L			04/04/24 14:46	10

Method: EPA 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**3.49**		0.100	0.0250	mg/L		04/03/24 09:30	04/04/24 15:36	1
Antimony	<0.0380		0.100	0.0380	mg/L		04/03/24 09:30	04/04/24 15:36	1
Arsenic	<0.0160		0.0800	0.0160	mg/L		04/03/24 09:30	04/04/24 15:36	1
Barium	**0.0816**		0.0100	0.00200	mg/L		04/03/24 09:30	04/04/24 15:36	1
Beryllium	<0.00140		0.0100	0.00140	mg/L		04/03/24 09:30	04/04/24 15:36	1
Cadmium	<0.00390		0.0200	0.00390	mg/L		04/03/24 09:30	04/04/24 15:36	1
Calcium	**155**		1.00	0.330	mg/L		04/03/24 09:30	04/04/24 15:36	1
Chromium	**0.00629**	**J**	0.0200	0.00600	mg/L		04/03/24 09:30	04/04/24 15:36	1
Copper	**0.00723**	**J**	0.0200	0.00490	mg/L		04/03/24 09:30	04/04/24 15:36	1
Iron	**5.20**		0.500	0.0930	mg/L		04/03/24 09:30	04/04/24 15:36	1
Lead	<0.0240		0.100	0.0240	mg/L		04/03/24 09:30	04/04/24 15:36	1
Magnesium	**33.6**		1.00	0.250	mg/L		04/03/24 09:30	04/04/24 15:36	1
Nickel	<0.0150		0.0500	0.0150	mg/L		04/03/24 09:30	04/04/24 15:36	1
Potassium	**9.25**		2.00	0.880	mg/L		04/03/24 09:30	04/04/24 15:36	1
Selenium	<0.0290		0.100	0.0290	mg/L		04/03/24 09:30	04/04/24 15:36	1
Silver	<0.00910		0.0200	0.00910	mg/L		04/03/24 09:30	04/04/24 15:36	1
Sodium	**14.5**		2.00	1.20	mg/L		04/03/24 09:30	04/05/24 14:48	1
Zinc	**0.108**		0.0400	0.0160	mg/L		04/03/24 09:30	04/04/24 15:36	1

Method: EPA 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Magnesium	**29.1**		1.00	0.250	mg/L			04/04/24 12:23	1

Method: EPA 245.2 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000140		0.000200	0.000140	mg/L		04/05/24 14:06	04/08/24 13:58	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total hardness as CaCO3	**525**		4.12	1.03	mg/L			04/04/24 15:36	1

Client Sample Results

Client: AECOM
Job ID: 310-277937-1
Project/Site: Black Hawk Co. SWPPP Sampling

Client Sample ID: SW-1
Lab Sample ID: 310-277937-2
Date Collected: 04/02/24 10:30
Matrix: Water
Date Received: 04/02/24 14:15

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease) (1664A)	<4.7		5.4	4.7	mg/L		04/04/24 14:00	04/04/24 14:00	1
Turbidity (EPA 180.1)	**280**		10	2.0	NTU			04/02/24 15:23	10
Cyanide, Total (EPA 335.4)	<0.00430		0.0100	0.00430	mg/L		04/03/24 09:59	04/03/24 21:23	1
Ammonia (EPA 350.1)	**0.456**	**J**	0.500	0.220	mg/L		04/04/24 08:32	04/04/24 19:10	1
Nitrate Nitrite as N (EPA 353.2)	**0.734**		0.100	0.0540	mg/L			04/10/24 01:39	1
Total Phosphorus as P (EPA 365.1)	**0.328**		0.100	0.0620	mg/L		04/03/24 08:32	04/03/24 18:20	1
Total Suspended Solids (USGS I-3765-85)	**314**		30.0	10.2	mg/L			04/05/24 18:06	1
Alkalinity, Total (As CaCO3) (SM 2320B)	**184**		5.00	2.50	mg/L			04/03/24 16:17	1
Alkalinity, Bicarbonate (As CaCO3) (SM 2320B)	**184**		5.00	2.50	mg/L			04/03/24 16:17	1
Phenolphthalein Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			04/03/24 16:17	1
Total Dissolved Solids (SM 2540C)	**570**		250	170	mg/L			04/03/24 16:46	1
Chemical Oxygen Demand (SM 5220D)	**37.2**		25.0	24.0	mg/L			04/05/24 10:12	5
Total Organic Carbon (SM 5310C)	**10.8**		1.00	0.230	mg/L			04/09/24 17:11	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**7.8**	**HF**	1.0	1.0	SU			04/02/24 17:40	1
Biochemical Oxygen Demand (SM 5210B)	**3.00**	**b *-**	3.00	3.00	mg/L			04/03/24 08:02	1

Definitions/Glossary

Client: AECOM
Job ID: 310-277937-1
Project/Site: Black Hawk Co. SWPPP Sampling

Qualifiers

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
*-	LCS and/or LCSD is outside acceptance limits, low biased.
b	Result Detected in the Unseeded Control blank (USB).
HF	Parameter with a holding time of 15 minutes. Test performed by laboratory at client's request. Sample was analyzed outside of hold time.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Surrogate Summary

Client: AECOM
Job ID: 310-277937-1
Project/Site: Black Hawk Co. SWPPP Sampling

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		2FP	PHL	TBP
Lab Sample ID	Client Sample ID	(25-110)	(21-110)	(27-136)
310-277937-1	SW-1	68	57	98
310-277937-2	SW-1	72	62	99
LCS 310-417988/2-A	Lab Control Sample	80	64	130
LCSD 310-417988/3-A	Lab Control Sample Dup	66	54	108
MB 310-417988/1-A	Method Blank	75	59	120

Surrogate Legend

2FP = 2-Fluorophenol (Surr)
PHL = Phenol-d5 (Surr)
TBP = 2,4,6-Tribromophenol (Surr)

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 310-417988/1-A
Matrix: Water
Analysis Batch: 418426

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 417988

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alpha-Terpineol	<2.90		10.0	2.90	ug/L		04/05/24 10:59	04/11/24 13:02	1
Aniline	<0.350		10.0	0.350	ug/L		04/05/24 10:59	04/11/24 13:02	1
Benzoic acid	<17.0		100	17.0	ug/L		04/05/24 10:59	04/11/24 13:02	1
Naphthalene	<6.10		10.0	6.10	ug/L		04/05/24 10:59	04/11/24 13:02	1
p-Cresol	<0.700		10.0	0.700	ug/L		04/05/24 10:59	04/11/24 13:02	1
Phenol	<1.10		10.0	1.10	ug/L		04/05/24 10:59	04/11/24 13:02	1
Pyridine	<1.60		10.0	1.60	ug/L		04/05/24 10:59	04/11/24 13:02	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorophenol (Surr)	*75*		*25 - 110*	*04/05/24 10:59*	*04/11/24 13:02*	*1*
Phenol-d5 (Surr)	*59*		*21 - 110*	*04/05/24 10:59*	*04/11/24 13:02*	*1*
2,4,6-Tribromophenol (Surr)	*120*		*27 - 136*	*04/05/24 10:59*	*04/11/24 13:02*	*1*

Lab Sample ID: LCS 310-417988/2-A
Matrix: Water
Analysis Batch: 418426

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 417988

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aniline	100	94.44		ug/L		94	10 - 140
Naphthalene	100	70.99		ug/L		71	38 - 110
p-Cresol	100	88.82		ug/L		89	46 - 117
Phenol	100	52.81		ug/L		53	29 - 110
Pyridine	200	130.9		ug/L		65	10 - 110

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorophenol (Surr)	*80*		*25 - 110*
Phenol-d5 (Surr)	*64*		*21 - 110*
2,4,6-Tribromophenol (Surr)	*130*		*27 - 136*

Lab Sample ID: LCSD 310-417988/3-A
Matrix: Water
Analysis Batch: 418426

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 417988

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aniline	100	82.40		ug/L		82	10 - 140	14	35
Naphthalene	100	59.81		ug/L		60	38 - 110	17	35
p-Cresol	100	76.83		ug/L		77	46 - 117	14	35
Phenol	100	47.45		ug/L		47	29 - 110	11	35
Pyridine	200	111.3		ug/L		56	10 - 110	16	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorophenol (Surr)	*66*		*25 - 110*
Phenol-d5 (Surr)	*54*		*21 - 110*
2,4,6-Tribromophenol (Surr)	*108*		*27 - 136*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 310-418009/3
Matrix: Water
Analysis Batch: 418009

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.450		1.00	0.450	mg/L			04/04/24 09:21	1
Sulfate	<0.420		1.00	0.420	mg/L			04/04/24 09:21	1

Lab Sample ID: LCS 310-418009/4
Matrix: Water
Analysis Batch: 418009

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	10.0	9.893		mg/L		99	90 - 110
Sulfate	10.0	10.57		mg/L		106	90 - 110

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 310-417630/1-A
Matrix: Water
Analysis Batch: 417965

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 417630

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.0250		0.100	0.0250	mg/L		04/03/24 09:30	04/04/24 14:58	1
Antimony	<0.0380		0.100	0.0380	mg/L		04/03/24 09:30	04/04/24 14:58	1
Arsenic	<0.0160		0.0800	0.0160	mg/L		04/03/24 09:30	04/04/24 14:58	1
Barium	<0.00200		0.0100	0.00200	mg/L		04/03/24 09:30	04/04/24 14:58	1
Beryllium	<0.00140		0.0100	0.00140	mg/L		04/03/24 09:30	04/04/24 14:58	1
Cadmium	<0.00390		0.0200	0.00390	mg/L		04/03/24 09:30	04/04/24 14:58	1
Calcium	<0.330		1.00	0.330	mg/L		04/03/24 09:30	04/04/24 14:58	1
Chromium	<0.00600		0.0200	0.00600	mg/L		04/03/24 09:30	04/04/24 14:58	1
Copper	<0.00490		0.0200	0.00490	mg/L		04/03/24 09:30	04/04/24 14:58	1
Iron	<0.0930		0.500	0.0930	mg/L		04/03/24 09:30	04/04/24 14:58	1
Lead	<0.0240		0.100	0.0240	mg/L		04/03/24 09:30	04/04/24 14:58	1
Magnesium	<0.250		1.00	0.250	mg/L		04/03/24 09:30	04/04/24 14:58	1
Nickel	<0.0150		0.0500	0.0150	mg/L		04/03/24 09:30	04/04/24 14:58	1
Potassium	<0.880		2.00	0.880	mg/L		04/03/24 09:30	04/04/24 14:58	1
Selenium	<0.0290		0.100	0.0290	mg/L		04/03/24 09:30	04/04/24 14:58	1
Silver	<0.00910		0.0200	0.00910	mg/L		04/03/24 09:30	04/04/24 14:58	1
Zinc	<0.0160		0.0400	0.0160	mg/L		04/03/24 09:30	04/04/24 14:58	1

Lab Sample ID: MB 310-417630/1-A
Matrix: Water
Analysis Batch: 418023

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 417630

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	<1.20		2.00	1.20	mg/L		04/03/24 09:30	04/05/24 14:28	1

Lab Sample ID: LCS 310-417630/2-A
Matrix: Water
Analysis Batch: 417965

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 417630

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	2.00	2.087		mg/L		104	85 - 115
Antimony	2.00	1.942		mg/L		97	85 - 115

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: LCS 310-417630/2-A
Matrix: Water
Analysis Batch: 417965

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 417630

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	2.00	1.973		mg/L		99	85 - 115
Barium	1.00	0.9897		mg/L		99	85 - 115
Beryllium	1.00	1.006		mg/L		101	85 - 115
Cadmium	1.00	0.9356		mg/L		94	85 - 115
Calcium	20.0	18.58		mg/L		93	85 - 115
Chromium	1.00	0.9439		mg/L		94	85 - 115
Copper	2.00	1.916		mg/L		96	85 - 115
Iron	2.00	1.949		mg/L		97	85 - 115
Lead	2.00	1.847		mg/L		92	85 - 115
Magnesium	20.0	19.19		mg/L		96	85 - 115
Nickel	2.00	1.848		mg/L		92	85 - 115
Potassium	20.0	22.23		mg/L		111	85 - 115
Selenium	4.00	3.795		mg/L		95	85 - 115
Silver	0.100	0.09870		mg/L		99	85 - 115
Zinc	2.00	1.878		mg/L		94	85 - 115

Lab Sample ID: LCS 310-417630/2-A
Matrix: Water
Analysis Batch: 418023

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 417630

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sodium	20.0	19.50		mg/L		98	85 - 115

Lab Sample ID: MB 310-417774/1-A
Matrix: Water
Analysis Batch: 417964

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Magnesium	<0.250		1.00	0.250	mg/L			04/04/24 12:15	1

Lab Sample ID: LCS 310-417774/2-A
Matrix: Water
Analysis Batch: 417964

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Magnesium	20.0	17.28		mg/L		86	85 - 115

Lab Sample ID: 310-277937-1 DU
Matrix: Water
Analysis Batch: 417964

Client Sample ID: SW-1
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Magnesium	28.1		28.49		mg/L		1	20

Method: 245.2 - Mercury (CVAA)

Lab Sample ID: MB 310-418012/1-A
Matrix: Water
Analysis Batch: 418170

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 418012

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000140		0.000200	0.000140	mg/L		04/05/24 14:06	04/08/24 13:43	1

Lab Sample ID: LCS 310-418012/2-A
Matrix: Water
Analysis Batch: 418170

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 418012

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00167	0.001780		mg/L		107	85 - 115

Method: 1664A - HEM and SGT-HEM

Lab Sample ID: MB 310-417780/1-A
Matrix: Water
Analysis Batch: 417910

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 417780

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease)	<4.3		5.0	4.3	mg/L		04/04/24 14:00	04/04/24 14:00	1

Lab Sample ID: LCS 310-417780/2-A
Matrix: Water
Analysis Batch: 417910

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 417780

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
HEM (Oil & Grease)	40.0	35.60		mg/L		89	78 - 114

Method: 180.1 - Turbidity, Nephelometric

Lab Sample ID: MB 310-417624/5
Matrix: Water
Analysis Batch: 417624

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Turbidity	<0.20		1.0	0.20	NTU			04/02/24 15:19	1

Lab Sample ID: LCS 310-417624/6
Matrix: Water
Analysis Batch: 417624

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Turbidity	20.0	20		NTU		102	90 - 110

Lab Sample ID: 310-277937-1 DU
Matrix: Water
Analysis Batch: 417624

Client Sample ID: SW-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Turbidity	210		220		NTU		2	30

Method: 335.4 - Cyanide, Total

Lab Sample ID: MB 310-417720/1-A
Matrix: Water
Analysis Batch: 417784

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 417720

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	<0.00430		0.0100	0.00430	mg/L		04/03/24 09:59	04/03/24 21:20	1

Lab Sample ID: LCS 310-417720/2-A
Matrix: Water
Analysis Batch: 417784

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 417720

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	0.200	0.1939		mg/L		97	90 - 110

Lab Sample ID: 310-277937-2 MS
Matrix: Water
Analysis Batch: 417784

Client Sample ID: SW-1
Prep Type: Total/NA
Prep Batch: 417720

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	<0.00430		0.200	0.1945		mg/L		97	90 - 110

Lab Sample ID: 310-277937-2 MSD
Matrix: Water
Analysis Batch: 417784

Client Sample ID: SW-1
Prep Type: Total/NA
Prep Batch: 417720

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cyanide, Total	<0.00430		0.200	0.1907		mg/L		95	90 - 110	2	35

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 310-417816/1-A
Matrix: Water
Analysis Batch: 417912

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 417816

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	<0.220		0.500	0.220	mg/L		04/04/24 08:32	04/04/24 19:06	1

Lab Sample ID: LCS 310-417816/2-A
Matrix: Water
Analysis Batch: 417912

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 417816

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Ammonia	4.00	3.700		mg/L		92	90 - 110

Method: 353.2 - Nitrogen, Nitrate-Nitrite

Lab Sample ID: MB 310-417845/48
Matrix: Water
Analysis Batch: 417845

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	<0.0540		0.100	0.0540	mg/L			04/04/24 11:10	1

Method: 353.2 - Nitrogen, Nitrate-Nitrite (Continued)

Lab Sample ID: LCS 310-417845/49
Matrix: Water
Analysis Batch: 417845

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate Nitrite as N	20.7	20.99		mg/L		101	90 - 110

Lab Sample ID: MB 310-418300/16
Matrix: Water
Analysis Batch: 418300

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	<0.0540		0.100	0.0540	mg/L			04/10/24 01:07	1

Lab Sample ID: MB 310-418300/48
Matrix: Water
Analysis Batch: 418300

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	<0.0540		0.100	0.0540	mg/L			04/10/24 02:15	1

Lab Sample ID: LCS 310-418300/12
Matrix: Water
Analysis Batch: 418300

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate Nitrite as N	2.07	2.055		mg/L		99	90 - 110

Lab Sample ID: LCS 310-418300/49
Matrix: Water
Analysis Batch: 418300

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate Nitrite as N	2.07	2.212		mg/L		107	90 - 110

Method: 365.1 - Phosphorus, Total

Lab Sample ID: MB 310-417672/1-A
Matrix: Water
Analysis Batch: 417782

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 417672

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Phosphorus as P	<0.0620		0.100	0.0620	mg/L		04/03/24 08:32	04/03/24 18:15	1

Lab Sample ID: LCS 310-417672/2-A
Matrix: Water
Analysis Batch: 417782

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 417672

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Phosphorus as P	1.00	0.9349		mg/L		93	90 - 110

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: MB 310-418015/1
Matrix: Water
Analysis Batch: 418015

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<1.70		5.00	1.70	mg/L			04/05/24 14:20	1

Lab Sample ID: LCS 310-418015/2
Matrix: Water
Analysis Batch: 418015

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	108.0		mg/L		108	75 - 116

Lab Sample ID: MB 310-418049/1
Matrix: Water
Analysis Batch: 418049

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<1.70		5.00	1.70	mg/L			04/05/24 18:06	1

Lab Sample ID: LCS 310-418049/2
Matrix: Water
Analysis Batch: 418049

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	99.00		mg/L		99	75 - 116

Method: SM 2320B - Alkalinity

Lab Sample ID: LCS 310-417886/2
Matrix: Water
Analysis Batch: 417886

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Alkalinity, Total (As CaCO3)	1000	973.3		mg/L		97	90 - 110

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 310-417775/1
Matrix: Water
Analysis Batch: 417775

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<34.0		50.0	34.0	mg/L			04/03/24 16:46	1

Lab Sample ID: LCS 310-417775/2
Matrix: Water
Analysis Batch: 417775

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	1000	934.0		mg/L		93	90 - 110

Client: AECOM
Project/Site: Black Hawk Co. SWPPP Sampling

Job ID: 310-277937-1

Method: SM 4500 H+ B - pH

Lab Sample ID: LCS 310-417639/1
Matrix: Water
Analysis Batch: 417639

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
pH	7.00	7.0		SU		99	98 - 102

Method: SM 5210B - BOD, 5-Day

Lab Sample ID: USB 310-417646/1
Matrix: Water
Analysis Batch: 417646

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	USB Result	USB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand	<3.00		3.00	3.00	mg/L			04/03/24 07:06	1

Lab Sample ID: LCS 310-417646/2
Matrix: Water
Analysis Batch: 417646

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Biochemical Oxygen Demand	198	152.0	*-	mg/L		77	85 - 115

Method: SM 5220D - COD

Lab Sample ID: MB 310-417970/5
Matrix: Water
Analysis Batch: 417970

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	<4.80		5.00	4.80	mg/L			04/05/24 10:12	1

Lab Sample ID: LCS 310-417970/3
Matrix: Water
Analysis Batch: 417970

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chemical Oxygen Demand	125	122.2		mg/L		97	85 - 115

Method: SM 5310C - TOC

Lab Sample ID: MB 310-418510/14
Matrix: Water
Analysis Batch: 418510

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	<0.230		1.00	0.230	mg/L			04/09/24 14:47	1

Lab Sample ID: LCS 310-418510/15
Matrix: Water
Analysis Batch: 418510

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	9.99	10.89		mg/L		109	85 - 115

Method: SM 5310C - TOC (Continued)

Lab Sample ID: 310-277937-1 DU
Matrix: Water
Analysis Batch: 418510

Client Sample ID: SW-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Organic Carbon	9.78		9.999		mg/L		2	15

QC Association Summary

Client: AECOM
Job ID: 310-277937-1
Project/Site: Black Hawk Co. SWPPP Sampling

GC/MS Semi VOA

Prep Batch: 417988

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277937-1	SW-1	Total/NA	Water	3510C	
310-277937-2	SW-1	Total/NA	Water	3510C	
MB 310-417988/1-A	Method Blank	Total/NA	Water	3510C	
LCS 310-417988/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 310-417988/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 418426

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277937-1	SW-1	Total/NA	Water	8270E	417988
310-277937-2	SW-1	Total/NA	Water	8270E	417988
MB 310-417988/1-A	Method Blank	Total/NA	Water	8270E	417988
LCS 310-417988/2-A	Lab Control Sample	Total/NA	Water	8270E	417988
LCSD 310-417988/3-A	Lab Control Sample Dup	Total/NA	Water	8270E	417988

HPLC/IC

Analysis Batch: 418009

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277937-1	SW-1	Total/NA	Water	300.0	
310-277937-2	SW-1	Total/NA	Water	300.0	
MB 310-418009/3	Method Blank	Total/NA	Water	300.0	
LCS 310-418009/4	Lab Control Sample	Total/NA	Water	300.0	

Metals

Prep Batch: 417630

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277937-1	SW-1	Total/NA	Water	200.7	
310-277937-2	SW-1	Total/NA	Water	200.7	
MB 310-417630/1-A	Method Blank	Total/NA	Water	200.7	
LCS 310-417630/2-A	Lab Control Sample	Total/NA	Water	200.7	

Filtration Batch: 417774

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277937-1	SW-1	Dissolved	Water	Filtration	
310-277937-2	SW-1	Dissolved	Water	Filtration	
MB 310-417774/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 310-417774/2-A	Lab Control Sample	Dissolved	Water	Filtration	
310-277937-1 DU	SW-1	Dissolved	Water	Filtration	

Analysis Batch: 417964

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277937-1	SW-1	Dissolved	Water	200.7 Rev 4.4	417774
310-277937-2	SW-1	Dissolved	Water	200.7 Rev 4.4	417774
MB 310-417774/1-A	Method Blank	Dissolved	Water	200.7 Rev 4.4	417774
LCS 310-417774/2-A	Lab Control Sample	Dissolved	Water	200.7 Rev 4.4	417774
310-277937-1 DU	SW-1	Dissolved	Water	200.7 Rev 4.4	417774

Analysis Batch: 417965

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277937-1	SW-1	Total/NA	Water	200.7 Rev 4.4	417630
310-277937-2	SW-1	Total/NA	Water	200.7 Rev 4.4	417630

Metals (Continued)

Analysis Batch: 417965 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 310-417630/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	417630
LCS 310-417630/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	417630

Prep Batch: 418012

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277937-1	SW-1	Total/NA	Water	245.1	
310-277937-2	SW-1	Total/NA	Water	245.1	
MB 310-418012/1-A	Method Blank	Total/NA	Water	245.1	
LCS 310-418012/2-A	Lab Control Sample	Total/NA	Water	245.1	

Analysis Batch: 418023

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277937-1	SW-1	Total/NA	Water	200.7 Rev 4.4	417630
310-277937-2	SW-1	Total/NA	Water	200.7 Rev 4.4	417630
MB 310-417630/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	417630
LCS 310-417630/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	417630

Analysis Batch: 418101

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277937-1	SW-1	Total/NA	Water	SM 2340B	
310-277937-2	SW-1	Total/NA	Water	SM 2340B	

Analysis Batch: 418170

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277937-1	SW-1	Total/NA	Water	245.2	418012
310-277937-2	SW-1	Total/NA	Water	245.2	418012
MB 310-418012/1-A	Method Blank	Total/NA	Water	245.2	418012
LCS 310-418012/2-A	Lab Control Sample	Total/NA	Water	245.2	418012

General Chemistry

Analysis Batch: 417624

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277937-1	SW-1	Total/NA	Water	180.1	
310-277937-2	SW-1	Total/NA	Water	180.1	
MB 310-417624/5	Method Blank	Total/NA	Water	180.1	
LCS 310-417624/6	Lab Control Sample	Total/NA	Water	180.1	
310-277937-1 DU	SW-1	Total/NA	Water	180.1	

Analysis Batch: 417639

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277937-1	SW-1	Total/NA	Water	SM 4500 H+ B	
310-277937-2	SW-1	Total/NA	Water	SM 4500 H+ B	
LCS 310-417639/1	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	

Analysis Batch: 417646

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277937-1	SW-1	Total/NA	Water	SM 5210B	
310-277937-2	SW-1	Total/NA	Water	SM 5210B	
USB 310-417646/1	Method Blank	Total/NA	Water	SM 5210B	
LCS 310-417646/2	Lab Control Sample	Total/NA	Water	SM 5210B	

General Chemistry

Prep Batch: 417672

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277937-1	SW-1	Total/NA	Water	365.1	
310-277937-2	SW-1	Total/NA	Water	365.1	
MB 310-417672/1-A	Method Blank	Total/NA	Water	365.1	
LCS 310-417672/2-A	Lab Control Sample	Total/NA	Water	365.1	

Prep Batch: 417720

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277937-1	SW-1	Total/NA	Water	Distill/CN	
310-277937-2	SW-1	Total/NA	Water	Distill/CN	
MB 310-417720/1-A	Method Blank	Total/NA	Water	Distill/CN	
LCS 310-417720/2-A	Lab Control Sample	Total/NA	Water	Distill/CN	
310-277937-2 MS	SW-1	Total/NA	Water	Distill/CN	
310-277937-2 MSD	SW-1	Total/NA	Water	Distill/CN	

Analysis Batch: 417775

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277937-1	SW-1	Total/NA	Water	SM 2540C	
310-277937-2	SW-1	Total/NA	Water	SM 2540C	
MB 310-417775/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-417775/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Prep Batch: 417780

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277937-1	SW-1	Total/NA	Water	1664A	
310-277937-2	SW-1	Total/NA	Water	1664A	
MB 310-417780/1-A	Method Blank	Total/NA	Water	1664A	
LCS 310-417780/2-A	Lab Control Sample	Total/NA	Water	1664A	

Analysis Batch: 417782

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277937-1	SW-1	Total/NA	Water	365.1	417672
310-277937-2	SW-1	Total/NA	Water	365.1	417672
MB 310-417672/1-A	Method Blank	Total/NA	Water	365.1	417672
LCS 310-417672/2-A	Lab Control Sample	Total/NA	Water	365.1	417672

Analysis Batch: 417784

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277937-1	SW-1	Total/NA	Water	335.4	417720
310-277937-2	SW-1	Total/NA	Water	335.4	417720
MB 310-417720/1-A	Method Blank	Total/NA	Water	335.4	417720
LCS 310-417720/2-A	Lab Control Sample	Total/NA	Water	335.4	417720
310-277937-2 MS	SW-1	Total/NA	Water	335.4	417720
310-277937-2 MSD	SW-1	Total/NA	Water	335.4	417720

Prep Batch: 417816

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277937-1	SW-1	Total/NA	Water	Distill/Ammonia	
310-277937-2	SW-1	Total/NA	Water	Distill/Ammonia	
MB 310-417816/1-A	Method Blank	Total/NA	Water	Distill/Ammonia	
LCS 310-417816/2-A	Lab Control Sample	Total/NA	Water	Distill/Ammonia	

QC Association Summary

Client: AECOM
Job ID: 310-277937-1
Project/Site: Black Hawk Co. SWPPP Sampling

General Chemistry

Analysis Batch: 417845

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277937-1	SW-1	Total/NA	Water	353.2	
MB 310-417845/48	Method Blank	Total/NA	Water	353.2	
LCS 310-417845/49	Lab Control Sample	Total/NA	Water	353.2	

Analysis Batch: 417886

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277937-1	SW-1	Total/NA	Water	SM 2320B	
310-277937-2	SW-1	Total/NA	Water	SM 2320B	
LCS 310-417886/2	Lab Control Sample	Total/NA	Water	SM 2320B	

Analysis Batch: 417910

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277937-1	SW-1	Total/NA	Water	1664A	417780
310-277937-2	SW-1	Total/NA	Water	1664A	417780
MB 310-417780/1-A	Method Blank	Total/NA	Water	1664A	417780
LCS 310-417780/2-A	Lab Control Sample	Total/NA	Water	1664A	417780

Analysis Batch: 417912

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277937-1	SW-1	Total/NA	Water	350.1	417816
310-277937-2	SW-1	Total/NA	Water	350.1	417816
MB 310-417816/1-A	Method Blank	Total/NA	Water	350.1	417816
LCS 310-417816/2-A	Lab Control Sample	Total/NA	Water	350.1	417816

Analysis Batch: 417970

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277937-1	SW-1	Total/NA	Water	SM 5220D	
310-277937-2	SW-1	Total/NA	Water	SM 5220D	
MB 310-417970/5	Method Blank	Total/NA	Water	SM 5220D	
LCS 310-417970/3	Lab Control Sample	Total/NA	Water	SM 5220D	

Analysis Batch: 418015

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277937-1	SW-1	Total/NA	Water	I-3765-85	
MB 310-418015/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-418015/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Analysis Batch: 418049

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277937-2	SW-1	Total/NA	Water	I-3765-85	
MB 310-418049/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-418049/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Analysis Batch: 418300

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277937-2	SW-1	Total/NA	Water	353.2	
MB 310-418300/16	Method Blank	Total/NA	Water	353.2	
MB 310-418300/48	Method Blank	Total/NA	Water	353.2	
LCS 310-418300/12	Lab Control Sample	Total/NA	Water	353.2	
LCS 310-418300/49	Lab Control Sample	Total/NA	Water	353.2	

QC Association Summary

Client: AECOM
Job ID: 310-277937-1
Project/Site: Black Hawk Co. SWPPP Sampling

General Chemistry

Analysis Batch: 418510

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277937-1	SW-1	Total/NA	Water	SM 5310C	
310-277937-2	SW-1	Total/NA	Water	SM 5310C	
MB 310-418510/14	Method Blank	Total/NA	Water	SM 5310C	
LCS 310-418510/15	Lab Control Sample	Total/NA	Water	SM 5310C	
310-277937-1 DU	SW-1	Total/NA	Water	SM 5310C	

Lab Chronicle

Client: AECOM
Job ID: 310-277937-1
Project/Site: Black Hawk Co. SWPPP Sampling

Client Sample ID: SW-1
Lab Sample ID: 310-277937-1
Date Collected: 04/02/24 08:30
Matrix: Water
Date Received: 04/02/24 14:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3510C			417988	JT8P	EET CF	04/05/24 10:59
Total/NA	Analysis	8270E		1	418426	L0FS	EET CF	04/11/24 15:39
Total/NA	Analysis	300.0		10	418009	QTZ5	EET CF	04/04/24 14:32
Dissolved	Filtration	Filtration			417774	QTZ5	EET CF	04/03/24 16:33
Dissolved	Analysis	200.7 Rev 4.4		1	417964	ZRI4	EET CF	04/04/24 12:19
Total/NA	Prep	200.7			417630	QTZ5	EET CF	04/03/24 09:30
Total/NA	Analysis	200.7 Rev 4.4		1	417965	ZRI4	EET CF	04/04/24 15:34
Total/NA	Prep	200.7			417630	QTZ5	EET CF	04/03/24 09:30
Total/NA	Analysis	200.7 Rev 4.4		1	418023	ZRI4	EET CF	04/05/24 14:46
Total/NA	Prep	245.1			418012	A6US	EET CF	04/05/24 14:06
Total/NA	Analysis	245.2		1	418170	DHM5	EET CF	04/08/24 13:55
Total/NA	Analysis	SM 2340B		1	418101	HE7K	EET CF	04/04/24 15:34
Total/NA	Prep	1664A			417780	D7CP	EET CF	04/04/24 14:00
Total/NA	Analysis	1664A		1	417910	D7CP	EET CF	04/04/24 14:00
Total/NA	Analysis	180.1		10	417624	QTZ5	EET CF	04/02/24 15:21
Total/NA	Prep	Distill/CN			417720	WZC8	EET CF	04/03/24 09:59
Total/NA	Analysis	335.4		1	417784	ZJX4	EET CF	04/03/24 21:31
Total/NA	Prep	Distill/Ammonia			417816	MQ8M	EET CF	04/04/24 08:32
Total/NA	Analysis	350.1		1	417912	ZJX4	EET CF	04/04/24 19:10
Total/NA	Analysis	353.2		1	417845	HE7K	EET CF	04/04/24 11:35
Total/NA	Prep	365.1			417672	MAQ3	EET CF	04/03/24 08:32
Total/NA	Analysis	365.1		1	417782	ZJX4	EET CF	04/03/24 18:20
Total/NA	Analysis	I-3765-85		1	418015	HE7K	EET CF	04/05/24 14:20
Total/NA	Analysis	SM 2320B		1	417886	MAQ3	EET CF	04/03/24 16:01
Total/NA	Analysis	SM 2540C		1	417775	D7CP	EET CF	04/03/24 16:46
Total/NA	Analysis	SM 4500 H+ B		1	417639	A3GU	EET CF	04/02/24 17:40
Total/NA	Analysis	SM 5210B		1	417646	W9YR	EET CF	04/03/24 07:57
Total/NA	Analysis	SM 5220D		5	417970	D7CP	EET CF	04/05/24 10:12
Total/NA	Analysis	SM 5310C		1	418510	DGU1	EET CF	04/09/24 15:59

Client Sample ID: SW-1
Lab Sample ID: 310-277937-2
Date Collected: 04/02/24 10:30
Matrix: Water
Date Received: 04/02/24 14:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3510C			417988	JT8P	EET CF	04/05/24 10:59
Total/NA	Analysis	8270E		1	418426	L0FS	EET CF	04/11/24 16:05
Total/NA	Analysis	300.0		10	418009	QTZ5	EET CF	04/04/24 14:46
Dissolved	Filtration	Filtration			417774	QTZ5	EET CF	04/03/24 16:33
Dissolved	Analysis	200.7 Rev 4.4		1	417964	ZRI4	EET CF	04/04/24 12:23
Total/NA	Prep	200.7			417630	QTZ5	EET CF	04/03/24 09:30
Total/NA	Analysis	200.7 Rev 4.4		1	417965	ZRI4	EET CF	04/04/24 15:36

Lab Chronicle

Client: AECOM
Job ID: 310-277937-1
Project/Site: Black Hawk Co. SWPPP Sampling

Client Sample ID: SW-1
Lab Sample ID: 310-277937-2

Date Collected: 04/02/24 10:30
Matrix: Water
Date Received: 04/02/24 14:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	200.7			417630	QTZ5	EET CF	04/03/24 09:30
Total/NA	Analysis	200.7 Rev 4.4		1	418023	ZRI4	EET CF	04/05/24 14:48
Total/NA	Prep	245.1			418012	A6US	EET CF	04/05/24 14:06
Total/NA	Analysis	245.2		1	418170	DHM5	EET CF	04/08/24 13:58
Total/NA	Analysis	SM 2340B		1	418101	HE7K	EET CF	04/04/24 15:36
Total/NA	Prep	1664A			417780	D7CP	EET CF	04/04/24 14:00
Total/NA	Analysis	1664A		1	417910	D7CP	EET CF	04/04/24 14:00
Total/NA	Analysis	180.1		10	417624	QTZ5	EET CF	04/02/24 15:23
Total/NA	Prep	Distill/CN			417720	WZC8	EET CF	04/03/24 09:59
Total/NA	Analysis	335.4		1	417784	ZJX4	EET CF	04/03/24 21:23
Total/NA	Prep	Distill/Ammonia			417816	MQ8M	EET CF	04/04/24 08:32
Total/NA	Analysis	350.1		1	417912	ZJX4	EET CF	04/04/24 19:10
Total/NA	Analysis	353.2		1	418300	ENB7	EET CF	04/10/24 01:39
Total/NA	Prep	365.1			417672	MAQ3	EET CF	04/03/24 08:32
Total/NA	Analysis	365.1		1	417782	ZJX4	EET CF	04/03/24 18:20
Total/NA	Analysis	I-3765-85		1	418049	A4XP	EET CF	04/05/24 18:06
Total/NA	Analysis	SM 2320B		1	417886	MAQ3	EET CF	04/03/24 16:17
Total/NA	Analysis	SM 2540C		1	417775	D7CP	EET CF	04/03/24 16:46
Total/NA	Analysis	SM 4500 H+ B		1	417639	A3GU	EET CF	04/02/24 17:40
Total/NA	Analysis	SM 5210B		1	417646	W9YR	EET CF	04/03/24 08:02
Total/NA	Analysis	SM 5220D		5	417970	D7CP	EET CF	04/05/24 10:12
Total/NA	Analysis	SM 5310C		1	418510	DGU1	EET CF	04/09/24 17:11

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Accreditation/Certification Summary

Client: AECOM
Job ID: 310-277937-1
Project/Site: Black Hawk Co. SWPPP Sampling

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8270E	3510C	Water	Alpha-Terpineol
8270E	3510C	Water	Aniline
8270E	3510C	Water	Benzoic acid
8270E	3510C	Water	Pyridine

Method Summary

Client: AECOM
Job ID: 310-277937-1
Project/Site: Black Hawk Co. SWPPP Sampling

Method	Method Description	Protocol	Laboratory
8270E	Semivolatile Organic Compounds (GC/MS)	SW846	EET CF
300.0	Anions, Ion Chromatography	EPA	EET CF
200.7 Rev 4.4	Metals (ICP)	EPA	EET CF
245.2	Mercury (CVAA)	EPA	EET CF
SM 2340B	Total Hardness (as CaCO3) by calculation	SM	EET CF
1664A	HEM and SGT-HEM	1664A	EET CF
180.1	Turbidity, Nephelometric	EPA	EET CF
335.4	Cyanide, Total	EPA	EET CF
350.1	Nitrogen, Ammonia	EPA	EET CF
353.2	Nitrogen, Nitrate-Nitrite	EPA	EET CF
365.1	Phosphorus, Total	EPA	EET CF
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
SM 2320B	Alkalinity	SM	EET CF
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CF
SM 4500 H+ B	pH	SM	EET CF
SM 5210B	BOD, 5-Day	SM	EET CF
SM 5220D	COD	SM	EET CF
SM 5310C	TOC	SM	EET CF
1664A	HEM and SGT-HEM (Aqueous)	1664A	EET CF
200.7	Preparation, Total Metals	EPA	EET CF
245.1	Preparation, Mercury	EPA	EET CF
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET CF
365.1	Sample Digestion for Total Phosphorus	MCAWW	EET CF
Distill/Ammonia	Distillation, Ammonia	None	EET CF
Distill/CN	Distillation, Cyanide	None	EET CF
Filtration	Sample Filtration	None	EET CF

Protocol References:

1664A = EPA-821-98-002
EPA = US Environmental Protection Agency
MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.
None = None
SM = "Standard Methods For The Examination Of Water And Wastewater"
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.
USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

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310-277937 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: AECOM

City/State: CITY | STATE TA | Project:

Receipt Information

Date/Time Received: DATE 4/2/24 | TIME 1415 | Received By:

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☑ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☑ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☐ Yes ☒ No *If yes:* Cooler # _____ of _____

Cooler Custody Seals Present? ☐ Yes ☒ No *If yes:* Cooler custody seals intact? ☐ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☒ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☒ Yes ☐ No *If yes:* Which VOA samples are in cooler? ↓

HCL Trips

Temperature Record

Coolant: ☑ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: T | Correction Factor (°C): +0.0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 3.9 | Corrected Temp (°C): 3.9

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE: If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

Eurofins TestAmerica, Cedar Falls
3019 Venture Way

Cedar Falls, IA 50613
phone 319.277 2401 fax 319.277 2425

Chain of Custody Record

eurofins

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other: Iowa DNR

Eurofins Environment T

Client Contact	Project Manager: Christopher Oelkers	Site Contact: John Foster	Date: 4-2-24	COC No
AECOM	Email: Christopher.Oelkers@aecom.com	Lab Contact: Tayler Sanderson	Carrier:	1 of 4 C
501 Sycamore St., Suite 222	Tel/Fax: (319)232-6531/(319)232-0271			Sampler:
Waterloo IA 50703	Analysis Turnaround Time			For Lab Use Only:
(319)232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS			Walk-in Client:
(319)232-0271 FAX	TAT if different from Below _____			Lab Sampling:
Project Name: Black Hawk Co SWPPP Sampling	☑ 2 weeks			Job / SDG No:
Site: Black Hawk County Landfill	☐ 1 week			
P O #	☐ 2 days			
	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	Total Metals (Al, Sb, Ar, Ba, Be, Ca, Cr, Cu, Fe, Pb, Hg, Mg, Ni, Se, Ag, Na, Zn)	NO2 + NO3, Ammonia, COD	Cl, SO4, TDS, TSS, Total P	Alkalinity, Total Hardness, Bicarbonate	Lab filter Mg	TOC	Cyanide	Oil & Grease	BOD	pH, Turbidity	Total Ca, K	a-Terpineol, Anilline, Benzoic Acid	Naphthalene, p-Cresol, Phenol	Pyridine	Sample Specific
SW-1	4-2-24	0830	G	GW	13	N		X	X	X	X	X	X	X	X	X	X	X	X	X	X	
SW-1	4-2-24	1030	C	GW	13	N		X	X	X	X	X	X	X	X	X	X	X	X	X	X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments: Table 10-1 attached list of parameters required for SWPPP analyses

Staff guage level 1.31'

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No		Cooler Temp (°C) Obs'd _____ Corr'd _____ Therm ID No _____		
Relinquished by: Ben Porter	Company: Aecom	Date/Time: 4-2-24	Received by:	Company:	Date/Time: 4-2-24 1815
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

Form No CA-C-WI-002, Rev 4.23, da

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-277937-1

Login Number: 277937
List Number: 1
Creator: Costello, Mackenzie K

List Source: Eurofins Cedar Falls

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Quantitation Limit Exceptions Summary

Client: AECOM
Job ID: 310-277937-1
Project/Site: Black Hawk Co. SWPPP Sampling

The requested project specific reporting limits listed below were less than laboratory standard quantitation limits (PQL) but greater than or equal to the laboratory method detection limits (MDL). It must be noted that results reported below lab standard quantitation limits may result in false positive/false negative values and less accurate quantitation. Routine laboratory procedures do not indicate corrective action for detections below the laboratory's PQL.

Method	Analyte	Matrix	Prep Type	Unit	Client RL	Lab PQL
SM 2340B	Total hardness as CaCO3	Water	Total/NA	mg/L	1.00	6.6

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ANALYTICAL REPORT

PREPARED FOR

Attn: Craig Chumbley
AECOM
501 Sycamore Street
Suite #222
Waterloo, Iowa 50703

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JOB DESCRIPTION

Black Hawk Co. SWPPP Sampling

JOB NUMBER

310-277938-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

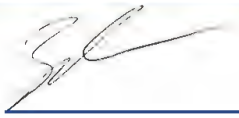
my EOL

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



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Revision 1

Authorized for release by
Zach Bindert, Client Service Manager
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(319)277-2401

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Job Narrative
310-277938-1

REVISION

The report being provided is a revision of the original report sent on 4/16/2024. The report (revision 1) is being revised due to This report was revised 4/25/2024. Zn was not analyzed due to project setup error..

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 4/2/2024 2:15 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 3.9°C and 6.2°C.

GC/MS Semi VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

HPLC/IC
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
Method SM5210B_Calc: The glucose-glutamic acid standard (LCS) recovered outside the recovery limits specified in the method in batch 310-417646. The method holding time had expired, therefore the analysis was not repeated. The data was qualified and reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Sample Summary

Client: AECOM
Job ID: 310-277938-1
Project/Site: Black Hawk Co. SWPPP Sampling

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-277938-1	SW-2	Water	04/02/24 08:15	04/02/24 14:15
310-277938-2	SW-2	Water	04/02/24 10:15	04/02/24 14:15

Detection Summary

Client: AECOM
Job ID: 310-277938-1
Project/Site: Black Hawk Co. SWPPP Sampling

Client Sample ID: SW-2
Lab Sample ID: 310-277938-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aniline	1.26	J	10.6	0.372	ug/L	1		8270E	Total/NA
Chloride	80.1		10.0	4.50	mg/L	10		300.0	Total/NA
Sulfate	176		10.0	4.20	mg/L	10		300.0	Total/NA
Aluminum	1.84		0.100	0.0250	mg/L	1		200.7 Rev 4.4	Total/NA
Barium	0.0934		0.0100	0.00200	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	119		1.00	0.330	mg/L	1		200.7 Rev 4.4	Total/NA
Copper	0.00828	J	0.0200	0.00490	mg/L	1		200.7 Rev 4.4	Total/NA
Iron	2.83		0.500	0.0930	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	29.8		1.00	0.250	mg/L	1		200.7 Rev 4.4	Total/NA
Potassium	9.39		2.00	0.880	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	45.3		2.00	1.20	mg/L	1		200.7 Rev 4.4	Total/NA
Zinc	0.0355	J	0.0400	0.0160	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	27.4		1.00	0.250	mg/L	1		200.7 Rev 4.4	Dissolved
Total hardness as CaCO3	420		4.12	1.03	mg/L	1		SM 2340B	Total/NA
Turbidity	150		10	2.0	NTU	10		180.1	Total/NA
Nitrate Nitrite as N	1.60		0.100	0.0540	mg/L	1		353.2	Total/NA
Total Phosphorus as P	0.142		0.100	0.0620	mg/L	1		365.1	Total/NA
Total Suspended Solids	95.0		15.0	5.10	mg/L	1		I-3765-85	Total/NA
Alkalinity, Total (As CaCO3)	111		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Alkalinity, Bicarbonate (As CaCO3)	111		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	610		250	170	mg/L	1		SM 2540C	Total/NA
pH	7.8	HF	1.0	1.0	SU	1		SM 4500 H+ B	Total/NA
Chemical Oxygen Demand	25.6		25.0	24.0	mg/L	5		SM 5220D	Total/NA
Total Organic Carbon	9.30		1.00	0.230	mg/L	1		SM 5310C	Total/NA

Client Sample ID: SW-2
Lab Sample ID: 310-277938-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aniline	1.26	J	11.4	0.398	ug/L	1		8270E	Total/NA
Chloride	82.2		10.0	4.50	mg/L	10		300.0	Total/NA
Sulfate	179		10.0	4.20	mg/L	10		300.0	Total/NA
Aluminum	2.13		0.100	0.0250	mg/L	1		200.7 Rev 4.4	Total/NA
Barium	0.100		0.0100	0.00200	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	121		1.00	0.330	mg/L	1		200.7 Rev 4.4	Total/NA
Chromium	0.00738	J	0.0200	0.00600	mg/L	1		200.7 Rev 4.4	Total/NA
Copper	0.00936	J	0.0200	0.00490	mg/L	1		200.7 Rev 4.4	Total/NA
Iron	3.51		0.500	0.0930	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	30.2		1.00	0.250	mg/L	1		200.7 Rev 4.4	Total/NA
Potassium	9.49		2.00	0.880	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	45.5		2.00	1.20	mg/L	1		200.7 Rev 4.4	Total/NA
Zinc	0.0430		0.0400	0.0160	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	26.2		1.00	0.250	mg/L	1		200.7 Rev 4.4	Dissolved
Total hardness as CaCO3	427		4.12	1.03	mg/L	1		SM 2340B	Total/NA
Turbidity	160		10	2.0	NTU	10		180.1	Total/NA
Nitrate Nitrite as N	1.66		0.100	0.0540	mg/L	1		353.2	Total/NA
Total Phosphorus as P	0.233		0.100	0.0620	mg/L	1		365.1	Total/NA
Total Suspended Solids	138		15.0	5.10	mg/L	1		I-3765-85	Total/NA
Alkalinity, Total (As CaCO3)	244		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Alkalinity, Bicarbonate (As CaCO3)	244		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	610		50.0	34.0	mg/L	1		SM 2540C	Total/NA
pH	7.8	HF	1.0	1.0	SU	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: SW-2 (Continued)

Lab Sample ID: 310-277938-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chemical Oxygen Demand	40.5		25.0	24.0	mg/L	5		SM 5220D	Total/NA
Total Organic Carbon	9.35		1.00	0.230	mg/L	1		SM 5310C	Total/NA

This Detection Summary does not include radiochemical test results.

Client: AECOM
Job ID: 310-277938-1
Project/Site: Black Hawk Co. SWPPP Sampling

Client Sample ID: SW-2
Lab Sample ID: 310-277938-1
Date Collected: 04/02/24 08:15
Matrix: Water
Date Received: 04/02/24 14:15

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alpha-Terpineol	<3.09		10.6	3.09	ug/L		04/05/24 10:59	04/11/24 16:32	1
Aniline	**1.26**	**J**	10.6	0.372	ug/L		04/05/24 10:59	04/11/24 16:32	1
Benzoic acid	<18.1		106	18.1	ug/L		04/05/24 10:59	04/11/24 16:32	1
Naphthalene	<6.49		10.6	6.49	ug/L		04/05/24 10:59	04/11/24 16:32	1
p-Cresol	<0.745		10.6	0.745	ug/L		04/05/24 10:59	04/11/24 16:32	1
Phenol	<1.17		10.6	1.17	ug/L		04/05/24 10:59	04/11/24 16:32	1
Pyridine	<1.70		10.6	1.70	ug/L		04/05/24 10:59	04/11/24 16:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorophenol (Surr)	*62*		*25 - 110*	*04/05/24 10:59*	*04/11/24 16:32*	*1*
Phenol-d5 (Surr)	*52*		*21 - 110*	*04/05/24 10:59*	*04/11/24 16:32*	*1*
2,4,6-Tribromophenol (Surr)	*86*		*27 - 136*	*04/05/24 10:59*	*04/11/24 16:32*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**80.1**		10.0	4.50	mg/L			04/04/24 15:00	10
Sulfate	**176**		10.0	4.20	mg/L			04/04/24 15:00	10

Method: EPA 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**1.84**		0.100	0.0250	mg/L		04/03/24 09:30	04/04/24 15:41	1
Antimony	<0.0380		0.100	0.0380	mg/L		04/03/24 09:30	04/04/24 15:41	1
Arsenic	<0.0160		0.0800	0.0160	mg/L		04/03/24 09:30	04/04/24 15:41	1
Barium	**0.0934**		0.0100	0.00200	mg/L		04/03/24 09:30	04/04/24 15:41	1
Beryllium	<0.00140		0.0100	0.00140	mg/L		04/03/24 09:30	04/04/24 15:41	1
Cadmium	<0.00390		0.0200	0.00390	mg/L		04/03/24 09:30	04/04/24 15:41	1
Calcium	**119**		1.00	0.330	mg/L		04/03/24 09:30	04/04/24 15:41	1
Chromium	<0.00600		0.0200	0.00600	mg/L		04/03/24 09:30	04/04/24 15:41	1
Copper	**0.00828**	**J**	0.0200	0.00490	mg/L		04/03/24 09:30	04/04/24 15:41	1
Iron	**2.83**		0.500	0.0930	mg/L		04/03/24 09:30	04/04/24 15:41	1
Lead	<0.0240		0.100	0.0240	mg/L		04/03/24 09:30	04/04/24 15:41	1
Magnesium	**29.8**		1.00	0.250	mg/L		04/03/24 09:30	04/04/24 15:41	1
Nickel	<0.0150		0.0500	0.0150	mg/L		04/03/24 09:30	04/04/24 15:41	1
Potassium	**9.39**		2.00	0.880	mg/L		04/03/24 09:30	04/04/24 15:41	1
Selenium	<0.0290		0.100	0.0290	mg/L		04/03/24 09:30	04/04/24 15:41	1
Silver	<0.00910		0.0200	0.00910	mg/L		04/03/24 09:30	04/04/24 15:41	1
Sodium	**45.3**		2.00	1.20	mg/L		04/03/24 09:30	04/05/24 14:50	1
Zinc	**0.0355**	**J**	0.0400	0.0160	mg/L		04/03/24 09:30	04/04/24 15:41	1

Method: EPA 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Magnesium	**27.4**		1.00	0.250	mg/L			04/04/24 12:31	1

Method: EPA 245.2 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000140		0.000200	0.000140	mg/L		04/05/24 14:06	04/08/24 14:04	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total hardness as CaCO3	**420**		4.12	1.03	mg/L			04/04/24 15:41	1

Client Sample Results

Client: AECOM
Job ID: 310-277938-1
Project/Site: Black Hawk Co. SWPPP Sampling

Client Sample ID: SW-2
Lab Sample ID: 310-277938-1
Date Collected: 04/02/24 08:15
Matrix: Water
Date Received: 04/02/24 14:15

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease) (1664A)	<4.7		5.5	4.7	mg/L		04/04/24 14:00	04/04/24 14:00	1
Turbidity (EPA 180.1)	**150**		10	2.0	NTU			04/02/24 15:24	10
Cyanide, Total (EPA 335.4)	<0.00430		0.0100	0.00430	mg/L		04/03/24 09:59	04/03/24 21:28	1
Ammonia (EPA 350.1)	<0.220		0.500	0.220	mg/L		04/04/24 08:32	04/04/24 19:17	1
Nitrate Nitrite as N (EPA 353.2)	**1.60**		0.100	0.0540	mg/L			04/10/24 01:41	1
Total Phosphorus as P (EPA 365.1)	**0.142**		0.100	0.0620	mg/L		04/03/24 09:10	04/03/24 18:30	1
Total Suspended Solids (USGS I-3765-85)	**95.0**		15.0	5.10	mg/L			04/05/24 18:43	1
Alkalinity, Total (As CaCO3) (SM 2320B)	**111**		5.00	2.50	mg/L			04/03/24 16:25	1
Alkalinity, Bicarbonate (As CaCO3) (SM 2320B)	**111**		5.00	2.50	mg/L			04/03/24 16:25	1
Phenolphthalein Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			04/03/24 16:25	1
Total Dissolved Solids (SM 2540C)	**610**		250	170	mg/L			04/03/24 16:46	1
Chemical Oxygen Demand (SM 5220D)	**25.6**		25.0	24.0	mg/L			04/05/24 10:12	5
Total Organic Carbon (SM 5310C)	**9.30**		1.00	0.230	mg/L			04/09/24 17:47	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**7.8**	**HF**	1.0	1.0	SU			04/02/24 17:40	1
Biochemical Oxygen Demand (SM 5210B)	<3.00	*-	3.00	3.00	mg/L			04/03/24 08:28	1

Client: AECOM
Job ID: 310-277938-1
Project/Site: Black Hawk Co. SWPPP Sampling

Client Sample ID: SW-2
Lab Sample ID: 310-277938-2
Date Collected: 04/02/24 10:15
Matrix: Water
Date Received: 04/02/24 14:15

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alpha-Terpineol	<3.30		11.4	3.30	ug/L		04/05/24 10:59	04/11/24 16:58	1
Aniline	**1.26**	**J**	11.4	0.398	ug/L		04/05/24 10:59	04/11/24 16:58	1
Benzoic acid	<19.3		114	19.3	ug/L		04/05/24 10:59	04/11/24 16:58	1
Naphthalene	<6.93		11.4	6.93	ug/L		04/05/24 10:59	04/11/24 16:58	1
p-Cresol	<0.795		11.4	0.795	ug/L		04/05/24 10:59	04/11/24 16:58	1
Phenol	<1.25		11.4	1.25	ug/L		04/05/24 10:59	04/11/24 16:58	1
Pyridine	<1.82		11.4	1.82	ug/L		04/05/24 10:59	04/11/24 16:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorophenol (Surr)	*79*		*25 - 110*	*04/05/24 10:59*	*04/11/24 16:58*	*1*
Phenol-d5 (Surr)	*68*		*21 - 110*	*04/05/24 10:59*	*04/11/24 16:58*	*1*
2,4,6-Tribromophenol (Surr)	*105*		*27 - 136*	*04/05/24 10:59*	*04/11/24 16:58*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**82.2**		10.0	4.50	mg/L			04/04/24 16:21	10
Sulfate	**179**		10.0	4.20	mg/L			04/04/24 16:21	10

Method: EPA 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**2.13**		0.100	0.0250	mg/L		04/03/24 09:30	04/04/24 15:45	1
Antimony	<0.0380		0.100	0.0380	mg/L		04/03/24 09:30	04/04/24 15:45	1
Arsenic	<0.0160		0.0800	0.0160	mg/L		04/03/24 09:30	04/04/24 15:45	1
Barium	**0.100**		0.0100	0.00200	mg/L		04/03/24 09:30	04/04/24 15:45	1
Beryllium	<0.00140		0.0100	0.00140	mg/L		04/03/24 09:30	04/04/24 15:45	1
Cadmium	<0.00390		0.0200	0.00390	mg/L		04/03/24 09:30	04/04/24 15:45	1
Calcium	**121**		1.00	0.330	mg/L		04/03/24 09:30	04/04/24 15:45	1
Chromium	**0.00738**	**J**	0.0200	0.00600	mg/L		04/03/24 09:30	04/04/24 15:45	1
Copper	**0.00936**	**J**	0.0200	0.00490	mg/L		04/03/24 09:30	04/04/24 15:45	1
Iron	**3.51**		0.500	0.0930	mg/L		04/03/24 09:30	04/04/24 15:45	1
Lead	<0.0240		0.100	0.0240	mg/L		04/03/24 09:30	04/04/24 15:45	1
Magnesium	**30.2**		1.00	0.250	mg/L		04/03/24 09:30	04/04/24 15:45	1
Nickel	<0.0150		0.0500	0.0150	mg/L		04/03/24 09:30	04/04/24 15:45	1
Potassium	**9.49**		2.00	0.880	mg/L		04/03/24 09:30	04/04/24 15:45	1
Selenium	<0.0290		0.100	0.0290	mg/L		04/03/24 09:30	04/04/24 15:45	1
Silver	<0.00910		0.0200	0.00910	mg/L		04/03/24 09:30	04/04/24 15:45	1
Sodium	**45.5**		2.00	1.20	mg/L		04/03/24 09:30	04/05/24 14:53	1
Zinc	**0.0430**		0.0400	0.0160	mg/L		04/03/24 09:30	04/04/24 15:45	1

Method: EPA 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Magnesium	**26.2**		1.00	0.250	mg/L			04/04/24 12:33	1

Method: EPA 245.2 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000140		0.000200	0.000140	mg/L		04/05/24 14:06	04/08/24 14:06	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total hardness as CaCO3	**427**		4.12	1.03	mg/L			04/04/24 15:45	1

Client: AECOM
Job ID: 310-277938-1
Project/Site: Black Hawk Co. SWPPP Sampling

Client Sample ID: SW-2
Lab Sample ID: 310-277938-2
Date Collected: 04/02/24 10:15
Matrix: Water
Date Received: 04/02/24 14:15

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease) (1664A)	<4.6		5.4	4.6	mg/L		04/05/24 06:00	04/05/24 06:00	1
Turbidity (EPA 180.1)	**160**		10	2.0	NTU			04/02/24 15:25	10
Cyanide, Total (EPA 335.4)	<0.00430		0.0100	0.00430	mg/L		04/03/24 09:59	04/03/24 21:28	1
Ammonia (EPA 350.1)	<0.220		0.500	0.220	mg/L		04/04/24 08:32	04/04/24 19:20	1
Nitrate Nitrite as N (EPA 353.2)	**1.66**		0.100	0.0540	mg/L			04/10/24 01:43	1
Total Phosphorus as P (EPA 365.1)	**0.233**		0.100	0.0620	mg/L		04/03/24 08:32	04/03/24 18:17	1
Total Suspended Solids (USGS I-3765-85)	**138**		15.0	5.10	mg/L			04/05/24 14:20	1
Alkalinity, Total (As CaCO3) (SM 2320B)	**244**		5.00	2.50	mg/L			04/08/24 12:21	1
Alkalinity, Bicarbonate (As CaCO3) (SM 2320B)	**244**		5.00	2.50	mg/L			04/08/24 12:21	1
Phenolphthalein Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			04/08/24 12:21	1
Total Dissolved Solids (SM 2540C)	**610**		50.0	34.0	mg/L			04/04/24 10:51	1
Chemical Oxygen Demand (SM 5220D)	**40.5**		25.0	24.0	mg/L			04/05/24 10:12	5
Total Organic Carbon (SM 5310C)	**9.35**		1.00	0.230	mg/L			04/09/24 18:23	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**7.8**	**HF**	1.0	1.0	SU			04/02/24 17:40	1
Biochemical Oxygen Demand (SM 5210B)	<3.00	*-	3.00	3.00	mg/L			04/03/24 08:40	1

Definitions/Glossary

Client: AECOM
Job ID: 310-277938-1
Project/Site: Black Hawk Co. SWPPP Sampling

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
*-	LCS and/or LCSD is outside acceptance limits, low biased.
HF	Parameter with a holding time of 15 minutes. Test performed by laboratory at client's request. Sample was analyzed outside of hold time.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Surrogate Summary

Client: AECOM
Job ID: 310-277938-1
Project/Site: Black Hawk Co. SWPPP Sampling

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
		2FP	PHL	TBP
Lab Sample ID	Client Sample ID	(25-110)	(21-110)	(27-136)
310-277938-1	SW-2	62	52	86
310-277938-2	SW-2	79	68	105
LCS 310-417988/2-A	Lab Control Sample	80	64	130
LCSD 310-417988/3-A	Lab Control Sample Dup	66	54	108
MB 310-417988/1-A	Method Blank	75	59	120

Surrogate Legend

2FP = 2-Fluorophenol (Surr)
PHL = Phenol-d5 (Surr)
TBP = 2,4,6-Tribromophenol (Surr)

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 310-417988/1-A
Matrix: Water
Analysis Batch: 418426

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 417988

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alpha-Terpineol	<2.90		10.0	2.90	ug/L		04/05/24 10:59	04/11/24 13:02	1
Aniline	<0.350		10.0	0.350	ug/L		04/05/24 10:59	04/11/24 13:02	1
Benzoic acid	<17.0		100	17.0	ug/L		04/05/24 10:59	04/11/24 13:02	1
Naphthalene	<6.10		10.0	6.10	ug/L		04/05/24 10:59	04/11/24 13:02	1
p-Cresol	<0.700		10.0	0.700	ug/L		04/05/24 10:59	04/11/24 13:02	1
Phenol	<1.10		10.0	1.10	ug/L		04/05/24 10:59	04/11/24 13:02	1
Pyridine	<1.60		10.0	1.60	ug/L		04/05/24 10:59	04/11/24 13:02	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorophenol (Surr)	*75*		*25 - 110*	*04/05/24 10:59*	*04/11/24 13:02*	*1*
Phenol-d5 (Surr)	*59*		*21 - 110*	*04/05/24 10:59*	*04/11/24 13:02*	*1*
2,4,6-Tribromophenol (Surr)	*120*		*27 - 136*	*04/05/24 10:59*	*04/11/24 13:02*	*1*

Lab Sample ID: LCS 310-417988/2-A
Matrix: Water
Analysis Batch: 418426

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 417988

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aniline	100	94.44		ug/L		94	10 - 140
Naphthalene	100	70.99		ug/L		71	38 - 110
p-Cresol	100	88.82		ug/L		89	46 - 117
Phenol	100	52.81		ug/L		53	29 - 110
Pyridine	200	130.9		ug/L		65	10 - 110

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorophenol (Surr)	*80*		*25 - 110*
Phenol-d5 (Surr)	*64*		*21 - 110*
2,4,6-Tribromophenol (Surr)	*130*		*27 - 136*

Lab Sample ID: LCSD 310-417988/3-A
Matrix: Water
Analysis Batch: 418426

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 417988

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aniline	100	82.40		ug/L		82	10 - 140	14	35
Naphthalene	100	59.81		ug/L		60	38 - 110	17	35
p-Cresol	100	76.83		ug/L		77	46 - 117	14	35
Phenol	100	47.45		ug/L		47	29 - 110	11	35
Pyridine	200	111.3		ug/L		56	10 - 110	16	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorophenol (Surr)	*66*		*25 - 110*
Phenol-d5 (Surr)	*54*		*21 - 110*
2,4,6-Tribromophenol (Surr)	*108*		*27 - 136*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 310-418009/3
Matrix: Water
Analysis Batch: 418009

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.450		1.00	0.450	mg/L			04/04/24 09:21	1
Sulfate	<0.420		1.00	0.420	mg/L			04/04/24 09:21	1

Lab Sample ID: LCS 310-418009/4
Matrix: Water
Analysis Batch: 418009

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	10.0	9.893		mg/L		99	90 - 110
Sulfate	10.0	10.57		mg/L		106	90 - 110

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 310-417630/1-A
Matrix: Water
Analysis Batch: 417965

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 417630

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.0250		0.100	0.0250	mg/L		04/03/24 09:30	04/04/24 14:58	1
Antimony	<0.0380		0.100	0.0380	mg/L		04/03/24 09:30	04/04/24 14:58	1
Arsenic	<0.0160		0.0800	0.0160	mg/L		04/03/24 09:30	04/04/24 14:58	1
Barium	<0.00200		0.0100	0.00200	mg/L		04/03/24 09:30	04/04/24 14:58	1
Beryllium	<0.00140		0.0100	0.00140	mg/L		04/03/24 09:30	04/04/24 14:58	1
Cadmium	<0.00390		0.0200	0.00390	mg/L		04/03/24 09:30	04/04/24 14:58	1
Calcium	<0.330		1.00	0.330	mg/L		04/03/24 09:30	04/04/24 14:58	1
Chromium	<0.00600		0.0200	0.00600	mg/L		04/03/24 09:30	04/04/24 14:58	1
Copper	<0.00490		0.0200	0.00490	mg/L		04/03/24 09:30	04/04/24 14:58	1
Iron	<0.0930		0.500	0.0930	mg/L		04/03/24 09:30	04/04/24 14:58	1
Lead	<0.0240		0.100	0.0240	mg/L		04/03/24 09:30	04/04/24 14:58	1
Magnesium	<0.250		1.00	0.250	mg/L		04/03/24 09:30	04/04/24 14:58	1
Nickel	<0.0150		0.0500	0.0150	mg/L		04/03/24 09:30	04/04/24 14:58	1
Potassium	<0.880		2.00	0.880	mg/L		04/03/24 09:30	04/04/24 14:58	1
Selenium	<0.0290		0.100	0.0290	mg/L		04/03/24 09:30	04/04/24 14:58	1
Silver	<0.00910		0.0200	0.00910	mg/L		04/03/24 09:30	04/04/24 14:58	1
Zinc	<0.0160		0.0400	0.0160	mg/L		04/03/24 09:30	04/04/24 14:58	1

Lab Sample ID: MB 310-417630/1-A
Matrix: Water
Analysis Batch: 418023

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 417630

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	<1.20		2.00	1.20	mg/L		04/03/24 09:30	04/05/24 14:28	1

Lab Sample ID: LCS 310-417630/2-A
Matrix: Water
Analysis Batch: 417965

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 417630

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	2.00	2.087		mg/L		104	85 - 115
Antimony	2.00	1.942		mg/L		97	85 - 115

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: LCS 310-417630/2-A
Matrix: Water
Analysis Batch: 417965

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 417630

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	2.00	1.973		mg/L		99	85 - 115
Barium	1.00	0.9897		mg/L		99	85 - 115
Beryllium	1.00	1.006		mg/L		101	85 - 115
Cadmium	1.00	0.9356		mg/L		94	85 - 115
Calcium	20.0	18.58		mg/L		93	85 - 115
Chromium	1.00	0.9439		mg/L		94	85 - 115
Copper	2.00	1.916		mg/L		96	85 - 115
Iron	2.00	1.949		mg/L		97	85 - 115
Lead	2.00	1.847		mg/L		92	85 - 115
Magnesium	20.0	19.19		mg/L		96	85 - 115
Nickel	2.00	1.848		mg/L		92	85 - 115
Potassium	20.0	22.23		mg/L		111	85 - 115
Selenium	4.00	3.795		mg/L		95	85 - 115
Silver	0.100	0.09870		mg/L		99	85 - 115
Zinc	2.00	1.878		mg/L		94	85 - 115

Lab Sample ID: LCS 310-417630/2-A
Matrix: Water
Analysis Batch: 418023

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 417630

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sodium	20.0	19.50		mg/L		98	85 - 115

Lab Sample ID: 310-277938-1 DU
Matrix: Water
Analysis Batch: 417965

Client Sample ID: SW-2
Prep Type: Total/NA
Prep Batch: 417630

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Aluminum	1.84		2.071		mg/L		12	20
Antimony	<0.0380		<0.0380		mg/L		NC	20
Arsenic	<0.0160		<0.0160		mg/L		NC	20
Barium	0.0934		0.09464		mg/L		1	20
Beryllium	<0.00140		<0.00140		mg/L		NC	20
Cadmium	<0.00390		<0.00390		mg/L		NC	20
Calcium	119		118.2		mg/L		1	20
Chromium	<0.00600		0.006576	J	mg/L		NC	20
Copper	0.00828	J	0.008598	J	mg/L		4	20
Iron	2.83		3.220		mg/L		13	20
Lead	<0.0240		<0.0240		mg/L		NC	20
Magnesium	29.8		29.56		mg/L		0.9	20
Nickel	<0.0150		<0.0150		mg/L		NC	20
Potassium	9.39		9.355		mg/L		0.4	20
Selenium	<0.0290		<0.0290		mg/L		NC	20
Silver	<0.00910		<0.00910		mg/L		NC	20
Zinc	0.0355	J	0.03715	J	mg/L		4	20

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: 310-277938-1 DU
Matrix: Water
Analysis Batch: 418023

Client Sample ID: SW-2
Prep Type: Total/NA
Prep Batch: 417630

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Sodium	45.3		44.90		mg/L		0.8	20
Zinc	0.0370	J	0.03877	J	mg/L		5	20

Lab Sample ID: MB 310-417774/1-A
Matrix: Water
Analysis Batch: 417964

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Magnesium	<0.250		1.00	0.250	mg/L			04/04/24 12:15	1

Lab Sample ID: LCS 310-417774/2-A
Matrix: Water
Analysis Batch: 417964

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Magnesium	20.0	17.28		mg/L		86	85 - 115

Method: 245.2 - Mercury (CVAA)

Lab Sample ID: MB 310-418012/1-A
Matrix: Water
Analysis Batch: 418170

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 418012

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000140		0.000200	0.000140	mg/L		04/05/24 14:06	04/08/24 13:43	1

Lab Sample ID: LCS 310-418012/2-A
Matrix: Water
Analysis Batch: 418170

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 418012

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00167	0.001780		mg/L		107	85 - 115

Method: 1664A - HEM and SGT-HEM

Lab Sample ID: MB 310-417780/1-A
Matrix: Water
Analysis Batch: 417910

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 417780

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease)	<4.3		5.0	4.3	mg/L		04/04/24 14:00	04/04/24 14:00	1

Lab Sample ID: LCS 310-417780/2-A
Matrix: Water
Analysis Batch: 417910

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 417780

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
HEM (Oil & Grease)	40.0	35.60		mg/L		89	78 - 114

Method: 1664A - HEM and SGT-HEM (Continued)

Lab Sample ID: MB 310-417844/1-A
Matrix: Water
Analysis Batch: 417993

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 417844

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease)	<4.3		5.0	4.3	mg/L		04/05/24 06:00	04/05/24 06:00	1

Lab Sample ID: LCS 310-417844/2-A
Matrix: Water
Analysis Batch: 417993

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 417844

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
HEM (Oil & Grease)	40.0	41.10		mg/L		103	78 - 114

Method: 180.1 - Turbidity, Nephelometric

Lab Sample ID: MB 310-417624/5
Matrix: Water
Analysis Batch: 417624

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Turbidity	<0.20		1.0	0.20	NTU			04/02/24 15:19	1

Lab Sample ID: LCS 310-417624/6
Matrix: Water
Analysis Batch: 417624

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Turbidity	20.0	20		NTU		102	90 - 110

Method: 335.4 - Cyanide, Total

Lab Sample ID: MB 310-417720/1-A
Matrix: Water
Analysis Batch: 417784

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 417720

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	<0.00430		0.0100	0.00430	mg/L		04/03/24 09:59	04/03/24 21:20	1

Lab Sample ID: LCS 310-417720/2-A
Matrix: Water
Analysis Batch: 417784

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 417720

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	0.200	0.1939		mg/L		97	90 - 110

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 310-417816/1-A
Matrix: Water
Analysis Batch: 417912

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 417816

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	<0.220		0.500	0.220	mg/L		04/04/24 08:32	04/04/24 19:06	1

Method: 350.1 - Nitrogen, Ammonia (Continued)

Lab Sample ID: LCS 310-417816/2-A
Matrix: Water
Analysis Batch: 417912

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 417816

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Ammonia	4.00	3.700		mg/L		92	90 - 110

Method: 353.2 - Nitrogen, Nitrate-Nitrite

Lab Sample ID: MB 310-418300/16
Matrix: Water
Analysis Batch: 418300

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	<0.0540		0.100	0.0540	mg/L			04/10/24 01:07	1

Lab Sample ID: MB 310-418300/48
Matrix: Water
Analysis Batch: 418300

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	<0.0540		0.100	0.0540	mg/L			04/10/24 02:15	1

Lab Sample ID: LCS 310-418300/12
Matrix: Water
Analysis Batch: 418300

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate Nitrite as N	2.07	2.055		mg/L		99	90 - 110

Lab Sample ID: LCS 310-418300/49
Matrix: Water
Analysis Batch: 418300

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate Nitrite as N	2.07	2.212		mg/L		107	90 - 110

Method: 365.1 - Phosphorus, Total

Lab Sample ID: MB 310-417672/1-A
Matrix: Water
Analysis Batch: 417782

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 417672

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Phosphorus as P	<0.0620		0.100	0.0620	mg/L		04/03/24 08:32	04/03/24 18:15	1

Lab Sample ID: LCS 310-417672/2-A
Matrix: Water
Analysis Batch: 417782

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 417672

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Phosphorus as P	1.00	0.9349		mg/L		93	90 - 110

Method: 365.1 - Phosphorus, Total (Continued)

Lab Sample ID: MB 310-417690/1-A
Matrix: Water
Analysis Batch: 417782

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 417690

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Phosphorus as P	<0.0620		0.100	0.0620	mg/L		04/03/24 09:10	04/03/24 18:26	1

Lab Sample ID: LCS 310-417690/2-A
Matrix: Water
Analysis Batch: 417782

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 417690

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Phosphorus as P	1.00	0.9236		mg/L		92	90 - 110

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: MB 310-418015/1
Matrix: Water
Analysis Batch: 418015

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<1.70		5.00	1.70	mg/L			04/05/24 14:20	1

Lab Sample ID: LCS 310-418015/2
Matrix: Water
Analysis Batch: 418015

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	108.0		mg/L		108	75 - 116

Lab Sample ID: MB 310-418050/1
Matrix: Water
Analysis Batch: 418050

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<1.70		5.00	1.70	mg/L			04/05/24 18:43	1

Lab Sample ID: LCS 310-418050/2
Matrix: Water
Analysis Batch: 418050

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	106.0		mg/L		106	75 - 116

Method: SM 2320B - Alkalinity

Lab Sample ID: LCS 310-417886/2
Matrix: Water
Analysis Batch: 417886

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Alkalinity, Total (As CaCO3)	1000	973.3		mg/L		97	90 - 110

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: LCS 310-418207/2
Matrix: Water
Analysis Batch: 418207

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Alkalinity, Total (As CaCO3)	1000	937.7		mg/L		94	90 - 110

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 310-417775/1
Matrix: Water
Analysis Batch: 417775

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<34.0		50.0	34.0	mg/L			04/03/24 16:46	1

Lab Sample ID: LCS 310-417775/2
Matrix: Water
Analysis Batch: 417775

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	1000	934.0		mg/L		93	90 - 110

Lab Sample ID: MB 310-417855/1
Matrix: Water
Analysis Batch: 417855

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<34.0		50.0	34.0	mg/L			04/04/24 10:51	1

Lab Sample ID: LCS 310-417855/2
Matrix: Water
Analysis Batch: 417855

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	1000	946.0		mg/L		95	90 - 110

Lab Sample ID: 310-277938-2 DU
Matrix: Water
Analysis Batch: 417855

Client Sample ID: SW-2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	610		602.0		mg/L		1	20

Method: SM 4500 H+ B - pH

Lab Sample ID: LCS 310-417639/1
Matrix: Water
Analysis Batch: 417639

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
pH	7.00	7.0		SU		99	98 - 102

Client: AECOM
Job ID: 310-277938-1
Project/Site: Black Hawk Co. SWPPP Sampling

Method: SM 5210B - BOD, 5-Day

Lab Sample ID: USB 310-417646/1
Matrix: Water
Analysis Batch: 417646

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	USB Result	USB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand	<3.00		3.00	3.00	mg/L			04/03/24 07:06	1

Lab Sample ID: LCS 310-417646/2
Matrix: Water
Analysis Batch: 417646

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Biochemical Oxygen Demand	198	152.0	*-	mg/L		77	85 - 115

Method: SM 5220D - COD

Lab Sample ID: MB 310-417970/5
Matrix: Water
Analysis Batch: 417970

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	<4.80		5.00	4.80	mg/L			04/05/24 10:12	1

Lab Sample ID: LCS 310-417970/3
Matrix: Water
Analysis Batch: 417970

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chemical Oxygen Demand	125	122.2		mg/L		97	85 - 115

Method: SM 5310C - TOC

Lab Sample ID: MB 310-418510/14
Matrix: Water
Analysis Batch: 418510

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	<0.230		1.00	0.230	mg/L			04/09/24 14:47	1

Lab Sample ID: LCS 310-418510/15
Matrix: Water
Analysis Batch: 418510

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	9.99	10.89		mg/L		109	85 - 115

QC Association Summary

Client: AECOM
Job ID: 310-277938-1
Project/Site: Black Hawk Co. SWPPP Sampling

GC/MS Semi VOA

Prep Batch: 417988

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277938-1	SW-2	Total/NA	Water	3510C	
310-277938-2	SW-2	Total/NA	Water	3510C	
MB 310-417988/1-A	Method Blank	Total/NA	Water	3510C	
LCS 310-417988/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 310-417988/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 418426

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277938-1	SW-2	Total/NA	Water	8270E	417988
310-277938-2	SW-2	Total/NA	Water	8270E	417988
MB 310-417988/1-A	Method Blank	Total/NA	Water	8270E	417988
LCS 310-417988/2-A	Lab Control Sample	Total/NA	Water	8270E	417988
LCSD 310-417988/3-A	Lab Control Sample Dup	Total/NA	Water	8270E	417988

HPLC/IC

Analysis Batch: 418009

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277938-1	SW-2	Total/NA	Water	300.0	
310-277938-2	SW-2	Total/NA	Water	300.0	
MB 310-418009/3	Method Blank	Total/NA	Water	300.0	
LCS 310-418009/4	Lab Control Sample	Total/NA	Water	300.0	

Metals

Prep Batch: 417630

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277938-1	SW-2	Total/NA	Water	200.7	
310-277938-2	SW-2	Total/NA	Water	200.7	
MB 310-417630/1-A	Method Blank	Total/NA	Water	200.7	
LCS 310-417630/2-A	Lab Control Sample	Total/NA	Water	200.7	
310-277938-1 DU	SW-2	Total/NA	Water	200.7	

Filtration Batch: 417774

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277938-1	SW-2	Dissolved	Water	Filtration	
310-277938-2	SW-2	Dissolved	Water	Filtration	
MB 310-417774/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 310-417774/2-A	Lab Control Sample	Dissolved	Water	Filtration	

Analysis Batch: 417964

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277938-1	SW-2	Dissolved	Water	200.7 Rev 4.4	417774
310-277938-2	SW-2	Dissolved	Water	200.7 Rev 4.4	417774
MB 310-417774/1-A	Method Blank	Dissolved	Water	200.7 Rev 4.4	417774
LCS 310-417774/2-A	Lab Control Sample	Dissolved	Water	200.7 Rev 4.4	417774

Analysis Batch: 417965

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277938-1	SW-2	Total/NA	Water	200.7 Rev 4.4	417630
310-277938-2	SW-2	Total/NA	Water	200.7 Rev 4.4	417630
MB 310-417630/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	417630

Metals (Continued)

Analysis Batch: 417965 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 310-417630/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	417630
310-277938-1 DU	SW-2	Total/NA	Water	200.7 Rev 4.4	417630

Prep Batch: 418012

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277938-1	SW-2	Total/NA	Water	245.1	
310-277938-2	SW-2	Total/NA	Water	245.1	
MB 310-418012/1-A	Method Blank	Total/NA	Water	245.1	
LCS 310-418012/2-A	Lab Control Sample	Total/NA	Water	245.1	

Analysis Batch: 418023

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277938-1	SW-2	Total/NA	Water	200.7 Rev 4.4	417630
310-277938-2	SW-2	Total/NA	Water	200.7 Rev 4.4	417630
MB 310-417630/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	417630
LCS 310-417630/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	417630
310-277938-1 DU	SW-2	Total/NA	Water	200.7 Rev 4.4	417630

Analysis Batch: 418101

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277938-1	SW-2	Total/NA	Water	SM 2340B	
310-277938-2	SW-2	Total/NA	Water	SM 2340B	

Analysis Batch: 418170

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277938-1	SW-2	Total/NA	Water	245.2	418012
310-277938-2	SW-2	Total/NA	Water	245.2	418012
MB 310-418012/1-A	Method Blank	Total/NA	Water	245.2	418012
LCS 310-418012/2-A	Lab Control Sample	Total/NA	Water	245.2	418012

General Chemistry

Analysis Batch: 417624

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277938-1	SW-2	Total/NA	Water	180.1	
310-277938-2	SW-2	Total/NA	Water	180.1	
MB 310-417624/5	Method Blank	Total/NA	Water	180.1	
LCS 310-417624/6	Lab Control Sample	Total/NA	Water	180.1	

Analysis Batch: 417639

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277938-1	SW-2	Total/NA	Water	SM 4500 H+ B	
310-277938-2	SW-2	Total/NA	Water	SM 4500 H+ B	
LCS 310-417639/1	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	

Analysis Batch: 417646

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277938-1	SW-2	Total/NA	Water	SM 5210B	
310-277938-2	SW-2	Total/NA	Water	SM 5210B	
USB 310-417646/1	Method Blank	Total/NA	Water	SM 5210B	
LCS 310-417646/2	Lab Control Sample	Total/NA	Water	SM 5210B	

General Chemistry

Prep Batch: 417672

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277938-2	SW-2	Total/NA	Water	365.1	
MB 310-417672/1-A	Method Blank	Total/NA	Water	365.1	
LCS 310-417672/2-A	Lab Control Sample	Total/NA	Water	365.1	

Prep Batch: 417690

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277938-1	SW-2	Total/NA	Water	365.1	
MB 310-417690/1-A	Method Blank	Total/NA	Water	365.1	
LCS 310-417690/2-A	Lab Control Sample	Total/NA	Water	365.1	

Prep Batch: 417720

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277938-1	SW-2	Total/NA	Water	Distill/CN	
310-277938-2	SW-2	Total/NA	Water	Distill/CN	
MB 310-417720/1-A	Method Blank	Total/NA	Water	Distill/CN	
LCS 310-417720/2-A	Lab Control Sample	Total/NA	Water	Distill/CN	

Analysis Batch: 417775

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277938-1	SW-2	Total/NA	Water	SM 2540C	
MB 310-417775/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-417775/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Prep Batch: 417780

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277938-1	SW-2	Total/NA	Water	1664A	
MB 310-417780/1-A	Method Blank	Total/NA	Water	1664A	
LCS 310-417780/2-A	Lab Control Sample	Total/NA	Water	1664A	

Analysis Batch: 417782

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277938-1	SW-2	Total/NA	Water	365.1	417690
310-277938-2	SW-2	Total/NA	Water	365.1	417672
MB 310-417672/1-A	Method Blank	Total/NA	Water	365.1	417672
MB 310-417690/1-A	Method Blank	Total/NA	Water	365.1	417690
LCS 310-417672/2-A	Lab Control Sample	Total/NA	Water	365.1	417672
LCS 310-417690/2-A	Lab Control Sample	Total/NA	Water	365.1	417690

Analysis Batch: 417784

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277938-1	SW-2	Total/NA	Water	335.4	417720
310-277938-2	SW-2	Total/NA	Water	335.4	417720
MB 310-417720/1-A	Method Blank	Total/NA	Water	335.4	417720
LCS 310-417720/2-A	Lab Control Sample	Total/NA	Water	335.4	417720

Prep Batch: 417816

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277938-1	SW-2	Total/NA	Water	Distill/Ammonia	
310-277938-2	SW-2	Total/NA	Water	Distill/Ammonia	
MB 310-417816/1-A	Method Blank	Total/NA	Water	Distill/Ammonia	
LCS 310-417816/2-A	Lab Control Sample	Total/NA	Water	Distill/Ammonia	

General Chemistry

Prep Batch: 417844

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277938-2	SW-2	Total/NA	Water	1664A	
MB 310-417844/1-A	Method Blank	Total/NA	Water	1664A	
LCS 310-417844/2-A	Lab Control Sample	Total/NA	Water	1664A	

Analysis Batch: 417855

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277938-2	SW-2	Total/NA	Water	SM 2540C	
MB 310-417855/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-417855/2	Lab Control Sample	Total/NA	Water	SM 2540C	
310-277938-2 DU	SW-2	Total/NA	Water	SM 2540C	

Analysis Batch: 417886

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277938-1	SW-2	Total/NA	Water	SM 2320B	
LCS 310-417886/2	Lab Control Sample	Total/NA	Water	SM 2320B	

Analysis Batch: 417910

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277938-1	SW-2	Total/NA	Water	1664A	417780
MB 310-417780/1-A	Method Blank	Total/NA	Water	1664A	417780
LCS 310-417780/2-A	Lab Control Sample	Total/NA	Water	1664A	417780

Analysis Batch: 417912

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277938-1	SW-2	Total/NA	Water	350.1	417816
310-277938-2	SW-2	Total/NA	Water	350.1	417816
MB 310-417816/1-A	Method Blank	Total/NA	Water	350.1	417816
LCS 310-417816/2-A	Lab Control Sample	Total/NA	Water	350.1	417816

Analysis Batch: 417970

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277938-1	SW-2	Total/NA	Water	SM 5220D	
310-277938-2	SW-2	Total/NA	Water	SM 5220D	
MB 310-417970/5	Method Blank	Total/NA	Water	SM 5220D	
LCS 310-417970/3	Lab Control Sample	Total/NA	Water	SM 5220D	

Analysis Batch: 417993

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277938-2	SW-2	Total/NA	Water	1664A	417844
MB 310-417844/1-A	Method Blank	Total/NA	Water	1664A	417844
LCS 310-417844/2-A	Lab Control Sample	Total/NA	Water	1664A	417844

Analysis Batch: 418015

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277938-2	SW-2	Total/NA	Water	I-3765-85	
MB 310-418015/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-418015/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Analysis Batch: 418050

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277938-1	SW-2	Total/NA	Water	I-3765-85	

General Chemistry (Continued)

Analysis Batch: 418050 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 310-418050/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-418050/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Analysis Batch: 418207

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277938-2	SW-2	Total/NA	Water	SM 2320B	
LCS 310-418207/2	Lab Control Sample	Total/NA	Water	SM 2320B	

Analysis Batch: 418300

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277938-1	SW-2	Total/NA	Water	353.2	
310-277938-2	SW-2	Total/NA	Water	353.2	
MB 310-418300/16	Method Blank	Total/NA	Water	353.2	
MB 310-418300/48	Method Blank	Total/NA	Water	353.2	
LCS 310-418300/12	Lab Control Sample	Total/NA	Water	353.2	
LCS 310-418300/49	Lab Control Sample	Total/NA	Water	353.2	

Analysis Batch: 418510

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277938-1	SW-2	Total/NA	Water	SM 5310C	
310-277938-2	SW-2	Total/NA	Water	SM 5310C	
MB 310-418510/14	Method Blank	Total/NA	Water	SM 5310C	
LCS 310-418510/15	Lab Control Sample	Total/NA	Water	SM 5310C	

Lab Chronicle

Client: AECOM
Job ID: 310-277938-1
Project/Site: Black Hawk Co. SWPPP Sampling

Client Sample ID: SW-2
Lab Sample ID: 310-277938-1
Date Collected: 04/02/24 08:15
Matrix: Water
Date Received: 04/02/24 14:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3510C			417988	JT8P	EET CF	04/05/24 10:59
Total/NA	Analysis	8270E		1	418426	L0FS	EET CF	04/11/24 16:32
Total/NA	Analysis	300.0		10	418009	QTZ5	EET CF	04/04/24 15:00
Dissolved	Filtration	Filtration			417774	QTZ5	EET CF	04/03/24 16:33
Dissolved	Analysis	200.7 Rev 4.4		1	417964	ZRI4	EET CF	04/04/24 12:31
Total/NA	Prep	200.7			417630	QTZ5	EET CF	04/03/24 09:30
Total/NA	Analysis	200.7 Rev 4.4		1	417965	ZRI4	EET CF	04/04/24 15:41
Total/NA	Prep	200.7			417630	QTZ5	EET CF	04/03/24 09:30
Total/NA	Analysis	200.7 Rev 4.4		1	418023	ZRI4	EET CF	04/05/24 14:50
Total/NA	Prep	245.1			418012	A6US	EET CF	04/05/24 14:06
Total/NA	Analysis	245.2		1	418170	DHM5	EET CF	04/08/24 14:04
Total/NA	Analysis	SM 2340B		1	418101	HE7K	EET CF	04/04/24 15:41
Total/NA	Prep	1664A			417780	D7CP	EET CF	04/04/24 14:00
Total/NA	Analysis	1664A		1	417910	D7CP	EET CF	04/04/24 14:00
Total/NA	Analysis	180.1		10	417624	QTZ5	EET CF	04/02/24 15:24
Total/NA	Prep	Distill/CN			417720	WZC8	EET CF	04/03/24 09:59
Total/NA	Analysis	335.4		1	417784	ZJX4	EET CF	04/03/24 21:28
Total/NA	Prep	Distill/Ammonia			417816	MQ8M	EET CF	04/04/24 08:32
Total/NA	Analysis	350.1		1	417912	ZJX4	EET CF	04/04/24 19:17
Total/NA	Analysis	353.2		1	418300	ENB7	EET CF	04/10/24 01:41
Total/NA	Prep	365.1			417690	MAQ3	EET CF	04/03/24 09:10
Total/NA	Analysis	365.1		1	417782	ZJX4	EET CF	04/03/24 18:30
Total/NA	Analysis	I-3765-85		1	418050	A4XP	EET CF	04/05/24 18:43
Total/NA	Analysis	SM 2320B		1	417886	MAQ3	EET CF	04/03/24 16:25
Total/NA	Analysis	SM 2540C		1	417775	D7CP	EET CF	04/03/24 16:46
Total/NA	Analysis	SM 4500 H+ B		1	417639	A3GU	EET CF	04/02/24 17:40
Total/NA	Analysis	SM 5210B		1	417646	W9YR	EET CF	04/03/24 08:28
Total/NA	Analysis	SM 5220D		5	417970	D7CP	EET CF	04/05/24 10:12
Total/NA	Analysis	SM 5310C		1	418510	DGU1	EET CF	04/09/24 17:47

Client Sample ID: SW-2
Lab Sample ID: 310-277938-2
Date Collected: 04/02/24 10:15
Matrix: Water
Date Received: 04/02/24 14:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3510C			417988	JT8P	EET CF	04/05/24 10:59
Total/NA	Analysis	8270E		1	418426	L0FS	EET CF	04/11/24 16:58
Total/NA	Analysis	300.0		10	418009	QTZ5	EET CF	04/04/24 16:21
Dissolved	Filtration	Filtration			417774	QTZ5	EET CF	04/03/24 16:33
Dissolved	Analysis	200.7 Rev 4.4		1	417964	ZRI4	EET CF	04/04/24 12:33
Total/NA	Prep	200.7			417630	QTZ5	EET CF	04/03/24 09:30
Total/NA	Analysis	200.7 Rev 4.4		1	417965	ZRI4	EET CF	04/04/24 15:45

Lab Chronicle

Client: AECOM
Job ID: 310-277938-1
Project/Site: Black Hawk Co. SWPPP Sampling

Client Sample ID: SW-2
Lab Sample ID: 310-277938-2
Date Collected: 04/02/24 10:15
Matrix: Water
Date Received: 04/02/24 14:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	200.7			417630	QTZ5	EET CF	04/03/24 09:30
Total/NA	Analysis	200.7 Rev 4.4		1	418023	ZRI4	EET CF	04/05/24 14:53
Total/NA	Prep	245.1			418012	A6US	EET CF	04/05/24 14:06
Total/NA	Analysis	245.2		1	418170	DHM5	EET CF	04/08/24 14:06
Total/NA	Analysis	SM 2340B		1	418101	HE7K	EET CF	04/04/24 15:45
Total/NA	Prep	1664A			417844	DGU1	EET CF	04/05/24 06:00
Total/NA	Analysis	1664A		1	417993	DGU1	EET CF	04/05/24 06:00
Total/NA	Analysis	180.1		10	417624	QTZ5	EET CF	04/02/24 15:25
Total/NA	Prep	Distill/CN			417720	WZC8	EET CF	04/03/24 09:59
Total/NA	Analysis	335.4		1	417784	ZJX4	EET CF	04/03/24 21:28
Total/NA	Prep	Distill/Ammonia			417816	MQ8M	EET CF	04/04/24 08:32
Total/NA	Analysis	350.1		1	417912	ZJX4	EET CF	04/04/24 19:20
Total/NA	Analysis	353.2		1	418300	ENB7	EET CF	04/10/24 01:43
Total/NA	Prep	365.1			417672	MAQ3	EET CF	04/03/24 08:32
Total/NA	Analysis	365.1		1	417782	ZJX4	EET CF	04/03/24 18:17
Total/NA	Analysis	I-3765-85		1	418015	HE7K	EET CF	04/05/24 14:20
Total/NA	Analysis	SM 2320B		1	418207	MAQ3	EET CF	04/08/24 12:21
Total/NA	Analysis	SM 2540C		1	417855	DGU1	EET CF	04/04/24 10:51
Total/NA	Analysis	SM 4500 H+ B		1	417639	A3GU	EET CF	04/02/24 17:40
Total/NA	Analysis	SM 5210B		1	417646	W9YR	EET CF	04/03/24 08:40
Total/NA	Analysis	SM 5220D		5	417970	D7CP	EET CF	04/05/24 10:12
Total/NA	Analysis	SM 5310C		1	418510	DGU1	EET CF	04/09/24 18:23

Laboratory References:
EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Accreditation/Certification Summary

Client: AECOM
Job ID: 310-277938-1
Project/Site: Black Hawk Co. SWPPP Sampling

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8270E	3510C	Water	Alpha-Terpineol
8270E	3510C	Water	Aniline
8270E	3510C	Water	Benzoic acid
8270E	3510C	Water	Pyridine

Method Summary

Client: AECOM
Job ID: 310-277938-1
Project/Site: Black Hawk Co. SWPPP Sampling

Method	Method Description	Protocol	Laboratory
8270E	Semivolatile Organic Compounds (GC/MS)	SW846	EET CF
300.0	Anions, Ion Chromatography	EPA	EET CF
200.7 Rev 4.4	Metals (ICP)	EPA	EET CF
245.2	Mercury (CVAA)	EPA	EET CF
SM 2340B	Total Hardness (as CaCO3) by calculation	SM	EET CF
1664A	HEM and SGT-HEM	1664A	EET CF
180.1	Turbidity, Nephelometric	EPA	EET CF
335.4	Cyanide, Total	EPA	EET CF
350.1	Nitrogen, Ammonia	EPA	EET CF
353.2	Nitrogen, Nitrate-Nitrite	EPA	EET CF
365.1	Phosphorus, Total	EPA	EET CF
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
SM 2320B	Alkalinity	SM	EET CF
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CF
SM 4500 H+ B	pH	SM	EET CF
SM 5210B	BOD, 5-Day	SM	EET CF
SM 5220D	COD	SM	EET CF
SM 5310C	TOC	SM	EET CF
1664A	HEM and SGT-HEM (Aqueous)	1664A	EET CF
200.7	Preparation, Total Metals	EPA	EET CF
245.1	Preparation, Mercury	EPA	EET CF
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET CF
365.1	Sample Digestion for Total Phosphorus	MCAWW	EET CF
Distill/Ammonia	Distillation, Ammonia	None	EET CF
Distill/CN	Distillation, Cyanide	None	EET CF
Filtration	Sample Filtration	None	EET CF

Protocol References:

1664A = EPA-821-98-002
EPA = US Environmental Protection Agency
MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.
None = None
SM = "Standard Methods For The Examination Of Water And Wastewater"
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.
USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

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310-277938 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: AECOM

City/State: CITY | STATE | Project:

Receipt Information

Date/Time Received: DATE 4/2/24 | TIME 1415 | Received By: N

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ Lab Field Services ☒ Client Drop-off ☐ Other:

Condition of Cooler/Containers

Sample(s) received in Cooler?	☒ Yes ☐ No	*If yes:* Cooler ID:
Multiple Coolers?	☐ Yes ☒ No	*If yes:* Cooler # 1 of 2
Cooler Custody Seals Present?	☐ Yes ☒ No	*If yes:* Cooler custody seals intact? ☐ Yes ☐ No
Sample Custody Seals Present?	☐ Yes ☒ No	*If yes:* Sample custody seals intact? ☐ Yes ☐ No
Trip Blank Present?	☐ Yes ☒ No	*If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other: ☐ NONE

Thermometer ID: T | Correction Factor (°C): +0.0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 6.2 | Corrected Temp (°C): 6.2

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☒ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☒ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

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Place COC scanning label here

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: AECOM

City/State: CITY | STATE: IA | Project:

Receipt Information

Date/Time Received: DATE: 4/2/24 | TIME: 1415 | Received By:

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☑ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☑ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☑ Yes ☐ No *If yes:* Cooler # 2 of 2

Cooler Custody Seals Present? ☐ Yes ☑ No *If yes:* Cooler custody seals intact? ☐ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☑ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☑ Yes ☐ No *If yes:* Which VOA samples are in cooler? ↓

HCL Trips

Temperature Record

Coolant: ☑ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: T | Correction Factor (°C): +0.0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 3.9 | Corrected Temp (°C): 3.9

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE: If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

Eurofins TestAmerica, Cedar Falls
3019 Venture Way

Cedar Falls IA 50613
phone 319 277 2401 fax 319.277 2425

Chain of Custody Record

eurofins

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other: Iowa DNR

Eurofins Environment T

Client Contact	Project Manager: Christopher Oelkers	Site Contact: John Foster	Date: 4-2-24	COC No
AECOM	Email: Christopher.Oelkers@aecom.com	Lab Contact: Tayler Sanderson	Carrier:	2 of 4 C
501 Sycamore St., Suite 222	Tel/Fax: (319)232-6531/(319)232-0271			Sampler:
Waterloo, IA 50703	Analysis Turnaround Time			For Lab Use Only:
(319)232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS			Walk-in Client:
(319)232-0271 FAX	TAT if different from Below _____			Lab Sampling
Project Name: Black Hawk Co SWPPP Sampling	☑ 2 weeks			Job / SDG No
Site: Black Hawk County Landfill	☐ 1 week			
P O #	☐ 2 days			
	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	Total Metals (Al, Sb, Ar, Ba, Be, Ca, Cr, Cu, Fe, Pb, Hg, Mg, Ni, Se, Ag, Na, Zn)	NO2 + NO3, Ammonia, COD	Cl, SO4, TDS, TSS, Total P	Alkalinity, Total Hardness, Bicarbonate	Lab filter Mg	TOC	Cyanide	Oil & Grease	BOD	pH, Turbidity	Total Ca, K	a-Terpineol, Anilline, Benzoic Acid	Naphthalene, p-Cresol, Phenol	Pyridine	Sample Specific
SW-2	4-2-24	0815	G	GW	13	N		X	X	X	X	X	X	X	X	X	X	X	X	X	X	
SW-2	4-2-24	1015	C	GW	13	N		X	X	X	X	X	X	X	X	X	X	X	X	X	X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments: Table 10-1 attached list of parameters required for SWPPP analyses

Staff guage level 0.45'

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No		Cooler Temp (°C) Obs'd _____ Corr'd _____ Therm ID No _____		
Relinquished by: Ben Porter	Company: Aecom	Date/Time: 4-2-24	Received by:	Company:	Date/Time: 4-2-24 1415
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

Form No CA-C-WI-002, Rev 4.23, da

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-277938-1

Login Number: 277938
List Number: 1
Creator: Costello, Mackenzie K

List Source: Eurofins Cedar Falls

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Quantitation Limit Exceptions Summary

Client: AECOM
Job ID: 310-277938-1
Project/Site: Black Hawk Co. SWPPP Sampling

The requested project specific reporting limits listed below were less than laboratory standard quantitation limits (PQL) but greater than or equal to the laboratory method detection limits (MDL). It must be noted that results reported below lab standard quantitation limits may result in false positive/false negative values and less accurate quantitation. Routine laboratory procedures do not indicate corrective action for detections below the laboratory's PQL.

Method	Analyte	Matrix	Prep Type	Unit	Client RL	Lab PQL
SM 2340B	Total hardness as CaCO3	Water	Total/NA	mg/L	1.00	6.6

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ANALYTICAL REPORT

PREPARED FOR

Attn: Craig Chumbley
AECOM
501 Sycamore Street
Suite #222
Waterloo, Iowa 50703

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JOB DESCRIPTION

Black Hawk Co. SWPPP Sampling

JOB NUMBER

310-277939-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

my EOL

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



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Revision 1

Authorized for release by
Zach Bindert, Client Service Manager
Zach.Bindert@et.eurofinsus.com
(319)277-2401

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Detection Limit Exceptions Summary 34

Job Narrative
310-277939-1

REVISION

The report being provided is a revision of the original report sent on 4/16/2024. The report (revision 1) is being revised due to This report was revised 4/25/2024. Zn was not analyzed due to project setup error..

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 4/2/2024 2:15 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 3.9°C and 6.8°C.

GC/MS Semi VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

HPLC/IC
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
Method SM5210B_Calc: The glucose-glutamic acid standard (LCS) recovered outside the recovery limits specified in the method in batch 310-417646. The method holding time had expired, therefore the analysis was not repeated. The data was qualified and reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Sample Summary

Client: AECOM
Job ID: 310-277939-1
Project/Site: Black Hawk Co. SWPPP Sampling

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-277939-1	SW-3	Water	04/02/24 08:00	04/02/24 14:15
310-277939-2	SW-3	Water	04/02/24 10:00	04/02/24 14:15

Detection Summary

Client: AECOM
Job ID: 310-277939-1
Project/Site: Black Hawk Co. SWPPP Sampling

Client Sample ID: SW-3 — Lab Sample ID: 310-277939-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	32.0		10.0	4.50	mg/L	10		300.0	Total/NA
Sulfate	562		10.0	4.20	mg/L	10		300.0	Total/NA
Aluminum	0.416		0.100	0.0250	mg/L	1		200.7 Rev 4.4	Total/NA
Barium	0.0802		0.0100	0.00200	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	247		1.00	0.330	mg/L	1		200.7 Rev 4.4	Total/NA
Iron	0.886		0.500	0.0930	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	63.1		1.00	0.250	mg/L	1		200.7 Rev 4.4	Total/NA
Potassium	5.34		2.00	0.880	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	20.7		2.00	1.20	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	57.7		1.00	0.250	mg/L	1		200.7 Rev 4.4	Dissolved
Total hardness as CaCO3	877		4.12	1.03	mg/L	1		SM 2340B	Total/NA
Turbidity	25		10	2.0	NTU	10		180.1	Total/NA
Nitrate Nitrite as N	3.35		0.100	0.0540	mg/L	1		353.2	Total/NA
Total Phosphorus as P	0.0731	J	0.100	0.0620	mg/L	1		365.1	Total/NA
Total Suspended Solids	69.3		5.00	1.70	mg/L	1		I-3765-85	Total/NA
Alkalinity, Total (As CaCO3)	249		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Alkalinity, Bicarbonate (As CaCO3)	249		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	1110		50.0	34.0	mg/L	1		SM 2540C	Total/NA
pH	7.5	HF	1.0	1.0	SU	1		SM 4500 H+ B	Total/NA
Total Organic Carbon	6.89		1.00	0.230	mg/L	1		SM 5310C	Total/NA

Client Sample ID: SW-3 — Lab Sample ID: 310-277939-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	31.4		10.0	4.50	mg/L	10		300.0	Total/NA
Sulfate	553		10.0	4.20	mg/L	10		300.0	Total/NA
Aluminum	0.211		0.100	0.0250	mg/L	1		200.7 Rev 4.4	Total/NA
Barium	0.0760		0.0100	0.00200	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	237		1.00	0.330	mg/L	1		200.7 Rev 4.4	Total/NA
Iron	0.597		0.500	0.0930	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	60.6		1.00	0.250	mg/L	1		200.7 Rev 4.4	Total/NA
Potassium	5.06		2.00	0.880	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	20.0		2.00	1.20	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	55.6		1.00	0.250	mg/L	1		200.7 Rev 4.4	Dissolved
Total hardness as CaCO3	841		4.12	1.03	mg/L	1		SM 2340B	Total/NA
Turbidity	14		10	2.0	NTU	10		180.1	Total/NA
Nitrate Nitrite as N	3.43		0.100	0.0540	mg/L	1		353.2	Total/NA
Total Phosphorus as P	0.0643	J	0.100	0.0620	mg/L	1		365.1	Total/NA
Total Suspended Solids	34.0		30.0	10.2	mg/L	1		I-3765-85	Total/NA
Alkalinity, Total (As CaCO3)	245		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Alkalinity, Bicarbonate (As CaCO3)	245		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	1120		50.0	34.0	mg/L	1		SM 2540C	Total/NA
pH	7.5	HF	1.0	1.0	SU	1		SM 4500 H+ B	Total/NA
Chemical Oxygen Demand	27.3		25.0	24.0	mg/L	5		SM 5220D	Total/NA
Total Organic Carbon	6.64		1.00	0.230	mg/L	1		SM 5310C	Total/NA

This Detection Summary does not include radiochemical test results.

Client: AECOM
Job ID: 310-277939-1
Project/Site: Black Hawk Co. SWPPP Sampling

Client Sample ID: SW-3
Lab Sample ID: 310-277939-1
Date Collected: 04/02/24 08:00
Matrix: Water
Date Received: 04/02/24 14:15

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alpha-Terpineol	<3.45		11.9	3.45	ug/L		04/05/24 10:59	04/11/24 17:24	1
Aniline	<0.417		11.9	0.417	ug/L		04/05/24 10:59	04/11/24 17:24	1
Benzoic acid	<20.2		119	20.2	ug/L		04/05/24 10:59	04/11/24 17:24	1
Naphthalene	<7.26		11.9	7.26	ug/L		04/05/24 10:59	04/11/24 17:24	1
p-Cresol	<0.833		11.9	0.833	ug/L		04/05/24 10:59	04/11/24 17:24	1
Phenol	<1.31		11.9	1.31	ug/L		04/05/24 10:59	04/11/24 17:24	1
Pyridine	<1.90		11.9	1.90	ug/L		04/05/24 10:59	04/11/24 17:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorophenol (Surr)	*69*		*25 - 110*	*04/05/24 10:59*	*04/11/24 17:24*	*1*
Phenol-d5 (Surr)	*61*		*21 - 110*	*04/05/24 10:59*	*04/11/24 17:24*	*1*
2,4,6-Tribromophenol (Surr)	*86*		*27 - 136*	*04/05/24 10:59*	*04/11/24 17:24*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**32.0**		10.0	4.50	mg/L			04/04/24 16:35	10
Sulfate	**562**		10.0	4.20	mg/L			04/04/24 16:35	10

Method: EPA 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.416**		0.100	0.0250	mg/L		04/03/24 09:30	04/04/24 15:47	1
Antimony	<0.0380		0.100	0.0380	mg/L		04/03/24 09:30	04/04/24 15:47	1
Arsenic	<0.0160		0.0800	0.0160	mg/L		04/03/24 09:30	04/04/24 15:47	1
Barium	**0.0802**		0.0100	0.00200	mg/L		04/03/24 09:30	04/04/24 15:47	1
Beryllium	<0.00140		0.0100	0.00140	mg/L		04/03/24 09:30	04/04/24 15:47	1
Cadmium	<0.00390		0.0200	0.00390	mg/L		04/03/24 09:30	04/04/24 15:47	1
Calcium	**247**		1.00	0.330	mg/L		04/03/24 09:30	04/04/24 15:47	1
Chromium	<0.00600		0.0200	0.00600	mg/L		04/03/24 09:30	04/04/24 15:47	1
Copper	<0.00490		0.0200	0.00490	mg/L		04/03/24 09:30	04/04/24 15:47	1
Iron	**0.886**		0.500	0.0930	mg/L		04/03/24 09:30	04/04/24 15:47	1
Lead	<0.0240		0.100	0.0240	mg/L		04/03/24 09:30	04/04/24 15:47	1
Magnesium	**63.1**		1.00	0.250	mg/L		04/03/24 09:30	04/04/24 15:47	1
Nickel	<0.0150		0.0500	0.0150	mg/L		04/03/24 09:30	04/04/24 15:47	1
Potassium	**5.34**		2.00	0.880	mg/L		04/03/24 09:30	04/04/24 15:47	1
Selenium	<0.0290		0.100	0.0290	mg/L		04/03/24 09:30	04/04/24 15:47	1
Silver	<0.00910		0.0200	0.00910	mg/L		04/03/24 09:30	04/04/24 15:47	1
Sodium	**20.7**		2.00	1.20	mg/L		04/03/24 09:30	04/05/24 14:56	1
Zinc	<0.0160		0.0400	0.0160	mg/L		04/03/24 09:30	04/04/24 15:47	1

Method: EPA 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Magnesium	**57.7**		1.00	0.250	mg/L			04/04/24 12:35	1

Method: EPA 245.2 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000140		0.000200	0.000140	mg/L		04/05/24 14:06	04/08/24 14:08	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total hardness as CaCO3	**877**		4.12	1.03	mg/L			04/04/24 15:47	1

Client Sample Results

Client: AECOM
Job ID: 310-277939-1
Project/Site: Black Hawk Co. SWPPP Sampling

Client Sample ID: SW-3
Lab Sample ID: 310-277939-1
Date Collected: 04/02/24 08:00
Matrix: Water
Date Received: 04/02/24 14:15

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease) (1664A)	<5.0		5.8	5.0	mg/L		04/05/24 06:00	04/05/24 06:00	1
Turbidity (EPA 180.1)	**25**		10	2.0	NTU			04/02/24 15:26	10
Cyanide, Total (EPA 335.4)	<0.00430		0.0100	0.00430	mg/L		04/03/24 09:59	04/03/24 21:27	1
Ammonia (EPA 350.1)	<0.220		0.500	0.220	mg/L		04/04/24 08:32	04/04/24 19:15	1
Nitrate Nitrite as N (EPA 353.2)	**3.35**		0.100	0.0540	mg/L			04/10/24 01:44	1
Total Phosphorus as P (EPA 365.1)	**0.0731**	**J**	0.100	0.0620	mg/L		04/03/24 08:32	04/03/24 18:17	1
Total Suspended Solids (USGS I-3765-85)	**69.3**		5.00	1.70	mg/L			04/05/24 14:20	1
Alkalinity, Total (As CaCO3) (SM 2320B)	**249**		5.00	2.50	mg/L			04/08/24 11:53	1
Alkalinity, Bicarbonate (As CaCO3) (SM 2320B)	**249**		5.00	2.50	mg/L			04/08/24 11:53	1
Phenolphthalein Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			04/08/24 11:53	1
Total Dissolved Solids (SM 2540C)	**1110**		50.0	34.0	mg/L			04/04/24 10:51	1
Chemical Oxygen Demand (SM 5220D)	<24.0		25.0	24.0	mg/L			04/05/24 10:12	5
Total Organic Carbon (SM 5310C)	**6.89**		1.00	0.230	mg/L			04/09/24 18:59	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**7.5**	**HF**	1.0	1.0	SU			04/02/24 17:40	1
Biochemical Oxygen Demand (SM 5210B)	<3.00	*-	3.00	3.00	mg/L			04/03/24 08:16	1

Client: AECOM
Job ID: 310-277939-1
Project/Site: Black Hawk Co. SWPPP Sampling

Client Sample ID: SW-3
Date Collected: 04/02/24 10:00
Date Received: 04/02/24 14:15

Lab Sample ID: 310-277939-2
Matrix: Water

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alpha-Terpineol	<3.15		10.9	3.15	ug/L		04/05/24 10:59	04/11/24 17:50	1
Aniline	<0.380		10.9	0.380	ug/L		04/05/24 10:59	04/11/24 17:50	1
Benzoic acid	<18.5		109	18.5	ug/L		04/05/24 10:59	04/11/24 17:50	1
Naphthalene	<6.63		10.9	6.63	ug/L		04/05/24 10:59	04/11/24 17:50	1
p-Cresol	<0.761		10.9	0.761	ug/L		04/05/24 10:59	04/11/24 17:50	1
Phenol	<1.20		10.9	1.20	ug/L		04/05/24 10:59	04/11/24 17:50	1
Pyridine	<1.74		10.9	1.74	ug/L		04/05/24 10:59	04/11/24 17:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorophenol (Surr)	*68*		*25 - 110*	*04/05/24 10:59*	*04/11/24 17:50*	*1*
Phenol-d5 (Surr)	*60*		*21 - 110*	*04/05/24 10:59*	*04/11/24 17:50*	*1*
2,4,6-Tribromophenol (Surr)	*87*		*27 - 136*	*04/05/24 10:59*	*04/11/24 17:50*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**31.4**		10.0	4.50	mg/L			04/04/24 16:49	10
Sulfate	**553**		10.0	4.20	mg/L			04/04/24 16:49	10

Method: EPA 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.211**		0.100	0.0250	mg/L		04/03/24 09:30	04/04/24 15:49	1
Antimony	<0.0380		0.100	0.0380	mg/L		04/03/24 09:30	04/04/24 15:49	1
Arsenic	<0.0160		0.0800	0.0160	mg/L		04/03/24 09:30	04/04/24 15:49	1
Barium	**0.0760**		0.0100	0.00200	mg/L		04/03/24 09:30	04/04/24 15:49	1
Beryllium	<0.00140		0.0100	0.00140	mg/L		04/03/24 09:30	04/04/24 15:49	1
Cadmium	<0.00390		0.0200	0.00390	mg/L		04/03/24 09:30	04/04/24 15:49	1
Calcium	**237**		1.00	0.330	mg/L		04/03/24 09:30	04/04/24 15:49	1
Chromium	<0.00600		0.0200	0.00600	mg/L		04/03/24 09:30	04/04/24 15:49	1
Copper	<0.00490		0.0200	0.00490	mg/L		04/03/24 09:30	04/04/24 15:49	1
Iron	**0.597**		0.500	0.0930	mg/L		04/03/24 09:30	04/04/24 15:49	1
Lead	<0.0240		0.100	0.0240	mg/L		04/03/24 09:30	04/04/24 15:49	1
Magnesium	**60.6**		1.00	0.250	mg/L		04/03/24 09:30	04/04/24 15:49	1
Nickel	<0.0150		0.0500	0.0150	mg/L		04/03/24 09:30	04/04/24 15:49	1
Potassium	**5.06**		2.00	0.880	mg/L		04/03/24 09:30	04/04/24 15:49	1
Selenium	<0.0290		0.100	0.0290	mg/L		04/03/24 09:30	04/04/24 15:49	1
Silver	<0.00910		0.0200	0.00910	mg/L		04/03/24 09:30	04/04/24 15:49	1
Sodium	**20.0**		2.00	1.20	mg/L		04/03/24 09:30	04/05/24 14:58	1
Zinc	<0.0160		0.0400	0.0160	mg/L		04/03/24 09:30	04/04/24 15:49	1

Method: EPA 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Magnesium	**55.6**		1.00	0.250	mg/L			04/04/24 12:37	1

Method: EPA 245.2 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000140		0.000200	0.000140	mg/L		04/05/24 14:06	04/08/24 14:10	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total hardness as CaCO3	**841**		4.12	1.03	mg/L			04/04/24 15:49	1

Client Sample Results

Client: AECOM
Job ID: 310-277939-1
Project/Site: Black Hawk Co. SWPPP Sampling

Client Sample ID: SW-3
Lab Sample ID: 310-277939-2
Date Collected: 04/02/24 10:00
Matrix: Water
Date Received: 04/02/24 14:15

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease) (1664A)	<4.6		5.4	4.6	mg/L		04/05/24 06:00	04/05/24 06:00	1
Turbidity (EPA 180.1)	**14**		10	2.0	NTU			04/02/24 15:27	10
Cyanide, Total (EPA 335.4)	<0.00430		0.0100	0.00430	mg/L		04/03/24 09:59	04/03/24 21:27	1
Ammonia (EPA 350.1)	<0.220		0.500	0.220	mg/L		04/04/24 08:32	04/04/24 19:15	1
Nitrate Nitrite as N (EPA 353.2)	**3.43**		0.100	0.0540	mg/L			04/10/24 01:46	1
Total Phosphorus as P (EPA 365.1)	**0.0643**	**J**	0.100	0.0620	mg/L		04/03/24 08:32	04/03/24 18:18	1
Total Suspended Solids (USGS I-3765-85)	**34.0**		30.0	10.2	mg/L			04/05/24 18:43	1
Alkalinity, Total (As CaCO3) (SM 2320B)	**245**		5.00	2.50	mg/L			04/08/24 12:30	1
Alkalinity, Bicarbonate (As CaCO3) (SM 2320B)	**245**		5.00	2.50	mg/L			04/08/24 12:30	1
Phenolphthalein Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			04/08/24 12:30	1
Total Dissolved Solids (SM 2540C)	**1120**		50.0	34.0	mg/L			04/04/24 10:51	1
Chemical Oxygen Demand (SM 5220D)	**27.3**		25.0	24.0	mg/L			04/05/24 10:12	5
Total Organic Carbon (SM 5310C)	**6.64**		1.00	0.230	mg/L			04/09/24 19:35	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**7.5**	**HF**	1.0	1.0	SU			04/02/24 17:40	1
Biochemical Oxygen Demand (SM 5210B)	<3.00	*-	3.00	3.00	mg/L			04/03/24 08:20	1

Definitions/Glossary

Client: AECOM
Job ID: 310-277939-1
Project/Site: Black Hawk Co. SWPPP Sampling

Qualifiers

General Chemistry

Qualifier	Qualifier Description
*-	LCS and/or LCSD is outside acceptance limits, low biased.
HF	Parameter with a holding time of 15 minutes. Test performed by laboratory at client's request. Sample was analyzed outside of hold time.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Surrogate Summary

Client: AECOM
Job ID: 310-277939-1
Project/Site: Black Hawk Co. SWPPP Sampling

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
		2FP	PHL	TBP
Lab Sample ID	Client Sample ID	(25-110)	(21-110)	(27-136)
310-277939-1	SW-3	69	61	86
310-277939-2	SW-3	68	60	87
LCS 310-417988/2-A	Lab Control Sample	80	64	130
LCSD 310-417988/3-A	Lab Control Sample Dup	66	54	108
MB 310-417988/1-A	Method Blank	75	59	120

Surrogate Legend

2FP = 2-Fluorophenol (Surr)
PHL = Phenol-d5 (Surr)
TBP = 2,4,6-Tribromophenol (Surr)

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 310-417988/1-A
Matrix: Water
Analysis Batch: 418426

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 417988

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alpha-Terpineol	<2.90		10.0	2.90	ug/L		04/05/24 10:59	04/11/24 13:02	1
Aniline	<0.350		10.0	0.350	ug/L		04/05/24 10:59	04/11/24 13:02	1
Benzoic acid	<17.0		100	17.0	ug/L		04/05/24 10:59	04/11/24 13:02	1
Naphthalene	<6.10		10.0	6.10	ug/L		04/05/24 10:59	04/11/24 13:02	1
p-Cresol	<0.700		10.0	0.700	ug/L		04/05/24 10:59	04/11/24 13:02	1
Phenol	<1.10		10.0	1.10	ug/L		04/05/24 10:59	04/11/24 13:02	1
Pyridine	<1.60		10.0	1.60	ug/L		04/05/24 10:59	04/11/24 13:02	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorophenol (Surr)	*75*		*25 - 110*	*04/05/24 10:59*	*04/11/24 13:02*	*1*
Phenol-d5 (Surr)	*59*		*21 - 110*	*04/05/24 10:59*	*04/11/24 13:02*	*1*
2,4,6-Tribromophenol (Surr)	*120*		*27 - 136*	*04/05/24 10:59*	*04/11/24 13:02*	*1*

Lab Sample ID: LCS 310-417988/2-A
Matrix: Water
Analysis Batch: 418426

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 417988

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aniline	100	94.44		ug/L		94	10 - 140
Naphthalene	100	70.99		ug/L		71	38 - 110
p-Cresol	100	88.82		ug/L		89	46 - 117
Phenol	100	52.81		ug/L		53	29 - 110
Pyridine	200	130.9		ug/L		65	10 - 110

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorophenol (Surr)	*80*		*25 - 110*
Phenol-d5 (Surr)	*64*		*21 - 110*
2,4,6-Tribromophenol (Surr)	*130*		*27 - 136*

Lab Sample ID: LCSD 310-417988/3-A
Matrix: Water
Analysis Batch: 418426

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 417988

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aniline	100	82.40		ug/L		82	10 - 140	14	35
Naphthalene	100	59.81		ug/L		60	38 - 110	17	35
p-Cresol	100	76.83		ug/L		77	46 - 117	14	35
Phenol	100	47.45		ug/L		47	29 - 110	11	35
Pyridine	200	111.3		ug/L		56	10 - 110	16	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorophenol (Surr)	*66*		*25 - 110*
Phenol-d5 (Surr)	*54*		*21 - 110*
2,4,6-Tribromophenol (Surr)	*108*		*27 - 136*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 310-418009/3
Matrix: Water
Analysis Batch: 418009

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.450		1.00	0.450	mg/L			04/04/24 09:21	1
Sulfate	<0.420		1.00	0.420	mg/L			04/04/24 09:21	1

Lab Sample ID: LCS 310-418009/4
Matrix: Water
Analysis Batch: 418009

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	10.0	9.893		mg/L		99	90 - 110
Sulfate	10.0	10.57		mg/L		106	90 - 110

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 310-417630/1-A
Matrix: Water
Analysis Batch: 417965

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 417630

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.0250		0.100	0.0250	mg/L		04/03/24 09:30	04/04/24 14:58	1
Antimony	<0.0380		0.100	0.0380	mg/L		04/03/24 09:30	04/04/24 14:58	1
Arsenic	<0.0160		0.0800	0.0160	mg/L		04/03/24 09:30	04/04/24 14:58	1
Barium	<0.00200		0.0100	0.00200	mg/L		04/03/24 09:30	04/04/24 14:58	1
Beryllium	<0.00140		0.0100	0.00140	mg/L		04/03/24 09:30	04/04/24 14:58	1
Cadmium	<0.00390		0.0200	0.00390	mg/L		04/03/24 09:30	04/04/24 14:58	1
Calcium	<0.330		1.00	0.330	mg/L		04/03/24 09:30	04/04/24 14:58	1
Chromium	<0.00600		0.0200	0.00600	mg/L		04/03/24 09:30	04/04/24 14:58	1
Copper	<0.00490		0.0200	0.00490	mg/L		04/03/24 09:30	04/04/24 14:58	1
Iron	<0.0930		0.500	0.0930	mg/L		04/03/24 09:30	04/04/24 14:58	1
Lead	<0.0240		0.100	0.0240	mg/L		04/03/24 09:30	04/04/24 14:58	1
Magnesium	<0.250		1.00	0.250	mg/L		04/03/24 09:30	04/04/24 14:58	1
Nickel	<0.0150		0.0500	0.0150	mg/L		04/03/24 09:30	04/04/24 14:58	1
Potassium	<0.880		2.00	0.880	mg/L		04/03/24 09:30	04/04/24 14:58	1
Selenium	<0.0290		0.100	0.0290	mg/L		04/03/24 09:30	04/04/24 14:58	1
Silver	<0.00910		0.0200	0.00910	mg/L		04/03/24 09:30	04/04/24 14:58	1
Zinc	<0.0160		0.0400	0.0160	mg/L		04/03/24 09:30	04/04/24 14:58	1

Lab Sample ID: MB 310-417630/1-A
Matrix: Water
Analysis Batch: 418023

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 417630

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	<1.20		2.00	1.20	mg/L		04/03/24 09:30	04/05/24 14:28	1

Lab Sample ID: LCS 310-417630/2-A
Matrix: Water
Analysis Batch: 417965

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 417630

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	2.00	2.087		mg/L		104	85 - 115
Antimony	2.00	1.942		mg/L		97	85 - 115

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: LCS 310-417630/2-A
Matrix: Water
Analysis Batch: 417965

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 417630

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	2.00	1.973		mg/L		99	85 - 115
Barium	1.00	0.9897		mg/L		99	85 - 115
Beryllium	1.00	1.006		mg/L		101	85 - 115
Cadmium	1.00	0.9356		mg/L		94	85 - 115
Calcium	20.0	18.58		mg/L		93	85 - 115
Chromium	1.00	0.9439		mg/L		94	85 - 115
Copper	2.00	1.916		mg/L		96	85 - 115
Iron	2.00	1.949		mg/L		97	85 - 115
Lead	2.00	1.847		mg/L		92	85 - 115
Magnesium	20.0	19.19		mg/L		96	85 - 115
Nickel	2.00	1.848		mg/L		92	85 - 115
Potassium	20.0	22.23		mg/L		111	85 - 115
Selenium	4.00	3.795		mg/L		95	85 - 115
Silver	0.100	0.09870		mg/L		99	85 - 115
Zinc	2.00	1.878		mg/L		94	85 - 115

Lab Sample ID: LCS 310-417630/2-A
Matrix: Water
Analysis Batch: 418023

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 417630

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sodium	20.0	19.50		mg/L		98	85 - 115

Lab Sample ID: MB 310-417774/1-A
Matrix: Water
Analysis Batch: 417964

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Magnesium	<0.250		1.00	0.250	mg/L			04/04/24 12:15	1

Lab Sample ID: LCS 310-417774/2-A
Matrix: Water
Analysis Batch: 417964

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Magnesium	20.0	17.28		mg/L		86	85 - 115

Method: 245.2 - Mercury (CVAA)

Lab Sample ID: MB 310-418012/1-A
Matrix: Water
Analysis Batch: 418170

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 418012

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000140		0.000200	0.000140	mg/L		04/05/24 14:06	04/08/24 13:43	1

Method: 245.2 - Mercury (CVAA) (Continued)

Lab Sample ID: LCS 310-418012/2-A
Matrix: Water
Analysis Batch: 418170

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 418012

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00167	0.001780		mg/L		107	85 - 115

Method: 1664A - HEM and SGT-HEM

Lab Sample ID: MB 310-417844/1-A
Matrix: Water
Analysis Batch: 417993

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 417844

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease)	<4.3		5.0	4.3	mg/L		04/05/24 06:00	04/05/24 06:00	1

Lab Sample ID: LCS 310-417844/2-A
Matrix: Water
Analysis Batch: 417993

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 417844

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
HEM (Oil & Grease)	40.0	41.10		mg/L		103	78 - 114

Lab Sample ID: 310-277939-1 MS
Matrix: Water
Analysis Batch: 417993

Client Sample ID: SW-3
Prep Type: Total/NA
Prep Batch: 417844

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
HEM (Oil & Grease)	<5.0		44.9	36.52		mg/L		81	78 - 114

Method: 180.1 - Turbidity, Nephelometric

Lab Sample ID: MB 310-417624/5
Matrix: Water
Analysis Batch: 417624

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Turbidity	<0.20		1.0	0.20	NTU			04/02/24 15:19	1

Lab Sample ID: LCS 310-417624/6
Matrix: Water
Analysis Batch: 417624

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Turbidity	20.0	20		NTU		102	90 - 110

Method: 335.4 - Cyanide, Total

Lab Sample ID: MB 310-417720/1-A
Matrix: Water
Analysis Batch: 417784

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 417720

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	<0.00430		0.0100	0.00430	mg/L		04/03/24 09:59	04/03/24 21:20	1

Method: 335.4 - Cyanide, Total (Continued)

Lab Sample ID: LCS 310-417720/2-A
Matrix: Water
Analysis Batch: 417784

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 417720

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	0.200	0.1939		mg/L		97	90 - 110

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 310-417816/1-A
Matrix: Water
Analysis Batch: 417912

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 417816

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	<0.220		0.500	0.220	mg/L		04/04/24 08:32	04/04/24 19:06	1

Lab Sample ID: LCS 310-417816/2-A
Matrix: Water
Analysis Batch: 417912

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 417816

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Ammonia	4.00	3.700		mg/L		92	90 - 110

Method: 353.2 - Nitrogen, Nitrate-Nitrite

Lab Sample ID: MB 310-418300/16
Matrix: Water
Analysis Batch: 418300

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	<0.0540		0.100	0.0540	mg/L			04/10/24 01:07	1

Lab Sample ID: MB 310-418300/48
Matrix: Water
Analysis Batch: 418300

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	<0.0540		0.100	0.0540	mg/L			04/10/24 02:15	1

Lab Sample ID: LCS 310-418300/12
Matrix: Water
Analysis Batch: 418300

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate Nitrite as N	2.07	2.055		mg/L		99	90 - 110

Lab Sample ID: LCS 310-418300/49
Matrix: Water
Analysis Batch: 418300

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate Nitrite as N	2.07	2.212		mg/L		107	90 - 110

Method: 365.1 - Phosphorus, Total

Lab Sample ID: MB 310-417672/1-A
Matrix: Water
Analysis Batch: 417782

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 417672

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Phosphorus as P	<0.0620		0.100	0.0620	mg/L		04/03/24 08:32	04/03/24 18:15	1

Lab Sample ID: LCS 310-417672/2-A
Matrix: Water
Analysis Batch: 417782

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 417672

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Phosphorus as P	1.00	0.9349		mg/L		93	90 - 110

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: MB 310-418015/1
Matrix: Water
Analysis Batch: 418015

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<1.70		5.00	1.70	mg/L			04/05/24 14:20	1

Lab Sample ID: LCS 310-418015/2
Matrix: Water
Analysis Batch: 418015

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	108.0		mg/L		108	75 - 116

Lab Sample ID: MB 310-418050/1
Matrix: Water
Analysis Batch: 418050

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<1.70		5.00	1.70	mg/L			04/05/24 18:43	1

Lab Sample ID: LCS 310-418050/2
Matrix: Water
Analysis Batch: 418050

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	106.0		mg/L		106	75 - 116

Method: SM 2320B - Alkalinity

Lab Sample ID: LCS 310-418207/2
Matrix: Water
Analysis Batch: 418207

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Alkalinity, Total (As CaCO3)	1000	937.7		mg/L		94	90 - 110

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: 310-277939-1 DU
Matrix: Water
Analysis Batch: 418207

Client Sample ID: SW-3
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Alkalinity, Total (As CaCO3)	249		236.0		mg/L		5	10
Alkalinity, Bicarbonate (As CaCO3)	249		236.0		mg/L		5	
Phenolphthalein Alkalinity as CaCO3	<2.50		<2.50		mg/L		NC	

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 310-417855/1
Matrix: Water
Analysis Batch: 417855

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<34.0		50.0	34.0	mg/L			04/04/24 10:51	1

Lab Sample ID: LCS 310-417855/2
Matrix: Water
Analysis Batch: 417855

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	1000	946.0		mg/L		95	90 - 110

Method: SM 4500 H+ B - pH

Lab Sample ID: LCS 310-417639/1
Matrix: Water
Analysis Batch: 417639

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
pH	7.00	7.0		SU		99	98 - 102

Lab Sample ID: 310-277939-2 DU
Matrix: Water
Analysis Batch: 417639

Client Sample ID: SW-3
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.5	HF	7.5		SU		0.1	20

Method: SM 5210B - BOD, 5-Day

Lab Sample ID: USB 310-417646/1
Matrix: Water
Analysis Batch: 417646

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	USB Result	USB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand	<3.00		3.00	3.00	mg/L			04/03/24 07:06	1

Method: SM 5210B - BOD, 5-Day (Continued)

Lab Sample ID: LCS 310-417646/2
Matrix: Water
Analysis Batch: 417646

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Biochemical Oxygen Demand	198	152.0	*-	mg/L		77	85 - 115

Lab Sample ID: 310-277939-2 DU
Matrix: Water
Analysis Batch: 417646

Client Sample ID: SW-3
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Biochemical Oxygen Demand	<3.00	*-	<3.00	*-	mg/L		NC	30

Method: SM 5220D - COD

Lab Sample ID: MB 310-417970/5
Matrix: Water
Analysis Batch: 417970

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	<4.80		5.00	4.80	mg/L			04/05/24 10:12	1

Lab Sample ID: LCS 310-417970/3
Matrix: Water
Analysis Batch: 417970

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chemical Oxygen Demand	125	122.2		mg/L		97	85 - 115

Method: SM 5310C - TOC

Lab Sample ID: MB 310-418510/14
Matrix: Water
Analysis Batch: 418510

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	<0.230		1.00	0.230	mg/L			04/09/24 14:47	1

Lab Sample ID: LCS 310-418510/15
Matrix: Water
Analysis Batch: 418510

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	9.99	10.89		mg/L		109	85 - 115

QC Association Summary

Client: AECOM
Job ID: 310-277939-1
Project/Site: Black Hawk Co. SWPPP Sampling

GC/MS Semi VOA

Prep Batch: 417988

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277939-1	SW-3	Total/NA	Water	3510C	
310-277939-2	SW-3	Total/NA	Water	3510C	
MB 310-417988/1-A	Method Blank	Total/NA	Water	3510C	
LCS 310-417988/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 310-417988/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 418426

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277939-1	SW-3	Total/NA	Water	8270E	417988
310-277939-2	SW-3	Total/NA	Water	8270E	417988
MB 310-417988/1-A	Method Blank	Total/NA	Water	8270E	417988
LCS 310-417988/2-A	Lab Control Sample	Total/NA	Water	8270E	417988
LCSD 310-417988/3-A	Lab Control Sample Dup	Total/NA	Water	8270E	417988

HPLC/IC

Analysis Batch: 418009

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277939-1	SW-3	Total/NA	Water	300.0	
310-277939-2	SW-3	Total/NA	Water	300.0	
MB 310-418009/3	Method Blank	Total/NA	Water	300.0	
LCS 310-418009/4	Lab Control Sample	Total/NA	Water	300.0	

Metals

Prep Batch: 417630

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277939-1	SW-3	Total/NA	Water	200.7	
310-277939-2	SW-3	Total/NA	Water	200.7	
MB 310-417630/1-A	Method Blank	Total/NA	Water	200.7	
LCS 310-417630/2-A	Lab Control Sample	Total/NA	Water	200.7	

Filtration Batch: 417774

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277939-1	SW-3	Dissolved	Water	Filtration	
310-277939-2	SW-3	Dissolved	Water	Filtration	
MB 310-417774/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 310-417774/2-A	Lab Control Sample	Dissolved	Water	Filtration	

Analysis Batch: 417964

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277939-1	SW-3	Dissolved	Water	200.7 Rev 4.4	417774
310-277939-2	SW-3	Dissolved	Water	200.7 Rev 4.4	417774
MB 310-417774/1-A	Method Blank	Dissolved	Water	200.7 Rev 4.4	417774
LCS 310-417774/2-A	Lab Control Sample	Dissolved	Water	200.7 Rev 4.4	417774

Analysis Batch: 417965

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277939-1	SW-3	Total/NA	Water	200.7 Rev 4.4	417630
310-277939-2	SW-3	Total/NA	Water	200.7 Rev 4.4	417630
MB 310-417630/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	417630
LCS 310-417630/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	417630

QC Association Summary

Client: AECOM
Job ID: 310-277939-1
Project/Site: Black Hawk Co. SWPPP Sampling

Metals

Prep Batch: 418012

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277939-1	SW-3	Total/NA	Water	245.1	
310-277939-2	SW-3	Total/NA	Water	245.1	
MB 310-418012/1-A	Method Blank	Total/NA	Water	245.1	
LCS 310-418012/2-A	Lab Control Sample	Total/NA	Water	245.1	

Analysis Batch: 418023

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277939-1	SW-3	Total/NA	Water	200.7 Rev 4.4	417630
310-277939-2	SW-3	Total/NA	Water	200.7 Rev 4.4	417630
MB 310-417630/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	417630
LCS 310-417630/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	417630

Analysis Batch: 418101

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277939-1	SW-3	Total/NA	Water	SM 2340B	
310-277939-2	SW-3	Total/NA	Water	SM 2340B	

Analysis Batch: 418170

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277939-1	SW-3	Total/NA	Water	245.2	418012
310-277939-2	SW-3	Total/NA	Water	245.2	418012
MB 310-418012/1-A	Method Blank	Total/NA	Water	245.2	418012
LCS 310-418012/2-A	Lab Control Sample	Total/NA	Water	245.2	418012

General Chemistry

Analysis Batch: 417624

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277939-1	SW-3	Total/NA	Water	180.1	
310-277939-2	SW-3	Total/NA	Water	180.1	
MB 310-417624/5	Method Blank	Total/NA	Water	180.1	
LCS 310-417624/6	Lab Control Sample	Total/NA	Water	180.1	

Analysis Batch: 417639

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277939-1	SW-3	Total/NA	Water	SM 4500 H+ B	
310-277939-2	SW-3	Total/NA	Water	SM 4500 H+ B	
LCS 310-417639/1	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
310-277939-2 DU	SW-3	Total/NA	Water	SM 4500 H+ B	

Analysis Batch: 417646

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277939-1	SW-3	Total/NA	Water	SM 5210B	
310-277939-2	SW-3	Total/NA	Water	SM 5210B	
USB 310-417646/1	Method Blank	Total/NA	Water	SM 5210B	
LCS 310-417646/2	Lab Control Sample	Total/NA	Water	SM 5210B	
310-277939-2 DU	SW-3	Total/NA	Water	SM 5210B	

Prep Batch: 417672

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277939-1	SW-3	Total/NA	Water	365.1	

General Chemistry (Continued)

Prep Batch: 417672 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277939-2	SW-3	Total/NA	Water	365.1	
MB 310-417672/1-A	Method Blank	Total/NA	Water	365.1	
LCS 310-417672/2-A	Lab Control Sample	Total/NA	Water	365.1	

Prep Batch: 417720

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277939-1	SW-3	Total/NA	Water	Distill/CN	
310-277939-2	SW-3	Total/NA	Water	Distill/CN	
MB 310-417720/1-A	Method Blank	Total/NA	Water	Distill/CN	
LCS 310-417720/2-A	Lab Control Sample	Total/NA	Water	Distill/CN	

Analysis Batch: 417782

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277939-1	SW-3	Total/NA	Water	365.1	417672
310-277939-2	SW-3	Total/NA	Water	365.1	417672
MB 310-417672/1-A	Method Blank	Total/NA	Water	365.1	417672
LCS 310-417672/2-A	Lab Control Sample	Total/NA	Water	365.1	417672

Analysis Batch: 417784

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277939-1	SW-3	Total/NA	Water	335.4	417720
310-277939-2	SW-3	Total/NA	Water	335.4	417720
MB 310-417720/1-A	Method Blank	Total/NA	Water	335.4	417720
LCS 310-417720/2-A	Lab Control Sample	Total/NA	Water	335.4	417720

Prep Batch: 417816

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277939-1	SW-3	Total/NA	Water	Distill/Ammonia	
310-277939-2	SW-3	Total/NA	Water	Distill/Ammonia	
MB 310-417816/1-A	Method Blank	Total/NA	Water	Distill/Ammonia	
LCS 310-417816/2-A	Lab Control Sample	Total/NA	Water	Distill/Ammonia	

Prep Batch: 417844

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277939-1	SW-3	Total/NA	Water	1664A	
310-277939-2	SW-3	Total/NA	Water	1664A	
MB 310-417844/1-A	Method Blank	Total/NA	Water	1664A	
LCS 310-417844/2-A	Lab Control Sample	Total/NA	Water	1664A	
310-277939-1 MS	SW-3	Total/NA	Water	1664A	

Analysis Batch: 417855

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277939-1	SW-3	Total/NA	Water	SM 2540C	
310-277939-2	SW-3	Total/NA	Water	SM 2540C	
MB 310-417855/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-417855/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 417912

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277939-1	SW-3	Total/NA	Water	350.1	417816
310-277939-2	SW-3	Total/NA	Water	350.1	417816

General Chemistry (Continued)

Analysis Batch: 417912 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 310-417816/1-A	Method Blank	Total/NA	Water	350.1	417816
LCS 310-417816/2-A	Lab Control Sample	Total/NA	Water	350.1	417816

Analysis Batch: 417970

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277939-1	SW-3	Total/NA	Water	SM 5220D	
310-277939-2	SW-3	Total/NA	Water	SM 5220D	
MB 310-417970/5	Method Blank	Total/NA	Water	SM 5220D	
LCS 310-417970/3	Lab Control Sample	Total/NA	Water	SM 5220D	

Analysis Batch: 417993

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277939-1	SW-3	Total/NA	Water	1664A	417844
310-277939-2	SW-3	Total/NA	Water	1664A	417844
MB 310-417844/1-A	Method Blank	Total/NA	Water	1664A	417844
LCS 310-417844/2-A	Lab Control Sample	Total/NA	Water	1664A	417844
310-277939-1 MS	SW-3	Total/NA	Water	1664A	417844

Analysis Batch: 418015

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277939-1	SW-3	Total/NA	Water	I-3765-85	
MB 310-418015/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-418015/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Analysis Batch: 418050

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277939-2	SW-3	Total/NA	Water	I-3765-85	
MB 310-418050/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-418050/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Analysis Batch: 418207

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277939-1	SW-3	Total/NA	Water	SM 2320B	
310-277939-2	SW-3	Total/NA	Water	SM 2320B	
LCS 310-418207/2	Lab Control Sample	Total/NA	Water	SM 2320B	
310-277939-1 DU	SW-3	Total/NA	Water	SM 2320B	

Analysis Batch: 418300

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277939-1	SW-3	Total/NA	Water	353.2	
310-277939-2	SW-3	Total/NA	Water	353.2	
MB 310-418300/16	Method Blank	Total/NA	Water	353.2	
MB 310-418300/48	Method Blank	Total/NA	Water	353.2	
LCS 310-418300/12	Lab Control Sample	Total/NA	Water	353.2	
LCS 310-418300/49	Lab Control Sample	Total/NA	Water	353.2	

Analysis Batch: 418510

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277939-1	SW-3	Total/NA	Water	SM 5310C	
310-277939-2	SW-3	Total/NA	Water	SM 5310C	
MB 310-418510/14	Method Blank	Total/NA	Water	SM 5310C	

General Chemistry (Continued)

Analysis Batch: 418510 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 310-418510/15	Lab Control Sample	Total/NA	Water	SM 5310C	

Lab Chronicle

Client: AECOM
Job ID: 310-277939-1
Project/Site: Black Hawk Co. SWPPP Sampling

Client Sample ID: SW-3
Lab Sample ID: 310-277939-1
Date Collected: 04/02/24 08:00
Matrix: Water
Date Received: 04/02/24 14:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3510C			417988	JT8P	EET CF	04/05/24 10:59
Total/NA	Analysis	8270E		1	418426	L0FS	EET CF	04/11/24 17:24
Total/NA	Analysis	300.0		10	418009	QTZ5	EET CF	04/04/24 16:35
Dissolved	Filtration	Filtration			417774	QTZ5	EET CF	04/03/24 16:33
Dissolved	Analysis	200.7 Rev 4.4		1	417964	ZRI4	EET CF	04/04/24 12:35
Total/NA	Prep	200.7			417630	QTZ5	EET CF	04/03/24 09:30
Total/NA	Analysis	200.7 Rev 4.4		1	417965	ZRI4	EET CF	04/04/24 15:47
Total/NA	Prep	200.7			417630	QTZ5	EET CF	04/03/24 09:30
Total/NA	Analysis	200.7 Rev 4.4		1	418023	ZRI4	EET CF	04/05/24 14:56
Total/NA	Prep	245.1			418012	A6US	EET CF	04/05/24 14:06
Total/NA	Analysis	245.2		1	418170	DHM5	EET CF	04/08/24 14:08
Total/NA	Analysis	SM 2340B		1	418101	HE7K	EET CF	04/04/24 15:47
Total/NA	Prep	1664A			417844	DGU1	EET CF	04/05/24 06:00
Total/NA	Analysis	1664A		1	417993	DGU1	EET CF	04/05/24 06:00
Total/NA	Analysis	180.1		10	417624	QTZ5	EET CF	04/02/24 15:26
Total/NA	Prep	Distill/CN			417720	WZC8	EET CF	04/03/24 09:59
Total/NA	Analysis	335.4		1	417784	ZJX4	EET CF	04/03/24 21:27
Total/NA	Prep	Distill/Ammonia			417816	MQ8M	EET CF	04/04/24 08:32
Total/NA	Analysis	350.1		1	417912	ZJX4	EET CF	04/04/24 19:15
Total/NA	Analysis	353.2		1	418300	ENB7	EET CF	04/10/24 01:44
Total/NA	Prep	365.1			417672	MAQ3	EET CF	04/03/24 08:32
Total/NA	Analysis	365.1		1	417782	ZJX4	EET CF	04/03/24 18:17
Total/NA	Analysis	I-3765-85		1	418015	HE7K	EET CF	04/05/24 14:20
Total/NA	Analysis	SM 2320B		1	418207	MAQ3	EET CF	04/08/24 11:53
Total/NA	Analysis	SM 2540C		1	417855	DGU1	EET CF	04/04/24 10:51
Total/NA	Analysis	SM 4500 H+ B		1	417639	A3GU	EET CF	04/02/24 17:40
Total/NA	Analysis	SM 5210B		1	417646	W9YR	EET CF	04/03/24 08:16
Total/NA	Analysis	SM 5220D		5	417970	D7CP	EET CF	04/05/24 10:12
Total/NA	Analysis	SM 5310C		1	418510	DGU1	EET CF	04/09/24 18:59

Client Sample ID: SW-3
Lab Sample ID: 310-277939-2
Date Collected: 04/02/24 10:00
Matrix: Water
Date Received: 04/02/24 14:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3510C			417988	JT8P	EET CF	04/05/24 10:59
Total/NA	Analysis	8270E		1	418426	L0FS	EET CF	04/11/24 17:50
Total/NA	Analysis	300.0		10	418009	QTZ5	EET CF	04/04/24 16:49
Dissolved	Filtration	Filtration			417774	QTZ5	EET CF	04/03/24 16:33
Dissolved	Analysis	200.7 Rev 4.4		1	417964	ZRI4	EET CF	04/04/24 12:37
Total/NA	Prep	200.7			417630	QTZ5	EET CF	04/03/24 09:30
Total/NA	Analysis	200.7 Rev 4.4		1	417965	ZRI4	EET CF	04/04/24 15:49

Lab Chronicle

Client: AECOM
Job ID: 310-277939-1
Project/Site: Black Hawk Co. SWPPP Sampling

Client Sample ID: SW-3
Lab Sample ID: 310-277939-2
Date Collected: 04/02/24 10:00
Matrix: Water
Date Received: 04/02/24 14:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	200.7			417630	QTZ5	EET CF	04/03/24 09:30
Total/NA	Analysis	200.7 Rev 4.4		1	418023	ZRI4	EET CF	04/05/24 14:58
Total/NA	Prep	245.1			418012	A6US	EET CF	04/05/24 14:06
Total/NA	Analysis	245.2		1	418170	DHM5	EET CF	04/08/24 14:10
Total/NA	Analysis	SM 2340B		1	418101	HE7K	EET CF	04/04/24 15:49
Total/NA	Prep	1664A			417844	DGU1	EET CF	04/05/24 06:00
Total/NA	Analysis	1664A		1	417993	DGU1	EET CF	04/05/24 06:00
Total/NA	Analysis	180.1		10	417624	QTZ5	EET CF	04/02/24 15:27
Total/NA	Prep	Distill/CN			417720	WZC8	EET CF	04/03/24 09:59
Total/NA	Analysis	335.4		1	417784	ZJX4	EET CF	04/03/24 21:27
Total/NA	Prep	Distill/Ammonia			417816	MQ8M	EET CF	04/04/24 08:32
Total/NA	Analysis	350.1		1	417912	ZJX4	EET CF	04/04/24 19:15
Total/NA	Analysis	353.2		1	418300	ENB7	EET CF	04/10/24 01:46
Total/NA	Prep	365.1			417672	MAQ3	EET CF	04/03/24 08:32
Total/NA	Analysis	365.1		1	417782	ZJX4	EET CF	04/03/24 18:18
Total/NA	Analysis	I-3765-85		1	418050	A4XP	EET CF	04/05/24 18:43
Total/NA	Analysis	SM 2320B		1	418207	MAQ3	EET CF	04/08/24 12:30
Total/NA	Analysis	SM 2540C		1	417855	DGU1	EET CF	04/04/24 10:51
Total/NA	Analysis	SM 4500 H+ B		1	417639	A3GU	EET CF	04/02/24 17:40
Total/NA	Analysis	SM 5210B		1	417646	W9YR	EET CF	04/03/24 08:20
Total/NA	Analysis	SM 5220D		5	417970	D7CP	EET CF	04/05/24 10:12
Total/NA	Analysis	SM 5310C		1	418510	DGU1	EET CF	04/09/24 19:35

Laboratory References:
EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Accreditation/Certification Summary

Client: AECOM
Job ID: 310-277939-1
Project/Site: Black Hawk Co. SWPPP Sampling

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8270E	3510C	Water	Alpha-Terpineol
8270E	3510C	Water	Aniline
8270E	3510C	Water	Benzoic acid
8270E	3510C	Water	Pyridine

Method Summary

Client: AECOM
Job ID: 310-277939-1
Project/Site: Black Hawk Co. SWPPP Sampling

Method	Method Description	Protocol	Laboratory
8270E	Semivolatile Organic Compounds (GC/MS)	SW846	EET CF
300.0	Anions, Ion Chromatography	EPA	EET CF
200.7 Rev 4.4	Metals (ICP)	EPA	EET CF
245.2	Mercury (CVAA)	EPA	EET CF
SM 2340B	Total Hardness (as CaCO3) by calculation	SM	EET CF
1664A	HEM and SGT-HEM	1664A	EET CF
180.1	Turbidity, Nephelometric	EPA	EET CF
335.4	Cyanide, Total	EPA	EET CF
350.1	Nitrogen, Ammonia	EPA	EET CF
353.2	Nitrogen, Nitrate-Nitrite	EPA	EET CF
365.1	Phosphorus, Total	EPA	EET CF
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
SM 2320B	Alkalinity	SM	EET CF
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CF
SM 4500 H+ B	pH	SM	EET CF
SM 5210B	BOD, 5-Day	SM	EET CF
SM 5220D	COD	SM	EET CF
SM 5310C	TOC	SM	EET CF
1664A	HEM and SGT-HEM (Aqueous)	1664A	EET CF
200.7	Preparation, Total Metals	EPA	EET CF
245.1	Preparation, Mercury	EPA	EET CF
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET CF
365.1	Sample Digestion for Total Phosphorus	MCAWW	EET CF
Distill/Ammonia	Distillation, Ammonia	None	EET CF
Distill/CN	Distillation, Cyanide	None	EET CF
Filtration	Sample Filtration	None	EET CF

Protocol References:

1664A = EPA-821-98-002
EPA = US Environmental Protection Agency
MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.
None = None
SM = "Standard Methods For The Examination Of Water And Wastewater"
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.
USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

eurofins | Environment Testing America

310-277939 Chain of Custody

Cooler/Sample Receipt and Temperature Log . orm

Client Information

Client: Accom

City/State: CITY | STATE TA | Project:

Receipt Information

Date/Time Received: DATE 4/2/24 | TIME 1415 | Received By: [signature]

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☐ Lab Courier ☐ Lab Field Services ☒ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☒ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☒ Yes ☐ No *If yes:* Cooler # 1 of 2

Cooler Custody Seals Present? ☐ Yes ☒ No *If yes:* Cooler custody seals intact? ☐ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☒ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☐ Yes ☒ No *If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: T | Correction Factor (°C): +0.0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 6.8 | Corrected Temp (°C): 6.8

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☒ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☒ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

eurofins | Environment Testing America

Place COC scanning label here

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: AECOM

City/State: CITY | STATE TA | Project:

Receipt Information

Date/Time Received: DATE 4/2/24 | TIME 1413 | Received By:

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☑ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☑ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☑ Yes ☒ No *If yes:* Cooler # 2 of 2

Cooler Custody Seals Present? ☐ Yes ☑ No *If yes:* Cooler custody seals intact? ☐ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☑ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☑ Yes ☐ No *If yes:* Which VOA samples are in cooler? ↓

HCL Trips

Temperature Record

Coolant: ☑ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: T | Correction Factor (°C): +0.0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 3.9 | Corrected Temp (°C): 3.9

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE: If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

Eurofins TestAmerica, Cedar Falls
3019 Venture Way

Cedar Falls, IA 50613
phone 319 277 2401 fax 319 277 2425

Chain of Custody Record

eurofins

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other: Iowa DNR

Eurofins Environment T

Client Contact	Project Manager: Christopher Oelkers	Site Contact: John Foster	Date: 4-2-24	COC No
AECOM	Email: Christopher.Oelkers@aecom.com	Lab Contact: Tayler Sanderson	Carrier:	3 of 4 C
501 Sycamore St., Suite 222	Tel/Fax: (319)232-6531/(319)232-0271			Sampler:
Waterloo, IA 50703	Analysis Turnaround Time			For Lab Use Only:
(319)232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS			Walk-in Client:
(319)232-0271 FAX	TAT if different from Below _____			Lab Sampling
Project Name: Black Hawk Co SWPPP Sampling	☑ 2 weeks			
Site: Black Hawk County Landfill	☐ 1 week			Job / SDG No
P O #	☐ 2 days			
	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	Total Metals (Al, Sb, Ar, Ba, Be, Ca, Cr, Cu, Fe, Pb, Hg, Mg, Ni, Se, Ag, Na, Zn)	NO2 + NO3, Ammonia, COD	Cl, SO4, TDS, TSS, Total P	Alkalinity, Total Hardness, Bicarbonate	Lab filter Mg	TOC	Cyanide	Oil & Grease	BOD	pH, Turbidity	Total Ca, K	a-Terpineol, Aniline, Benzoic Acid	Naphthalene, p-Cresol, Phenol	Pyridine	Sample Specific
SW-3	4-2-24	0800	G	GW	13	N		X	X	X	X	X	X	X	X	X	X	X	X	X	X	
SW-3	4-2-24	1000	C	GW	13	N		X	X	X	X	X	X	X	X	X	X	X	X	X	X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments: Table 10-1 attached list of parameters required for SWPPP analyses

Field staff guage - 1.82'

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No		Cooler Temp (°C) Obs'd _____ Corr'd _____ Therm ID No _____		
Relinquished by: Ben Porter	Company: Aecom	Date/Time: 4-2-24	Received by:	Company:	Date/Time: 4-2-24 1405
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

Form No CA-C-WI-002, Rev 4.23, da

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-277939-1

Login Number: 277939
List Number: 1
Creator: Costello, Mackenzie K

List Source: Eurofins Cedar Falls

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Quantitation Limit Exceptions Summary

Client: AECOM
Job ID: 310-277939-1
Project/Site: Black Hawk Co. SWPPP Sampling

The requested project specific reporting limits listed below were less than laboratory standard quantitation limits (PQL) but greater than or equal to the laboratory method detection limits (MDL). It must be noted that results reported below lab standard quantitation limits may result in false positive/false negative values and less accurate quantitation. Routine laboratory procedures do not indicate corrective action for detections below the laboratory's PQL.

Method	Analyte	Matrix	Prep Type	Unit	Client RL	Lab PQL
SM 2340B	Total hardness as CaCO3	Water	Total/NA	mg/L	1.00	6.6

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Craig Chumbley
AECOM
501 Sycamore Street
Suite #222
Waterloo, Iowa 50703

Generated 4/25/2024 12:45:14 PM Revision 1

JOB DESCRIPTION

Black Hawk Co. SWPPP Sampling

JOB NUMBER

310-277940-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

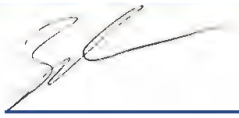
my EOL

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



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Revision 1

Authorized for release by
Zach Bindert, Client Service Manager
Zach.Bindert@et.eurofinsus.com
(319)277-2401

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Job Narrative
310-277940-1

REVISION

The report being provided is a revision of the original report sent on 4/16/2024. The report (revision 1) is being revised due to This report was revised 4/25/2024. Zn was not analyzed due to project setup error..

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 4/2/2024 2:15 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 3.9°C and 3.9°C.

GC/MS Semi VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

HPLC/IC
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
Method SM5210B_Calc: The USB dilution water D.O. depletion was greater than 0.2 mg/L. The associated sample results in batch 310-417646 are qualified and reported. The USB depletion was 0.815 mg/L.

Method SM5210B_Calc: The glucose-glutamic acid standard (LCS) recovered outside the recovery limits specified in the method in batch 310-417646. The method holding time had expired, therefore the analysis was not repeated. The data was qualified and reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Sample Summary

Client: AECOM
Job ID: 310-277940-1
Project/Site: Black Hawk Co. SWPPP Sampling

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-277940-1	SW-4	Water	04/02/24 08:45	04/02/24 14:15
310-277940-2	SW-4	Water	04/02/24 10:45	04/02/24 14:15

Detection Summary

Client: AECOM
Job ID: 310-277940-1
Project/Site: Black Hawk Co. SWPPP Sampling

Client Sample ID: SW-4 — Lab Sample ID: 310-277940-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aniline	7.84	J	10.6	0.372	ug/L	1		8270E	Total/NA
Chloride	19.3		10.0	4.50	mg/L	10		300.0	Total/NA
Sulfate	294		10.0	4.20	mg/L	10		300.0	Total/NA
Aluminum	1.76		0.100	0.0250	mg/L	1		200.7 Rev 4.4	Total/NA
Barium	0.0555		0.0100	0.00200	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	111		1.00	0.330	mg/L	1		200.7 Rev 4.4	Total/NA
Copper	0.00703	J	0.0200	0.00490	mg/L	1		200.7 Rev 4.4	Total/NA
Iron	2.46		0.500	0.0930	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	24.2		1.00	0.250	mg/L	1		200.7 Rev 4.4	Total/NA
Potassium	5.57		2.00	0.880	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	12.0		2.00	1.20	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	22.4		1.00	0.250	mg/L	1		200.7 Rev 4.4	Dissolved
Total hardness as CaCO3	377		4.12	1.03	mg/L	1		SM 2340B	Total/NA
Turbidity	17		10	2.0	NTU	10		180.1	Total/NA
Ammonia	0.378	J	0.500	0.220	mg/L	1		350.1	Total/NA
Nitrate Nitrite as N	0.366		0.100	0.0540	mg/L	1		353.2	Total/NA
Total Phosphorus as P	0.112		0.100	0.0620	mg/L	1		365.1	Total/NA
Total Suspended Solids	116		15.0	5.10	mg/L	1		I-3765-85	Total/NA
Alkalinity, Total (As CaCO3)	86.6		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Alkalinity, Bicarbonate (As CaCO3)	86.6		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	542		50.0	34.0	mg/L	1		SM 2540C	Total/NA
pH	7.7	HF	1.0	1.0	SU	1		SM 4500 H+ B	Total/NA
Biochemical Oxygen Demand	4.03	b *-	3.00	3.00	mg/L	1		SM 5210B	Total/NA
Chemical Oxygen Demand	45.5		25.0	24.0	mg/L	5		SM 5220D	Total/NA
Total Organic Carbon	16.4		1.00	0.230	mg/L	1		SM 5310C	Total/NA

Client Sample ID: SW-4 — Lab Sample ID: 310-277940-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aniline	8.43	J	10.2	0.357	ug/L	1		8270E	Total/NA
Chloride	19.7		10.0	4.50	mg/L	10		300.0	Total/NA
Sulfate	297		10.0	4.20	mg/L	10		300.0	Total/NA
Aluminum	1.67		0.100	0.0250	mg/L	1		200.7 Rev 4.4	Total/NA
Barium	0.0542		0.0100	0.00200	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	110		1.00	0.330	mg/L	1		200.7 Rev 4.4	Total/NA
Copper	0.00643	J	0.0200	0.00490	mg/L	1		200.7 Rev 4.4	Total/NA
Iron	2.29		0.500	0.0930	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	23.9		1.00	0.250	mg/L	1		200.7 Rev 4.4	Total/NA
Potassium	5.47		2.00	0.880	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	11.9		2.00	1.20	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	22.0		1.00	0.250	mg/L	1		200.7 Rev 4.4	Dissolved
Total hardness as CaCO3	373		4.12	1.03	mg/L	1		SM 2340B	Total/NA
Turbidity	95		10	2.0	NTU	10		180.1	Total/NA
Ammonia	0.423	J	0.500	0.220	mg/L	1		350.1	Total/NA
Nitrate Nitrite as N	0.421		0.100	0.0540	mg/L	1		353.2	Total/NA
Total Phosphorus as P	0.109		0.100	0.0620	mg/L	1		365.1	Total/NA
Total Suspended Solids	82.0		7.50	2.55	mg/L	1		I-3765-85	Total/NA
Alkalinity, Total (As CaCO3)	75.8		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Alkalinity, Bicarbonate (As CaCO3)	75.8		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	548		50.0	34.0	mg/L	1		SM 2540C	Total/NA
pH	7.8	HF	1.0	1.0	SU	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: AECOM
Job ID: 310-277940-1
Project/Site: Black Hawk Co. SWPPP Sampling

Client Sample ID: SW-4 (Continued)
Lab Sample ID: 310-277940-2

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Biochemical Oxygen Demand	7.59	b *-	3.00	3.00	mg/L	1		SM 5210B	Total/NA
Chemical Oxygen Demand	60.4		25.0	24.0	mg/L	5		SM 5220D	Total/NA
Total Organic Carbon	16.3		1.00	0.230	mg/L	1		SM 5310C	Total/NA

This Detection Summary does not include radiochemical test results.

Client: AECOM
Job ID: 310-277940-1
Project/Site: Black Hawk Co. SWPPP Sampling

Client Sample ID: SW-4
Lab Sample ID: 310-277940-1
Date Collected: 04/02/24 08:45
Matrix: Water
Date Received: 04/02/24 14:15

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alpha-Terpineol	<3.09		10.6	3.09	ug/L		04/05/24 10:59	04/11/24 18:16	1
Aniline	**7.84**	**J**	10.6	0.372	ug/L		04/05/24 10:59	04/11/24 18:16	1
Benzoic acid	<18.1		106	18.1	ug/L		04/05/24 10:59	04/11/24 18:16	1
Naphthalene	<6.49		10.6	6.49	ug/L		04/05/24 10:59	04/11/24 18:16	1
p-Cresol	<0.745		10.6	0.745	ug/L		04/05/24 10:59	04/11/24 18:16	1
Phenol	<1.17		10.6	1.17	ug/L		04/05/24 10:59	04/11/24 18:16	1
Pyridine	<1.70		10.6	1.70	ug/L		04/05/24 10:59	04/11/24 18:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorophenol (Surr)	*78*		*25 - 110*	*04/05/24 10:59*	*04/11/24 18:16*	*1*
Phenol-d5 (Surr)	*67*		*21 - 110*	*04/05/24 10:59*	*04/11/24 18:16*	*1*
2,4,6-Tribromophenol (Surr)	*125*		*27 - 136*	*04/05/24 10:59*	*04/11/24 18:16*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**19.3**		10.0	4.50	mg/L			04/04/24 17:03	10
Sulfate	**294**		10.0	4.20	mg/L			04/04/24 17:03	10

Method: EPA 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**1.76**		0.100	0.0250	mg/L		04/03/24 09:30	04/04/24 15:51	1
Antimony	<0.0380		0.100	0.0380	mg/L		04/03/24 09:30	04/04/24 15:51	1
Arsenic	<0.0160		0.0800	0.0160	mg/L		04/03/24 09:30	04/04/24 15:51	1
Barium	**0.0555**		0.0100	0.00200	mg/L		04/03/24 09:30	04/04/24 15:51	1
Beryllium	<0.00140		0.0100	0.00140	mg/L		04/03/24 09:30	04/04/24 15:51	1
Cadmium	<0.00390		0.0200	0.00390	mg/L		04/03/24 09:30	04/04/24 15:51	1
Calcium	**111**		1.00	0.330	mg/L		04/03/24 09:30	04/04/24 15:51	1
Chromium	<0.00600		0.0200	0.00600	mg/L		04/03/24 09:30	04/04/24 15:51	1
Copper	**0.00703**	**J**	0.0200	0.00490	mg/L		04/03/24 09:30	04/04/24 15:51	1
Iron	**2.46**		0.500	0.0930	mg/L		04/03/24 09:30	04/04/24 15:51	1
Lead	<0.0240		0.100	0.0240	mg/L		04/03/24 09:30	04/04/24 15:51	1
Magnesium	**24.2**		1.00	0.250	mg/L		04/03/24 09:30	04/04/24 15:51	1
Nickel	<0.0150		0.0500	0.0150	mg/L		04/03/24 09:30	04/04/24 15:51	1
Potassium	**5.57**		2.00	0.880	mg/L		04/03/24 09:30	04/04/24 15:51	1
Selenium	<0.0290		0.100	0.0290	mg/L		04/03/24 09:30	04/04/24 15:51	1
Silver	<0.00910		0.0200	0.00910	mg/L		04/03/24 09:30	04/04/24 15:51	1
Sodium	**12.0**		2.00	1.20	mg/L		04/03/24 09:30	04/05/24 14:59	1
Zinc	<0.0160		0.0400	0.0160	mg/L		04/03/24 09:30	04/04/24 15:51	1

Method: EPA 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Magnesium	**22.4**		1.00	0.250	mg/L			04/04/24 12:39	1

Method: EPA 245.2 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000140		0.000200	0.000140	mg/L		04/05/24 14:06	04/08/24 14:13	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total hardness as CaCO3	**377**		4.12	1.03	mg/L			04/04/24 15:51	1

Client Sample Results

Client: AECOM
Job ID: 310-277940-1
Project/Site: Black Hawk Co. SWPPP Sampling

Client Sample ID: SW-4
Lab Sample ID: 310-277940-1
Date Collected: 04/02/24 08:45
Matrix: Water
Date Received: 04/02/24 14:15

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease) (1664A)	<4.7		5.5	4.7	mg/L		04/05/24 06:00	04/05/24 06:00	1
Turbidity (EPA 180.1)	**17**		10	2.0	NTU			04/02/24 15:30	10
Cyanide, Total (EPA 335.4)	<0.00430		0.0100	0.00430	mg/L		04/03/24 09:59	04/03/24 21:28	1
Ammonia (EPA 350.1)	**0.378**	**J**	0.500	0.220	mg/L		04/04/24 08:32	04/04/24 19:17	1
Nitrate Nitrite as N (EPA 353.2)	**0.366**		0.100	0.0540	mg/L			04/04/24 11:36	1
Total Phosphorus as P (EPA 365.1)	**0.112**		0.100	0.0620	mg/L		04/03/24 08:32	04/03/24 18:19	1
Total Suspended Solids (USGS I-3765-85)	**116**		15.0	5.10	mg/L			04/05/24 14:20	1
Alkalinity, Total (As CaCO3) (SM 2320B)	**86.6**		5.00	2.50	mg/L			04/08/24 12:38	1
Alkalinity, Bicarbonate (As CaCO3) (SM 2320B)	**86.6**		5.00	2.50	mg/L			04/08/24 12:38	1
Phenolphthalein Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			04/08/24 12:38	1
Total Dissolved Solids (SM 2540C)	**542**		50.0	34.0	mg/L			04/04/24 10:51	1
Chemical Oxygen Demand (SM 5220D)	**45.5**		25.0	24.0	mg/L			04/05/24 10:12	5
Total Organic Carbon (SM 5310C)	**16.4**		1.00	0.230	mg/L			04/09/24 20:11	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**7.7**	**HF**	1.0	1.0	SU			04/02/24 17:40	1
Biochemical Oxygen Demand (SM 5210B)	**4.03**	**b *-**	3.00	3.00	mg/L			04/03/24 08:07	1

Client: AECOM
Job ID: 310-277940-1
Project/Site: Black Hawk Co. SWPPP Sampling

Client Sample ID: SW-4
Lab Sample ID: 310-277940-2
Date Collected: 04/02/24 10:45
Matrix: Water
Date Received: 04/02/24 14:15

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alpha-Terpineol	<2.96		10.2	2.96	ug/L		04/05/24 10:59	04/11/24 18:43	1
Aniline	**8.43**	**J**	10.2	0.357	ug/L		04/05/24 10:59	04/11/24 18:43	1
Benzoic acid	<17.3		102	17.3	ug/L		04/05/24 10:59	04/11/24 18:43	1
Naphthalene	<6.22		10.2	6.22	ug/L		04/05/24 10:59	04/11/24 18:43	1
p-Cresol	<0.714		10.2	0.714	ug/L		04/05/24 10:59	04/11/24 18:43	1
Phenol	<1.12		10.2	1.12	ug/L		04/05/24 10:59	04/11/24 18:43	1
Pyridine	<1.63		10.2	1.63	ug/L		04/05/24 10:59	04/11/24 18:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorophenol (Surr)	*66*		*25 - 110*	*04/05/24 10:59*	*04/11/24 18:43*	*1*
Phenol-d5 (Surr)	*57*		*21 - 110*	*04/05/24 10:59*	*04/11/24 18:43*	*1*
2,4,6-Tribromophenol (Surr)	*108*		*27 - 136*	*04/05/24 10:59*	*04/11/24 18:43*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**19.7**		10.0	4.50	mg/L			04/04/24 17:17	10
Sulfate	**297**		10.0	4.20	mg/L			04/04/24 17:17	10

Method: EPA 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**1.67**		0.100	0.0250	mg/L		04/03/24 09:30	04/04/24 15:53	1
Antimony	<0.0380		0.100	0.0380	mg/L		04/03/24 09:30	04/04/24 15:53	1
Arsenic	<0.0160		0.0800	0.0160	mg/L		04/03/24 09:30	04/04/24 15:53	1
Barium	**0.0542**		0.0100	0.00200	mg/L		04/03/24 09:30	04/04/24 15:53	1
Beryllium	<0.00140		0.0100	0.00140	mg/L		04/03/24 09:30	04/04/24 15:53	1
Cadmium	<0.00390		0.0200	0.00390	mg/L		04/03/24 09:30	04/04/24 15:53	1
Calcium	**110**		1.00	0.330	mg/L		04/03/24 09:30	04/04/24 15:53	1
Chromium	<0.00600		0.0200	0.00600	mg/L		04/03/24 09:30	04/04/24 15:53	1
Copper	**0.00643**	**J**	0.0200	0.00490	mg/L		04/03/24 09:30	04/04/24 15:53	1
Iron	**2.29**		0.500	0.0930	mg/L		04/03/24 09:30	04/04/24 15:53	1
Lead	<0.0240		0.100	0.0240	mg/L		04/03/24 09:30	04/04/24 15:53	1
Magnesium	**23.9**		1.00	0.250	mg/L		04/03/24 09:30	04/04/24 15:53	1
Nickel	<0.0150		0.0500	0.0150	mg/L		04/03/24 09:30	04/04/24 15:53	1
Potassium	**5.47**		2.00	0.880	mg/L		04/03/24 09:30	04/04/24 15:53	1
Selenium	<0.0290		0.100	0.0290	mg/L		04/03/24 09:30	04/04/24 15:53	1
Silver	<0.00910		0.0200	0.00910	mg/L		04/03/24 09:30	04/04/24 15:53	1
Sodium	**11.9**		2.00	1.20	mg/L		04/03/24 09:30	04/05/24 15:01	1
Zinc	<0.0160		0.0400	0.0160	mg/L		04/03/24 09:30	04/04/24 15:53	1

Method: EPA 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Magnesium	**22.0**		1.00	0.250	mg/L			04/04/24 12:41	1

Method: EPA 245.2 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000140		0.000200	0.000140	mg/L		04/05/24 14:06	04/08/24 14:15	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total hardness as CaCO3	**373**		4.12	1.03	mg/L			04/04/24 15:53	1

Client: AECOM
Job ID: 310-277940-1
Project/Site: Black Hawk Co. SWPPP Sampling

Client Sample ID: SW-4
Lab Sample ID: 310-277940-2
Date Collected: 04/02/24 10:45
Matrix: Water
Date Received: 04/02/24 14:15

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease) (1664A)	<5.0		5.8	5.0	mg/L		04/05/24 06:00	04/05/24 06:00	1
Turbidity (EPA 180.1)	**95**		10	2.0	NTU			04/02/24 15:31	10
Cyanide, Total (EPA 335.4)	<0.00430		0.0100	0.00430	mg/L		04/03/24 09:59	04/03/24 21:31	1
Ammonia (EPA 350.1)	**0.423**	**J**	0.500	0.220	mg/L		04/04/24 08:32	04/04/24 19:18	1
Nitrate Nitrite as N (EPA 353.2)	**0.421**		0.100	0.0540	mg/L			04/04/24 11:38	1
Total Phosphorus as P (EPA 365.1)	**0.109**		0.100	0.0620	mg/L		04/03/24 08:32	04/03/24 18:19	1
Total Suspended Solids (USGS I-3765-85)	**82.0**		7.50	2.55	mg/L			04/05/24 14:20	1
Alkalinity, Total (As CaCO3) (SM 2320B)	**75.8**		5.00	2.50	mg/L			04/08/24 12:46	1
Alkalinity, Bicarbonate (As CaCO3) (SM 2320B)	**75.8**		5.00	2.50	mg/L			04/08/24 12:46	1
Phenolphthalein Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			04/08/24 12:46	1
Total Dissolved Solids (SM 2540C)	**548**		50.0	34.0	mg/L			04/04/24 10:51	1
Chemical Oxygen Demand (SM 5220D)	**60.4**		25.0	24.0	mg/L			04/05/24 10:12	5
Total Organic Carbon (SM 5310C)	**16.3**		1.00	0.230	mg/L			04/09/24 22:00	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**7.8**	**HF**	1.0	1.0	SU			04/02/24 17:40	1
Biochemical Oxygen Demand (SM 5210B)	**7.59**	**b *-**	3.00	3.00	mg/L			04/03/24 08:12	1

Definitions/Glossary

Client: AECOM
Job ID: 310-277940-1
Project/Site: Black Hawk Co. SWPPP Sampling

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
*-	LCS and/or LCSD is outside acceptance limits, low biased.
b	Result Detected in the Unseeded Control blank (USB).
HF	Parameter with a holding time of 15 minutes. Test performed by laboratory at client's request. Sample was analyzed outside of hold time.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Surrogate Summary

Client: AECOM
Job ID: 310-277940-1
Project/Site: Black Hawk Co. SWPPP Sampling

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
		2FP	PHL	TBP
Lab Sample ID	Client Sample ID	(25-110)	(21-110)	(27-136)
310-277940-1	SW-4	78	67	125
310-277940-2	SW-4	66	57	108
LCS 310-417988/2-A	Lab Control Sample	80	64	130
LCSD 310-417988/3-A	Lab Control Sample Dup	66	54	108
MB 310-417988/1-A	Method Blank	75	59	120

Surrogate Legend

2FP = 2-Fluorophenol (Surr)
PHL = Phenol-d5 (Surr)
TBP = 2,4,6-Tribromophenol (Surr)

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 310-417988/1-A
Matrix: Water
Analysis Batch: 418426

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 417988

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alpha-Terpineol	<2.90		10.0	2.90	ug/L		04/05/24 10:59	04/11/24 13:02	1
Aniline	<0.350		10.0	0.350	ug/L		04/05/24 10:59	04/11/24 13:02	1
Benzoic acid	<17.0		100	17.0	ug/L		04/05/24 10:59	04/11/24 13:02	1
Naphthalene	<6.10		10.0	6.10	ug/L		04/05/24 10:59	04/11/24 13:02	1
p-Cresol	<0.700		10.0	0.700	ug/L		04/05/24 10:59	04/11/24 13:02	1
Phenol	<1.10		10.0	1.10	ug/L		04/05/24 10:59	04/11/24 13:02	1
Pyridine	<1.60		10.0	1.60	ug/L		04/05/24 10:59	04/11/24 13:02	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorophenol (Surr)	*75*		*25 - 110*	*04/05/24 10:59*	*04/11/24 13:02*	*1*
Phenol-d5 (Surr)	*59*		*21 - 110*	*04/05/24 10:59*	*04/11/24 13:02*	*1*
2,4,6-Tribromophenol (Surr)	*120*		*27 - 136*	*04/05/24 10:59*	*04/11/24 13:02*	*1*

Lab Sample ID: LCS 310-417988/2-A
Matrix: Water
Analysis Batch: 418426

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 417988

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aniline	100	94.44		ug/L		94	10 - 140
Naphthalene	100	70.99		ug/L		71	38 - 110
p-Cresol	100	88.82		ug/L		89	46 - 117
Phenol	100	52.81		ug/L		53	29 - 110
Pyridine	200	130.9		ug/L		65	10 - 110

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorophenol (Surr)	*80*		*25 - 110*
Phenol-d5 (Surr)	*64*		*21 - 110*
2,4,6-Tribromophenol (Surr)	*130*		*27 - 136*

Lab Sample ID: LCSD 310-417988/3-A
Matrix: Water
Analysis Batch: 418426

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 417988

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aniline	100	82.40		ug/L		82	10 - 140	14	35
Naphthalene	100	59.81		ug/L		60	38 - 110	17	35
p-Cresol	100	76.83		ug/L		77	46 - 117	14	35
Phenol	100	47.45		ug/L		47	29 - 110	11	35
Pyridine	200	111.3		ug/L		56	10 - 110	16	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorophenol (Surr)	*66*		*25 - 110*
Phenol-d5 (Surr)	*54*		*21 - 110*
2,4,6-Tribromophenol (Surr)	*108*		*27 - 136*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 310-418009/3
Matrix: Water
Analysis Batch: 418009

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.450		1.00	0.450	mg/L			04/04/24 09:21	1
Sulfate	<0.420		1.00	0.420	mg/L			04/04/24 09:21	1

Lab Sample ID: LCS 310-418009/4
Matrix: Water
Analysis Batch: 418009

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	10.0	9.893		mg/L		99	90 - 110
Sulfate	10.0	10.57		mg/L		106	90 - 110

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 310-417630/1-A
Matrix: Water
Analysis Batch: 417965

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 417630

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.0250		0.100	0.0250	mg/L		04/03/24 09:30	04/04/24 14:58	1
Antimony	<0.0380		0.100	0.0380	mg/L		04/03/24 09:30	04/04/24 14:58	1
Arsenic	<0.0160		0.0800	0.0160	mg/L		04/03/24 09:30	04/04/24 14:58	1
Barium	<0.00200		0.0100	0.00200	mg/L		04/03/24 09:30	04/04/24 14:58	1
Beryllium	<0.00140		0.0100	0.00140	mg/L		04/03/24 09:30	04/04/24 14:58	1
Cadmium	<0.00390		0.0200	0.00390	mg/L		04/03/24 09:30	04/04/24 14:58	1
Calcium	<0.330		1.00	0.330	mg/L		04/03/24 09:30	04/04/24 14:58	1
Chromium	<0.00600		0.0200	0.00600	mg/L		04/03/24 09:30	04/04/24 14:58	1
Copper	<0.00490		0.0200	0.00490	mg/L		04/03/24 09:30	04/04/24 14:58	1
Iron	<0.0930		0.500	0.0930	mg/L		04/03/24 09:30	04/04/24 14:58	1
Lead	<0.0240		0.100	0.0240	mg/L		04/03/24 09:30	04/04/24 14:58	1
Magnesium	<0.250		1.00	0.250	mg/L		04/03/24 09:30	04/04/24 14:58	1
Nickel	<0.0150		0.0500	0.0150	mg/L		04/03/24 09:30	04/04/24 14:58	1
Potassium	<0.880		2.00	0.880	mg/L		04/03/24 09:30	04/04/24 14:58	1
Selenium	<0.0290		0.100	0.0290	mg/L		04/03/24 09:30	04/04/24 14:58	1
Silver	<0.00910		0.0200	0.00910	mg/L		04/03/24 09:30	04/04/24 14:58	1
Zinc	<0.0160		0.0400	0.0160	mg/L		04/03/24 09:30	04/04/24 14:58	1

Lab Sample ID: MB 310-417630/1-A
Matrix: Water
Analysis Batch: 418023

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 417630

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	<1.20		2.00	1.20	mg/L		04/03/24 09:30	04/05/24 14:28	1

Lab Sample ID: LCS 310-417630/2-A
Matrix: Water
Analysis Batch: 417965

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 417630

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	2.00	2.087		mg/L		104	85 - 115
Antimony	2.00	1.942		mg/L		97	85 - 115

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: LCS 310-417630/2-A
Matrix: Water
Analysis Batch: 417965

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 417630

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	2.00	1.973		mg/L		99	85 - 115
Barium	1.00	0.9897		mg/L		99	85 - 115
Beryllium	1.00	1.006		mg/L		101	85 - 115
Cadmium	1.00	0.9356		mg/L		94	85 - 115
Calcium	20.0	18.58		mg/L		93	85 - 115
Chromium	1.00	0.9439		mg/L		94	85 - 115
Copper	2.00	1.916		mg/L		96	85 - 115
Iron	2.00	1.949		mg/L		97	85 - 115
Lead	2.00	1.847		mg/L		92	85 - 115
Magnesium	20.0	19.19		mg/L		96	85 - 115
Nickel	2.00	1.848		mg/L		92	85 - 115
Potassium	20.0	22.23		mg/L		111	85 - 115
Selenium	4.00	3.795		mg/L		95	85 - 115
Silver	0.100	0.09870		mg/L		99	85 - 115
Zinc	2.00	1.878		mg/L		94	85 - 115

Lab Sample ID: LCS 310-417630/2-A
Matrix: Water
Analysis Batch: 418023

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 417630

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sodium	20.0	19.50		mg/L		98	85 - 115

Lab Sample ID: MB 310-417774/1-A
Matrix: Water
Analysis Batch: 417964

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Magnesium	<0.250		1.00	0.250	mg/L			04/04/24 12:15	1

Lab Sample ID: LCS 310-417774/2-A
Matrix: Water
Analysis Batch: 417964

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Magnesium	20.0	17.28		mg/L		86	85 - 115

Method: 245.2 - Mercury (CVAA)

Lab Sample ID: MB 310-418012/1-A
Matrix: Water
Analysis Batch: 418170

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 418012

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000140		0.000200	0.000140	mg/L		04/05/24 14:06	04/08/24 13:43	1

Method: 245.2 - Mercury (CVAA) (Continued)

Lab Sample ID: LCS 310-418012/2-A
Matrix: Water
Analysis Batch: 418170

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 418012

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00167	0.001780		mg/L		107	85 - 115

Method: 1664A - HEM and SGT-HEM

Lab Sample ID: MB 310-417844/1-A
Matrix: Water
Analysis Batch: 417993

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 417844

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease)	<4.3		5.0	4.3	mg/L		04/05/24 06:00	04/05/24 06:00	1

Lab Sample ID: LCS 310-417844/2-A
Matrix: Water
Analysis Batch: 417993

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 417844

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
HEM (Oil & Grease)	40.0	41.10		mg/L		103	78 - 114

Method: 180.1 - Turbidity, Nephelometric

Lab Sample ID: MB 310-417624/5
Matrix: Water
Analysis Batch: 417624

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Turbidity	<0.20		1.0	0.20	NTU			04/02/24 15:19	1

Lab Sample ID: LCS 310-417624/6
Matrix: Water
Analysis Batch: 417624

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Turbidity	20.0	20		NTU		102	90 - 110

Method: 335.4 - Cyanide, Total

Lab Sample ID: MB 310-417720/1-A
Matrix: Water
Analysis Batch: 417784

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 417720

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	<0.00430		0.0100	0.00430	mg/L		04/03/24 09:59	04/03/24 21:20	1

Lab Sample ID: LCS 310-417720/2-A
Matrix: Water
Analysis Batch: 417784

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 417720

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	0.200	0.1939		mg/L		97	90 - 110

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 310-417816/1-A
Matrix: Water
Analysis Batch: 417912

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 417816

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	<0.220		0.500	0.220	mg/L		04/04/24 08:32	04/04/24 19:06	1

Lab Sample ID: LCS 310-417816/2-A
Matrix: Water
Analysis Batch: 417912

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 417816

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Ammonia	4.00	3.700		mg/L		92	90 - 110

Method: 353.2 - Nitrogen, Nitrate-Nitrite

Lab Sample ID: MB 310-417845/48
Matrix: Water
Analysis Batch: 417845

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	<0.0540		0.100	0.0540	mg/L			04/04/24 11:10	1

Lab Sample ID: LCS 310-417845/49
Matrix: Water
Analysis Batch: 417845

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate Nitrite as N	20.7	20.99		mg/L		101	90 - 110

Method: 365.1 - Phosphorus, Total

Lab Sample ID: MB 310-417672/1-A
Matrix: Water
Analysis Batch: 417782

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 417672

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Phosphorus as P	<0.0620		0.100	0.0620	mg/L		04/03/24 08:32	04/03/24 18:15	1

Lab Sample ID: LCS 310-417672/2-A
Matrix: Water
Analysis Batch: 417782

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 417672

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Phosphorus as P	1.00	0.9349		mg/L		93	90 - 110

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: MB 310-418015/1
Matrix: Water
Analysis Batch: 418015

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<1.70		5.00	1.70	mg/L			04/05/24 14:20	1

Method: I-3765-85 - Residue, Non-filterable (TSS) (Continued)

Lab Sample ID: LCS 310-418015/2
Matrix: Water
Analysis Batch: 418015

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	108.0		mg/L		108	75 - 116

Method: SM 2320B - Alkalinity

Lab Sample ID: LCS 310-418207/2
Matrix: Water
Analysis Batch: 418207

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Alkalinity, Total (As CaCO3)	1000	937.7		mg/L		94	90 - 110

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 310-417855/1
Matrix: Water
Analysis Batch: 417855

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<34.0		50.0	34.0	mg/L			04/04/24 10:51	1

Lab Sample ID: LCS 310-417855/2
Matrix: Water
Analysis Batch: 417855

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	1000	946.0		mg/L		95	90 - 110

Method: SM 4500 H+ B - pH

Lab Sample ID: LCS 310-417639/1
Matrix: Water
Analysis Batch: 417639

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
pH	7.00	7.0		SU		99	98 - 102

Method: SM 5210B - BOD, 5-Day

Lab Sample ID: USB 310-417646/1
Matrix: Water
Analysis Batch: 417646

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	USB Result	USB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand	<3.00		3.00	3.00	mg/L			04/03/24 07:06	1

Lab Sample ID: LCS 310-417646/2
Matrix: Water
Analysis Batch: 417646

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Biochemical Oxygen Demand	198	152.0	*-	mg/L		77	85 - 115

QC Sample Results

Client: AECOM
Project/Site: Black Hawk Co. SWPPP Sampling

Job ID: 310-277940-1

Method: SM 5220D - COD

Lab Sample ID: MB 310-417970/5
Matrix: Water
Analysis Batch: 417970

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	<4.80		5.00	4.80	mg/L			04/05/24 10:12	1

Lab Sample ID: LCS 310-417970/3
Matrix: Water
Analysis Batch: 417970

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chemical Oxygen Demand	125	122.2		mg/L		97	85 - 115

Method: SM 5310C - TOC

Lab Sample ID: MB 310-418510/14
Matrix: Water
Analysis Batch: 418510

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	<0.230		1.00	0.230	mg/L			04/09/24 14:47	1

Lab Sample ID: LCS 310-418510/15
Matrix: Water
Analysis Batch: 418510

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	9.99	10.89		mg/L		109	85 - 115

QC Association Summary

Client: AECOM
Job ID: 310-277940-1
Project/Site: Black Hawk Co. SWPPP Sampling

GC/MS Semi VOA

Prep Batch: 417988

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277940-1	SW-4	Total/NA	Water	3510C	
310-277940-2	SW-4	Total/NA	Water	3510C	
MB 310-417988/1-A	Method Blank	Total/NA	Water	3510C	
LCS 310-417988/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 310-417988/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 418426

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277940-1	SW-4	Total/NA	Water	8270E	417988
310-277940-2	SW-4	Total/NA	Water	8270E	417988
MB 310-417988/1-A	Method Blank	Total/NA	Water	8270E	417988
LCS 310-417988/2-A	Lab Control Sample	Total/NA	Water	8270E	417988
LCSD 310-417988/3-A	Lab Control Sample Dup	Total/NA	Water	8270E	417988

HPLC/IC

Analysis Batch: 418009

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277940-1	SW-4	Total/NA	Water	300.0	
310-277940-2	SW-4	Total/NA	Water	300.0	
MB 310-418009/3	Method Blank	Total/NA	Water	300.0	
LCS 310-418009/4	Lab Control Sample	Total/NA	Water	300.0	

Metals

Prep Batch: 417630

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277940-1	SW-4	Total/NA	Water	200.7	
310-277940-2	SW-4	Total/NA	Water	200.7	
MB 310-417630/1-A	Method Blank	Total/NA	Water	200.7	
LCS 310-417630/2-A	Lab Control Sample	Total/NA	Water	200.7	

Filtration Batch: 417774

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277940-1	SW-4	Dissolved	Water	Filtration	
310-277940-2	SW-4	Dissolved	Water	Filtration	
MB 310-417774/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 310-417774/2-A	Lab Control Sample	Dissolved	Water	Filtration	

Analysis Batch: 417964

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277940-1	SW-4	Dissolved	Water	200.7 Rev 4.4	417774
310-277940-2	SW-4	Dissolved	Water	200.7 Rev 4.4	417774
MB 310-417774/1-A	Method Blank	Dissolved	Water	200.7 Rev 4.4	417774
LCS 310-417774/2-A	Lab Control Sample	Dissolved	Water	200.7 Rev 4.4	417774

Analysis Batch: 417965

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277940-1	SW-4	Total/NA	Water	200.7 Rev 4.4	417630
310-277940-2	SW-4	Total/NA	Water	200.7 Rev 4.4	417630
MB 310-417630/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	417630
LCS 310-417630/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	417630

QC Association Summary

Client: AECOM
Job ID: 310-277940-1
Project/Site: Black Hawk Co. SWPPP Sampling

Metals

Prep Batch: 418012

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277940-1	SW-4	Total/NA	Water	245.1	
310-277940-2	SW-4	Total/NA	Water	245.1	
MB 310-418012/1-A	Method Blank	Total/NA	Water	245.1	
LCS 310-418012/2-A	Lab Control Sample	Total/NA	Water	245.1	

Analysis Batch: 418023

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277940-1	SW-4	Total/NA	Water	200.7 Rev 4.4	417630
310-277940-2	SW-4	Total/NA	Water	200.7 Rev 4.4	417630
MB 310-417630/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	417630
LCS 310-417630/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	417630

Analysis Batch: 418101

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277940-1	SW-4	Total/NA	Water	SM 2340B	
310-277940-2	SW-4	Total/NA	Water	SM 2340B	

Analysis Batch: 418170

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277940-1	SW-4	Total/NA	Water	245.2	418012
310-277940-2	SW-4	Total/NA	Water	245.2	418012
MB 310-418012/1-A	Method Blank	Total/NA	Water	245.2	418012
LCS 310-418012/2-A	Lab Control Sample	Total/NA	Water	245.2	418012

General Chemistry

Analysis Batch: 417624

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277940-1	SW-4	Total/NA	Water	180.1	
310-277940-2	SW-4	Total/NA	Water	180.1	
MB 310-417624/5	Method Blank	Total/NA	Water	180.1	
LCS 310-417624/6	Lab Control Sample	Total/NA	Water	180.1	

Analysis Batch: 417639

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277940-1	SW-4	Total/NA	Water	SM 4500 H+ B	
310-277940-2	SW-4	Total/NA	Water	SM 4500 H+ B	
LCS 310-417639/1	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	

Analysis Batch: 417646

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277940-1	SW-4	Total/NA	Water	SM 5210B	
310-277940-2	SW-4	Total/NA	Water	SM 5210B	
USB 310-417646/1	Method Blank	Total/NA	Water	SM 5210B	
LCS 310-417646/2	Lab Control Sample	Total/NA	Water	SM 5210B	

Prep Batch: 417672

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277940-1	SW-4	Total/NA	Water	365.1	
310-277940-2	SW-4	Total/NA	Water	365.1	
MB 310-417672/1-A	Method Blank	Total/NA	Water	365.1	

General Chemistry (Continued)

Prep Batch: 417672 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 310-417672/2-A	Lab Control Sample	Total/NA	Water	365.1	

Prep Batch: 417720

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277940-1	SW-4	Total/NA	Water	Distill/CN	
310-277940-2	SW-4	Total/NA	Water	Distill/CN	
MB 310-417720/1-A	Method Blank	Total/NA	Water	Distill/CN	
LCS 310-417720/2-A	Lab Control Sample	Total/NA	Water	Distill/CN	

Analysis Batch: 417782

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277940-1	SW-4	Total/NA	Water	365.1	417672
310-277940-2	SW-4	Total/NA	Water	365.1	417672
MB 310-417672/1-A	Method Blank	Total/NA	Water	365.1	417672
LCS 310-417672/2-A	Lab Control Sample	Total/NA	Water	365.1	417672

Analysis Batch: 417784

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277940-1	SW-4	Total/NA	Water	335.4	417720
310-277940-2	SW-4	Total/NA	Water	335.4	417720
MB 310-417720/1-A	Method Blank	Total/NA	Water	335.4	417720
LCS 310-417720/2-A	Lab Control Sample	Total/NA	Water	335.4	417720

Prep Batch: 417816

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277940-1	SW-4	Total/NA	Water	Distill/Ammonia	
310-277940-2	SW-4	Total/NA	Water	Distill/Ammonia	
MB 310-417816/1-A	Method Blank	Total/NA	Water	Distill/Ammonia	
LCS 310-417816/2-A	Lab Control Sample	Total/NA	Water	Distill/Ammonia	

Prep Batch: 417844

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277940-1	SW-4	Total/NA	Water	1664A	
310-277940-2	SW-4	Total/NA	Water	1664A	
MB 310-417844/1-A	Method Blank	Total/NA	Water	1664A	
LCS 310-417844/2-A	Lab Control Sample	Total/NA	Water	1664A	

Analysis Batch: 417845

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277940-1	SW-4	Total/NA	Water	353.2	
310-277940-2	SW-4	Total/NA	Water	353.2	
MB 310-417845/48	Method Blank	Total/NA	Water	353.2	
LCS 310-417845/49	Lab Control Sample	Total/NA	Water	353.2	

Analysis Batch: 417855

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277940-1	SW-4	Total/NA	Water	SM 2540C	
310-277940-2	SW-4	Total/NA	Water	SM 2540C	
MB 310-417855/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-417855/2	Lab Control Sample	Total/NA	Water	SM 2540C	

QC Association Summary

Client: AECOM
Job ID: 310-277940-1
Project/Site: Black Hawk Co. SWPPP Sampling

General Chemistry

Analysis Batch: 417912

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277940-1	SW-4	Total/NA	Water	350.1	417816
310-277940-2	SW-4	Total/NA	Water	350.1	417816
MB 310-417816/1-A	Method Blank	Total/NA	Water	350.1	417816
LCS 310-417816/2-A	Lab Control Sample	Total/NA	Water	350.1	417816

Analysis Batch: 417970

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277940-1	SW-4	Total/NA	Water	SM 5220D	
310-277940-2	SW-4	Total/NA	Water	SM 5220D	
MB 310-417970/5	Method Blank	Total/NA	Water	SM 5220D	
LCS 310-417970/3	Lab Control Sample	Total/NA	Water	SM 5220D	

Analysis Batch: 417993

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277940-1	SW-4	Total/NA	Water	1664A	417844
310-277940-2	SW-4	Total/NA	Water	1664A	417844
MB 310-417844/1-A	Method Blank	Total/NA	Water	1664A	417844
LCS 310-417844/2-A	Lab Control Sample	Total/NA	Water	1664A	417844

Analysis Batch: 418015

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277940-1	SW-4	Total/NA	Water	I-3765-85	
310-277940-2	SW-4	Total/NA	Water	I-3765-85	
MB 310-418015/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-418015/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Analysis Batch: 418207

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277940-1	SW-4	Total/NA	Water	SM 2320B	
310-277940-2	SW-4	Total/NA	Water	SM 2320B	
LCS 310-418207/2	Lab Control Sample	Total/NA	Water	SM 2320B	

Analysis Batch: 418510

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-277940-1	SW-4	Total/NA	Water	SM 5310C	
310-277940-2	SW-4	Total/NA	Water	SM 5310C	
MB 310-418510/14	Method Blank	Total/NA	Water	SM 5310C	
LCS 310-418510/15	Lab Control Sample	Total/NA	Water	SM 5310C	

Lab Chronicle

Client: AECOM
Job ID: 310-277940-1
Project/Site: Black Hawk Co. SWPPP Sampling

Client Sample ID: SW-4
Lab Sample ID: 310-277940-1
Date Collected: 04/02/24 08:45
Matrix: Water
Date Received: 04/02/24 14:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3510C			417988	JT8P	EET CF	04/05/24 10:59
Total/NA	Analysis	8270E		1	418426	L0FS	EET CF	04/11/24 18:16
Total/NA	Analysis	300.0		10	418009	QTZ5	EET CF	04/04/24 17:03
Dissolved	Filtration	Filtration			417774	QTZ5	EET CF	04/03/24 16:33
Dissolved	Analysis	200.7 Rev 4.4		1	417964	ZRI4	EET CF	04/04/24 12:39
Total/NA	Prep	200.7			417630	QTZ5	EET CF	04/03/24 09:30
Total/NA	Analysis	200.7 Rev 4.4		1	417965	ZRI4	EET CF	04/04/24 15:51
Total/NA	Prep	200.7			417630	QTZ5	EET CF	04/03/24 09:30
Total/NA	Analysis	200.7 Rev 4.4		1	418023	ZRI4	EET CF	04/05/24 14:59
Total/NA	Prep	245.1			418012	A6US	EET CF	04/05/24 14:06
Total/NA	Analysis	245.2		1	418170	DHM5	EET CF	04/08/24 14:13
Total/NA	Analysis	SM 2340B		1	418101	HE7K	EET CF	04/04/24 15:51
Total/NA	Prep	1664A			417844	DGU1	EET CF	04/05/24 06:00
Total/NA	Analysis	1664A		1	417993	DGU1	EET CF	04/05/24 06:00
Total/NA	Analysis	180.1		10	417624	QTZ5	EET CF	04/02/24 15:30
Total/NA	Prep	Distill/CN			417720	WZC8	EET CF	04/03/24 09:59
Total/NA	Analysis	335.4		1	417784	ZJX4	EET CF	04/03/24 21:28
Total/NA	Prep	Distill/Ammonia			417816	MQ8M	EET CF	04/04/24 08:32
Total/NA	Analysis	350.1		1	417912	ZJX4	EET CF	04/04/24 19:17
Total/NA	Analysis	353.2		1	417845	HE7K	EET CF	04/04/24 11:36
Total/NA	Prep	365.1			417672	MAQ3	EET CF	04/03/24 08:32
Total/NA	Analysis	365.1		1	417782	ZJX4	EET CF	04/03/24 18:19
Total/NA	Analysis	I-3765-85		1	418015	HE7K	EET CF	04/05/24 14:20
Total/NA	Analysis	SM 2320B		1	418207	MAQ3	EET CF	04/08/24 12:38
Total/NA	Analysis	SM 2540C		1	417855	DGU1	EET CF	04/04/24 10:51
Total/NA	Analysis	SM 4500 H+ B		1	417639	A3GU	EET CF	04/02/24 17:40
Total/NA	Analysis	SM 5210B		1	417646	W9YR	EET CF	04/03/24 08:07
Total/NA	Analysis	SM 5220D		5	417970	D7CP	EET CF	04/05/24 10:12
Total/NA	Analysis	SM 5310C		1	418510	DGU1	EET CF	04/09/24 20:11

Client Sample ID: SW-4
Lab Sample ID: 310-277940-2
Date Collected: 04/02/24 10:45
Matrix: Water
Date Received: 04/02/24 14:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3510C			417988	JT8P	EET CF	04/05/24 10:59
Total/NA	Analysis	8270E		1	418426	L0FS	EET CF	04/11/24 18:43
Total/NA	Analysis	300.0		10	418009	QTZ5	EET CF	04/04/24 17:17
Dissolved	Filtration	Filtration			417774	QTZ5	EET CF	04/03/24 16:33
Dissolved	Analysis	200.7 Rev 4.4		1	417964	ZRI4	EET CF	04/04/24 12:41
Total/NA	Prep	200.7			417630	QTZ5	EET CF	04/03/24 09:30
Total/NA	Analysis	200.7 Rev 4.4		1	417965	ZRI4	EET CF	04/04/24 15:53

Lab Chronicle

Client: AECOM
Job ID: 310-277940-1
Project/Site: Black Hawk Co. SWPPP Sampling

Client Sample ID: SW-4
Lab Sample ID: 310-277940-2

Date Collected: 04/02/24 10:45
Matrix: Water
Date Received: 04/02/24 14:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	200.7			417630	QTZ5	EET CF	04/03/24 09:30
Total/NA	Analysis	200.7 Rev 4.4		1	418023	ZRI4	EET CF	04/05/24 15:01
Total/NA	Prep	245.1			418012	A6US	EET CF	04/05/24 14:06
Total/NA	Analysis	245.2		1	418170	DHM5	EET CF	04/08/24 14:15
Total/NA	Analysis	SM 2340B		1	418101	HE7K	EET CF	04/04/24 15:53
Total/NA	Prep	1664A			417844	DGU1	EET CF	04/05/24 06:00
Total/NA	Analysis	1664A		1	417993	DGU1	EET CF	04/05/24 06:00
Total/NA	Analysis	180.1		10	417624	QTZ5	EET CF	04/02/24 15:31
Total/NA	Prep	Distill/CN			417720	WZC8	EET CF	04/03/24 09:59
Total/NA	Analysis	335.4		1	417784	ZJX4	EET CF	04/03/24 21:31
Total/NA	Prep	Distill/Ammonia			417816	MQ8M	EET CF	04/04/24 08:32
Total/NA	Analysis	350.1		1	417912	ZJX4	EET CF	04/04/24 19:18
Total/NA	Analysis	353.2		1	417845	HE7K	EET CF	04/04/24 11:38
Total/NA	Prep	365.1			417672	MAQ3	EET CF	04/03/24 08:32
Total/NA	Analysis	365.1		1	417782	ZJX4	EET CF	04/03/24 18:19
Total/NA	Analysis	I-3765-85		1	418015	HE7K	EET CF	04/05/24 14:20
Total/NA	Analysis	SM 2320B		1	418207	MAQ3	EET CF	04/08/24 12:46
Total/NA	Analysis	SM 2540C		1	417855	DGU1	EET CF	04/04/24 10:51
Total/NA	Analysis	SM 4500 H+ B		1	417639	A3GU	EET CF	04/02/24 17:40
Total/NA	Analysis	SM 5210B		1	417646	W9YR	EET CF	04/03/24 08:12
Total/NA	Analysis	SM 5220D		5	417970	D7CP	EET CF	04/05/24 10:12
Total/NA	Analysis	SM 5310C		1	418510	DGU1	EET CF	04/09/24 22:00

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Accreditation/Certification Summary

Client: AECOM
Job ID: 310-277940-1
Project/Site: Black Hawk Co. SWPPP Sampling

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8270E	3510C	Water	Alpha-Terpineol
8270E	3510C	Water	Aniline
8270E	3510C	Water	Benzoic acid
8270E	3510C	Water	Pyridine

Method Summary

Client: AECOM
Job ID: 310-277940-1
Project/Site: Black Hawk Co. SWPPP Sampling

Method	Method Description	Protocol	Laboratory
8270E	Semivolatile Organic Compounds (GC/MS)	SW846	EET CF
300.0	Anions, Ion Chromatography	EPA	EET CF
200.7 Rev 4.4	Metals (ICP)	EPA	EET CF
245.2	Mercury (CVAA)	EPA	EET CF
SM 2340B	Total Hardness (as CaCO3) by calculation	SM	EET CF
1664A	HEM and SGT-HEM	1664A	EET CF
180.1	Turbidity, Nephelometric	EPA	EET CF
335.4	Cyanide, Total	EPA	EET CF
350.1	Nitrogen, Ammonia	EPA	EET CF
353.2	Nitrogen, Nitrate-Nitrite	EPA	EET CF
365.1	Phosphorus, Total	EPA	EET CF
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
SM 2320B	Alkalinity	SM	EET CF
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CF
SM 4500 H+ B	pH	SM	EET CF
SM 5210B	BOD, 5-Day	SM	EET CF
SM 5220D	COD	SM	EET CF
SM 5310C	TOC	SM	EET CF
1664A	HEM and SGT-HEM (Aqueous)	1664A	EET CF
200.7	Preparation, Total Metals	EPA	EET CF
245.1	Preparation, Mercury	EPA	EET CF
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET CF
365.1	Sample Digestion for Total Phosphorus	MCAWW	EET CF
Distill/Ammonia	Distillation, Ammonia	None	EET CF
Distill/CN	Distillation, Cyanide	None	EET CF
Filtration	Sample Filtration	None	EET CF

Protocol References:

1664A = EPA-821-98-002
EPA = US Environmental Protection Agency
MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.
None = None
SM = "Standard Methods For The Examination Of Water And Wastewater"
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.
USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

eurofins | Environment Testing America

310-277940 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: AECOM

City/State: CITY | STATE IA | Project:

Receipt Information

Date/Time Received: DATE 4/2/24 | TIME 1415 | Received By:

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ Lab Field Services ☒ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler?	☒ Yes	☐ No	*If yes:* Cooler ID:
Multiple Coolers?	☒ Yes	☒ No	*If yes:* Cooler # 1 of 2
Cooler Custody Seals Present?	☐ Yes	☒ No	*If yes:* Cooler custody seals intact? ☐ Yes ☐ No
Sample Custody Seals Present?	☐ Yes	☒ No	*If yes:* Sample custody seals intact? ☐ Yes ☐ No
Trip Blank Present?	☐ Yes	☒ No	*If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: T | Correction Factor (°C): +0.0

• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 3.9 | Corrected Temp (°C): 3.9

• Sample Container Temperature

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

eurofins | Environment Testing America

Place COC scanning label here

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: AECOM

City/State: CITY | STATE TA | Project:

Receipt Information

Date/Time Received: DATE 4/2/24 | TIME 1415 | Received By:

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☑ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☑ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☐ Yes ☒ No *If yes:* Cooler # 2 of 2

Cooler Custody Seals Present? ☐ Yes ☒ No *If yes:* Cooler custody seals intact? ☐ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☒ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☒ Yes ☐ No *If yes:* Which VOA samples are in cooler? ↓

HCL Trips

Temperature Record

Coolant: ☑ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: T | Correction Factor (°C): +0.0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 3.9 | Corrected Temp (°C): 3.9

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE: If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

Eurofins TestAmerica, Cedar Falls
3019 Venture Way

Cedar Falls, IA 50613
phone 319 277.2401 fax 319 277 2425

Chain of Custody Record

eurofins

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other Iowa DNR

Eurofins Environment T

Client Contact	Project Manager: Christopher Oelkers	Site Contact: John Foster	Date: 4-2-24	COC No
AECOM	Email Christopher Oelkers@aecom.com	Lab Contact: Tayler Sanderson	Carrier:	4 of 4 C
501 Sycamore St., Suite 222	Tel/Fax: (319)232-6531/(319)232-0271			Sampler
Waterloo, IA 50703	Analysis Turnaround Time			For Lab Use Only:
(319)232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS			Walk-in Client:
(319)232-0271 FAX	TAT if different from Below ____			Lab Sampling
Project Name Black Hawk Co SWPPP Sampling	☑ 2 weeks			
Site Black Hawk County Landfill	☐ 1 week			Job / SDG No
P O #	☐ 2 days			
	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	Total Metals (Al, Sb, Ar, Ba, Be, Ca, Cr, Cu, Fe, Pb, Hg, Mg, Ni, Se, Ag, Na, Zn)	NO2 + NO3, Ammonia, COD	Cl, SO4, TDS, TSS, Total P	Alkalinity, Total Hardness, Bicarbonate	Lab filter Mg	TOC	Cyanide	Oil & Grease	BOD	pH, Turbidity	Total Ca, K	a-Terpineol, Aniline, Benzoic Acid	Naphthalene, p-Cresol, Phenol	Pyridine	Sample Specific
SW-4	4-2-24	0845	G	GW	13	N		X	X	X	X	X	X	X	X	X	X	X	X	X	X	
SW-4	4-2-24	1045	C	GW	13	N		X	X	X	X	X	X	X	X	X	X	X	X	X	X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for ____ Months

Special Instructions/QC Requirements & Comments: Table 10-1 attached list of parameters required for SWPPP analyses

Field Staff guage 0.55'

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No		Cooler Temp (°C) Obs'd ____ Corr'd ____ Therm ID No ____		
Relinquished by: Ben Porter	Company: Aecom	Date/Time: 4-2-24	Received by: MC	Company:	Date/Time: 4-2-24 1415
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

Form No CA-C-WI-002, Rev. 4.23, da

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-277940-1

Login Number: 277940
List Number: 1
Creator: Costello, Mackenzie K

List Source: Eurofins Cedar Falls

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Quantitation Limit Exceptions Summary

Client: AECOM
Job ID: 310-277940-1
Project/Site: Black Hawk Co. SWPPP Sampling

The requested project specific reporting limits listed below were less than laboratory standard quantitation limits (PQL) but greater than or equal to the laboratory method detection limits (MDL). It must be noted that results reported below lab standard quantitation limits may result in false positive/false negative values and less accurate quantitation. Routine laboratory procedures do not indicate corrective action for detections below the laboratory's PQL.

Method	Analyte	Matrix	Prep Type	Unit	Client RL	Lab PQL
SM 2340B	Total hardness as CaCO3	Water	Total/NA	mg/L	1.00	6.6

Appendix G – Monitoring Well Inspection Report

AECOM
501 Sycamore Street
Waterloo, IA 50703
aecom.com

Project name:
Black Hawk Co.

Project ref:
60722882.16

To:
John Foster

From:
R. Henning

CC:
Chris Oelkers, PE

Date:
April 5, 2024

Memo

Subject: Monitoring Well Maintenance

Monitoring wells and surface water staff gauges were inspected from March 18 – 19, 2024. Several monitoring wells need to be repaired. Other issues include degradation of PVC well top caps which were added to many of the older wells. Several EPA monitoring wells have been identified for abandonment. The well abandonments depend on approval from EPA as part of the 10-year permit renewal.

Wells which need immediate attention are:

- OW-117B protective casing needs to be raised to close cover.
- OW-205B needs bollards installed around well. This area has become a stockpile area for old pipe and well has been damaged since it is not visible.
- P-402C protective casing has slumped into the casing and needs to be raised to close cover.
- P-113C concrete pad is cracked in half. Old pad should be removed, and pad replaced.

Wells to be abandoned, pending EPA approval, include:

- OW-102B
- P-102A
- OW-207B
- P-207A
- OW-208B
- P-208A

Many of the older monitoring wells have PVC slipcover with screw caps. This is a remnant from when wells had dedicated bailers to groundwater sampling. Some of these slipcover caps have cracked and have become loose. We recommend replacing all PVC slipcover caps with PVC J-Plug caps. There are 33 monitoring wells which would require replacement. Once replaced, the well would need to be resurveyed for top of casing elevation (TOC).

Many of the older monitoring wells have no sand inside the protective casing between the well riser and the protective casing. The sand aids in reducing insect nests inside the protective casing. Sand would need to be added to 32 monitoring wells and weep holes drilled near ground.

We can contact Terracon to obtain a cost estimate for all the maintenance work. Schedule for maintenance completion would be in Fall 2024 after Black Hawk has received approval for well abandonments.

Table A-1
Black Hawk Co. LF
IDNR/RCRA Recommended Well Maintenance
March 2024

Well	Recommended Well Maintenance	J-Plug	Sand	Weep	Paint	Labels	Nests	Resurvey	Notes
OW-101B	Grass needs to be cut back around the concrete to expose concrete pad; protective casing rusted, can be sanded and re-painted; PVC well top should be replaced; replace using a 2-in PVC Locking compression J-plug; resurvey well TOC after removing old cap; well needs new labels as the old label zero (0) is not legible.	Add	N	N	Add	Add	Y	Y	
P-101A	Well in good condition	N	N	N	N	Add	N	N	
P-101C	Well in good condition	N	N	N	N	Add	N	N	
OW-102B	Grass needs to be cut back to expose edge of concrete pad and clear path to well; protective casing rusted, can be sanded and re-painted; well needs new labels as the old label "B" is not legible.	N	N	N	Add	Add	N	N	Schedule for well abandonment in 2024; protective casing degraded
P-102A	Grass needs to be cut back to expose concrete pad and clear path to well; protective casing rusted, can be sanded and re-painted; well needs new labels.	N	N	N	Add	Add	N	N	Schedule for well abandonment in 2024; protective casing degraded
P-102C	Grass needs to be cut back to expose concrete pad; clear grass and sediment from well pad; improve drainage around pad; protective casing rusted, can be sanded and re-painted; PVC well top should be replaced; replace using a 2-in. PVC Locking compression J-plug; resurvey well TOC after removing old cap; there is no sand between well riser and protective casing; check weep hole.	Add	Add	Add	Add	N	N	Y	
OW-102D	Grass needs to be cut back around concrete to expose concrete pad; clear grass and sediment from well pad; protective casing rusted, can be sanded and re-painted; PVC well top should be replaced; replace using a 2-in. PVC locking compression J-plug; resurvey well TOC after removing old cap; well needs new labels as the old label zero (0) is not readable; improve drainage around pad.	Add	N	N	Add	Add	N	Y	cover is loose
P-102E	Grass needs to be cut back to expose concrete pad; clear grass and sediment from well pad; protective casing rusted, can be sanded and re-painted; PVC well top should be replaced; replace using a 2-in. PVC locking compression J-plug; resurvey well TOC after removing old cap; well needs new labels as the old label zero (0) and "E" are not legible; remove spiders nests from inside well casing.	Add	N	N	Add	Add	N	Y	
OW-103B	Grass needs to be cut back to expose concrete pad; clear sediment and grass from well pad; clear saplings; protective casing rusted, can be sanded and re-painted; labels; PVC well top should be replaced; replace using a 2-in. PVC Locking compression J-plug; resurvey well TOC after removing old cap	Add	N	N	Add	Add	Y	Y	
P-103A	grass needs to be cut back to expose concrete pad and clear sediment from well pad; protective casing rusted, replace; labels; sand needed inside protective casing; check weep hole.	Add	Add	Add	N	Add	N	Y	replace protective casing
P-103C	Grass needs to be cut back to expose concrete pad and clear sediment from well pad; labeling of well needs to be updated as no labels are legible; protective casing is rusted; replace PVC well cap with J-plug; resurvey	Add	N	N	Add	Add	N	Y	
OW-104B	Grass needs to be cut back with edger to expose edges of concrete pad; clear sediment and grass from well pad; sand needed inside protective casing between well riser and protective casing; check weep hole; concrete pad is cracked; labels.	N	Add	Add	N	Add	N	N	
P-104A	Grass needs to be cut back with edger to expose edges of concrete pad;	N	N	N	N	N	N	N	
P-104C	Well needs new labels as the old label C is not legible; sand is needed between protective casing and well riser; check weep hole; PVC well top should be replaced; replace using a 2-in. PVC Locking compression J-plug; resurvey well TOC after removing old cap	Add	Add	Add	N	Add	N	Y	
OW-105B	Grass needs to be cut back with edger to expose edges of concrete pad; Sand needs to be put in between protective casing and well casing space inside protective casing; clean out spiders nests.	N	Add	Add	N	N	Y	N	
P-105A	Sand needs to be put in between protective casing and well casing space inside protective casing; clean out spiders nests.	N	Add	Add	N	N	Y	N	
P-105C	Grass needs to be cut back with edger to expose edges of concrete pad; Sand needs to be put in between protective casing and well casing space inside protective casing; clean out spiders nests; replace cap using a 2-in. PVC locking compression J-plug;	Add	Add	Add	N	N	Y	N	
OW-106B	Grass needs to be cut back with edger to expose edges of concrete pad; clear sediment and grass from well pad; PVC well top should be replaced; replace using a 2-in. PVC locking compression J-plug; resurvey well TOC after removing old cap; sand needed inside protective casing between well casing and protective casing; weep hole drilled	Add	Add	Add	N	N	N	Y	
P-106AR	Sand needed inside protective casing between well casing and protective casing; weep hole drilled; labels	N	Add	Add	N	Add	N	N	
P-106C	No maintenance required.	N	N	N	N	N	N	N	
OW-107BR	Well labels needed on side of well protective casing; sand needed inside protective casing between well casing and protective casing; weep hole drilled.	N	Add	Add	N	Add	N	N	
P-107A	Grass needs to be cut back to expose edges of concrete pad; clear sediment and grass from well pad; clean out spiders nests; needs J-Plug.	Add	N	N	N	N	Y	N	
P-107C	Well labels needed on side of well protective casing; clear out spiders nests.	N	N	N	N	Add	Y	N	
OW-108B	Grass needs to be cut back to expose edges of concrete pad; clear sediment and grass from well pad; protective casing rusted, can be sanded and re-painted; sand needed between protective casing and well casing; weep hole required; clean out spiders nests; PVC well top should be replaced; replace using a 2-in. PVC locking compression J-plug; resurvey well TOC after removing old cap.	Add	Add	Add	Add	Add	Y	Y	
P-108A	Grass needs to be cut back to expose edges of concrete pad; clear sediment and grass from well pad; protective casing rusted, can be sanded and re-painted; sand needed between protective casing and well casing; weep hole required; clean out spiders nests; PVC well top should be replaced; replace using a 2-in. PVC locking compression J-plug; resurvey well TOC after removing old cap.	Add	Add	Add	Add	Add	Y	Y	
P-108C	Grass needs to be cut back to expose edges of concrete pad; clear sediment and grass from well pad; protective casing rusted, can be sanded and re-painted; sand needed between protective casing and well casing; weep hole required; clean out spiders nests; PVC well top should be replaced; replace using a 2-in. PVC locking compression J-plug; resurvey well TOC after removing old cap.	Add	Add	Add	Add	Add	Y	Y	
OW-109B	Grass needs to be cut back to expose edges of concrete pad; clear sediment and grass from well pad; well needs new labels; sand inside between protective casing and well riser; replace PVC well cap with J-plug; resurvey.	Add	Add	Add	N	N	Y	Y	

Table A-1
Black Hawk Co. LF
IDNR/RCRA Recommended Well Maintenance
March 2024

Well	Recommended Well Maintenance	J-Plug	Sand	Weep	Paint	Labels	Nests	Resurvey	Notes
P-109A	Grass needs to be cut back to expose edges of concrete pad; clear sediment and grass from well pad; well needs new labels; sand inside between protective casing and well riser; replace PVC well cap with J-plug; resurvey.	Add	Add	Add	N	Add	N	Y	
P-109C	Grass needs to be cut back to expose edges of concrete pad; clear sediment and grass from well pad; protective casing rusted, can be sanded and re-painted; sand inside between protective casing and well rider; weep hole; labels; replace PVC cap with J-plug; resurvey	Add	Add	Add	Add	Add	N	Y	
OW-110B	Grass needs to be cut back to expose edges of concrete pad; clear sediment and grass from well pad; replace PVC well cap with J-plug; resurvey.	Add	N	N	N	N	Y	Y	
P-110A	Grass needs to be cut back to expose edges of concrete pad; clear sediment and grass from well pad; well needs labels; number zero (1) and letter A are missing replace PVC well cap with J-plug; resurvey.	Add	N	N	N	Add	N	Y	
P-110C	Grass needs to be cut back to expose edges of concrete pad; clear sediment and grass from well pad; clean out spiders nests; replace PVC cap with J-plug; resurvey.	Add	Add	Add	N	N	Y	Y	
OW-111B	Grass needs to be cut back with edger to expose concrete pad and clear sediment from well pad; PVC well top should be replaced; replace using a 2-in. PVC locking compression J-plug; resurvey well TOC after removing old cap; well needs new labels; number one (1) and letter "B" are missing; remove spiders nests.	Add	N	N	N	Add	N	Y	
P-111A	Grass needs to be cut back with edger to expose concrete pad and clear sediment from well pad; PVC well top should be replaced; replace using a 2-in. PVC locking compression J-plug; resurvey well TOC after removing old cap.	Add	N	N	N	N	Y	Y	
P-111C	Grass needs to be cut back with edger to expose concrete pad and clear sediment from well pad; PVC well top should be replaced; replace using a 2-in. PVC Locking compression J-plug; resurvey well TOC after removing old cap; well needs new labels; letter C is missing.	Add	Add	Add	N	Add	N	Y	
OW-113B	Grass needs to be cut back to expose edges of concrete pad; clear sediment and grass from well pad; protective casing rusted, can be sanded and re-painted; sand needed between protective casing and well casing; weep hole required; PVC well top should be replaced; replace using a 2-in. PVC locking compression J-plug; resurvey well TOC after removing old cap; sand needed inside protective casing between well casing and protective casing; weep hole drilled.	Add	Add	Add	N	N	Y	Y	
P-113A	Grass needs to be cut back to expose edges of concrete pad; clear sediment and grass from well pad; protective casing rusted, can be sanded and re-painted; concrete pad is cracked; PVC well top should be replaced; replace using a 2-in. PVC locking compression J-plug; resurvey well TOC after removing old cap; sand needed inside protective casing between well casing and protective casing; weep hole drilled.	Add	Add	Add	N	N	Y	Y	
P-113C	Grass needs to be cut back to expose edges of concrete pad; clear sediment and grass from well pad; protective casing rusted, can be sanded and re-painted; sand needed between protective casing and well casing; weep hole required; PVC well top should be replaced; replace using a 2-in. PVC locking compression J-plug; resurvey well TOC after removing old cap; sand needed inside protective casing between well casing and protective casing; weep hole drilled.	Add	Add	Add	Add	N	N	Y	Concrete pad cracked in half; replace
OW-114B	Grass needs to be cut back with edger to expose edges of concrete pad; clear sediment and grass from well pad; replace well cap using a 2-in PVC locking compression J-plug; resurvey well TOC after removing old cap; sand needed inside protective casing between well casing and protective casing; weep hole drilled.	Add	Add	Add	N	N	Y	Y	
P-114A	Grass needs to be cut back with edger to expose edges of concrete pad; clear sediment and grass from well pad; replace welll cap using a 2-in. PVC locking compression J-plug; resurvey well TOC after removing old cap; sand needed inside protective casing between well casing and protective casing; weep hole drilled.	Add	Add	Add	N	N	Y	Y	
P-114C	Grass needs to be cut back with edger to expose edges of concrete pad; clear sediment and grass from well pad; some rust on bottom of protective casing; replace welll cap using a 2-in. PVC locking compression J-plug; resurvey well TOC after removing old cap; sand needed inside protective casing between well casing and protective casing; weep hole drilled.	Add	Add	Add	Add	Add	N	Y	
OW-115B	Some rust on protective casing; well needs permanent labels.	N	N	N	N	Add	N	N	needs lock
OW-116B	Some rust on protective casing; sand needed inside protective casing between well casing and protective casing; weep hole drilled; well needs permanent labels.	N	Add	Add	N	Add	N	N	
OW-117B	Raise protective casing in order to close well cover; Some rust on protective casing; sand needed inside protective casing between well casing and protective casing; weep hole drilled; well needs permanent labels.	N	Add	Add	N	Add	Y	N	
OW-118B	Well in good condition	N	N	N	N	Add	N	N	
OW-205B	Grass needs to be cut back to expose edges of concrete pad; clear sediment and grass from well pad; well needs new labels; the zero (0) and letter "B" are not legible; needs bollards to protect well	Add	N	N	N	Add	N	Y	need bollards
OW-207B	Grass needs to be cut back to expose edges of concrete pad; clear sediment and grass from well pad; well needs new labels.	N	N	N	N	Add	Y	N	Schedule for well abandonment in 2024; protective casing degraded
P-207A	Grass needs to be cut back to expose edges of concrete pad; clear sediment and grass from well pad; well needs new labels.	N	N	N	N	Add	Y	N	Schedule for well abandonment in 2024; protective casing degraded
OW-208B	Grass needs to be cut back to expose edges of concrete pad; clear sediment and grass from well pad; well needs new labels.	N	N	N	N	Add	Y	N	Schedule for well abandonment in 2024; protective casing degraded
P-208A	Grass needs to be cut back to expose edges of concrete pad; clear sediment and grass from well pad; well protective cover broken and loose; well needs new labels; remove nests.	N	N	N	N	Add	Y	N	Schedule for well abandonment in 2024; protective casing degraded
OW-209B	Grass needs to be cut back to expose edges of concrete pad and clear sediment from well pad; well labels can be added; replace PVC cap with J-plug; resurvey	Add	N	N	N	Add	N	Y	

Table A-1
Black Hawk Co. LF
IDNR/RCRA Recommended Well Maintenance
March 2024

Well	Recommended Well Maintenance	J-Plug	Sand	Weep	Paint	Labels	Nests	Resurvey	Notes
OW-212B	Grass needs to be cut back to expose concrete pad and clear sediment from well pad; protective casing rusted, can be sanded and re-painted; sand needed inside between well casing and protective casing; weep hole needed.	N	Add	Add	Add	Add	N	Y	needs lock
P-212A	Grass needs to be cut back to expose concrete pad and clear sediment from well pad; protective casing rusted, can be sanded and re-painted; PVC well top should be replaced; replace using a 2-in. PVC locking compression J-plug; resurvey well TOC after removing old cap; there is standing water inside the protective casing; sand needs to be put in between well casing and protective casing; weep hole drilled to drain water.	Add	Add	Add	Add	Add	N	Y	
OW-213BR	Well labels needed on side of well protective casing.	N	N	N	N	Add	N	N	
P-213C	Clear sediment and grass from well pad; Add bollards to protect well; protective casing rusted, can be sanded and re-painted; PVC well top should be replaced; replace using a 2-in. PVC locking compression J-plug; resurvey well TOC after removing old cap.	Add	N	N	Add	N	N	Y	Bollards
OW-214BR	Well in good condition	N	N	N	N	N	N	N	
P-214CR	Well in good condition	N	N	N	N	N	N	N	
OW-215BR	Well in good condition	N	N	N	N	N	N	N	
P-215CR	Well in good condition	N	N	N	N	N	N	N	
OW-216BR	Well in good condition	N	N	N	N	N	N	N	
P-216CR	Well in good condition	N	N	N	N	N	N	N	
OW-217B	Well labels needed on side of well protective casing.	N	N	N	N	Add	N	N	
OW-218B	Well labels needed on side of well protective casing.	N	N	N	N	Add	N	N	
OW-219B	Well labels needed on side of well protective casing.	N	N	N	N	Add	N	N	
OW-220B	Permanent labels	N	N	N	N	Add	N	N	
OW-221B	Permanent labels	N	N	N	N	Add	Y	N	
OW-222B	Permanent labels	N	N	N	N	Add	Y	N	
OW-223B	Permanent labels	N	N	N	N	Add	N	N	
OW-224B	New IDNR monitoring well; labels.	N	N	N	N	Add	N	N	
OW-225B	New IDNR monitoring well; labels.	N	N	N	N	Add	N	N	
OW-226B	New IDNR monitoring well; labels.	N	N	N	N	Add	N	N	
OW-227B	New IDNR monitoring well; labels.	N	N	N	N	Add	N	N	
MW-304B	IDNR monitoring well; well needs new labels; sand inside between protective casing and well riser; weep hole.	N	Add	Add	N	Add	N	N	
MW-318BR	IDNR monitoring well; sand inside between protective casing and well riser.	N	Add	Add	N	N	Y	N	
P-318CR	IDNR monitoring well; no maintenance required.	N	N	N	N	Add	N	N	
MW-319B	IDNR monitoring well; sand inside between protective casing and well riser; weep hole; well label for number nine (9).	N	Add	Add	N	Add	N	N	
MW-320B	IDNR monitoring well; no maintenance required.	N	N	N	N	N	N	N	
OW-401B	IDNR monitoring well; sand inside protective casing; weep hole; labels.	N	N	N	N	Add	N	N	replace protective casing
OW-402B	IDNR monitoring well; well needs new labels; sand inside between protective casing and well riser; weep hole.	N	N	N	N	Add	N	N	
P-402A	New IDNR monitoring well; labels.	N	N	N	N	Add	N	N	
P-402C	New IDNR monitoring well; labels; raise protective casing	N	N	N	N	Add	N	N	raise protective casing
OW-407B	IDNR monitoring well; labels.	N	N	N	N	Add	N	N	
OW-408B	IDNR monitoring well; well labels need to be added	N	N	N	N	Add	N	N	Well depth okay
MW-409B	IDNR monitoring well; grass needs to be cut back and debris removed from well pad; needs letter B added to well.	N	N	N	N	Add	N	N	
OW-410B	New IDNR monitoring well; labels.	N	N	N	N	Add	N	N	
OW-411B	New IDNR monitoring well; labels.	N	N	N	N	Add	N	N	
OW-412B	New IDNR monitoring well; labels.	N	N	N	N	Add	N	N	
OW-413B	New IDNR monitoring well; labels.	N	N	N	N	Add	N	N	
OW-414B	New IDNR monitoring well; labels.	N	N	N	N	Add	N	N	
MW-501B	IDNR monitoring well; grass needs to be cut back and debris removed from well pad; sand needed inside protective casing between well casing and protective casing; weep hole drilled.	N	Add	Add	N	N	Y	N	
MW-602B	IDNR monitoring well; new well labels required.	N	N	N	N	Add	N	N	
MW-603B	IDNR monitoring well; new well labels required.	N	N	N	N	Add	N	N	
MW-604B	IDNR monitoring well; new well labels required.	N	N	N	N	Add	N	N	
P-604C	IDNR monitoring well; new well labels required.	N	N	N	N	Add	N	N	
MW-606B	IDNR monitoring well; new well labels required; needs lock	N	N	N	N	Add	N	N	needs lock
MW-701B	IDNR monitoring well; new well labels required.	N	N	N	N	Add	N	N	
MW-702B	IDNR monitoring well; new well labels required.	N	N	N	N	Add	N	N	
MW-703B	IDNR monitoring well; new well labels required;	N	N	N	N	Add	N	N	
P-703C	IDNR monitoring well; new well labels required;	N	N	N	N	Add	N	N	
MW-704B	IDNR monitoring well; new well labels required;	N	N	N	N	Add	N	N	
MW-705B	IDNR monitoring well; new well labels required;	N	N	N	N	Add	N	N	
MW-706B	IDNR monitoring well; new well labels required;	N	N	N	N	Add	N	N	
MW-707B	IDNR monitoring well; new well labels required;	N	N	N	N	Add	N	N	
MW-708B	IDNR monitoring well; new well labels required;	N	N	N	N	Add	N	N	

Table A-1
Black Hawk Co. LF
IDNR/RCRA Recommended Well Maintenance
March 2024

Well	Recommended Well Maintenance	J-Plug	Sand	Weep	Paint	Labels	Nests	Resurvey	Notes
MW-709B	IDNR monitoring well; new well labels required;	N	N	N	N	Add	N	N	
MW-710B	IDNR monitoring well; new well labels required;	N	N	N	N	Add	N	N	
MW-711B	IDNR monitoring well; new well labels required;	N	N	N	N	Add	N	N	
MW-712B	IDNR monitoring well; new well labels required.	N	N	N	N	Add	N	N	

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning

No Photo Area A: MW-320B side view.	No Photo Area A: MW-320B top view.
 Area A: P-114A side view.	 Area A: P-114A top view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Area A: OW-114B side view.



Area A: OW-114B top view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Area A: P-114C side view.



Area A: P-114C top view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Area A: MW-501B side view.



Area A: MW-501B top view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Area C: P-105C side view.



Area C: P-105C top view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Area C: SG-5 and Culvert upstream of 105 Well Nest.



Area C: OW-105B side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning

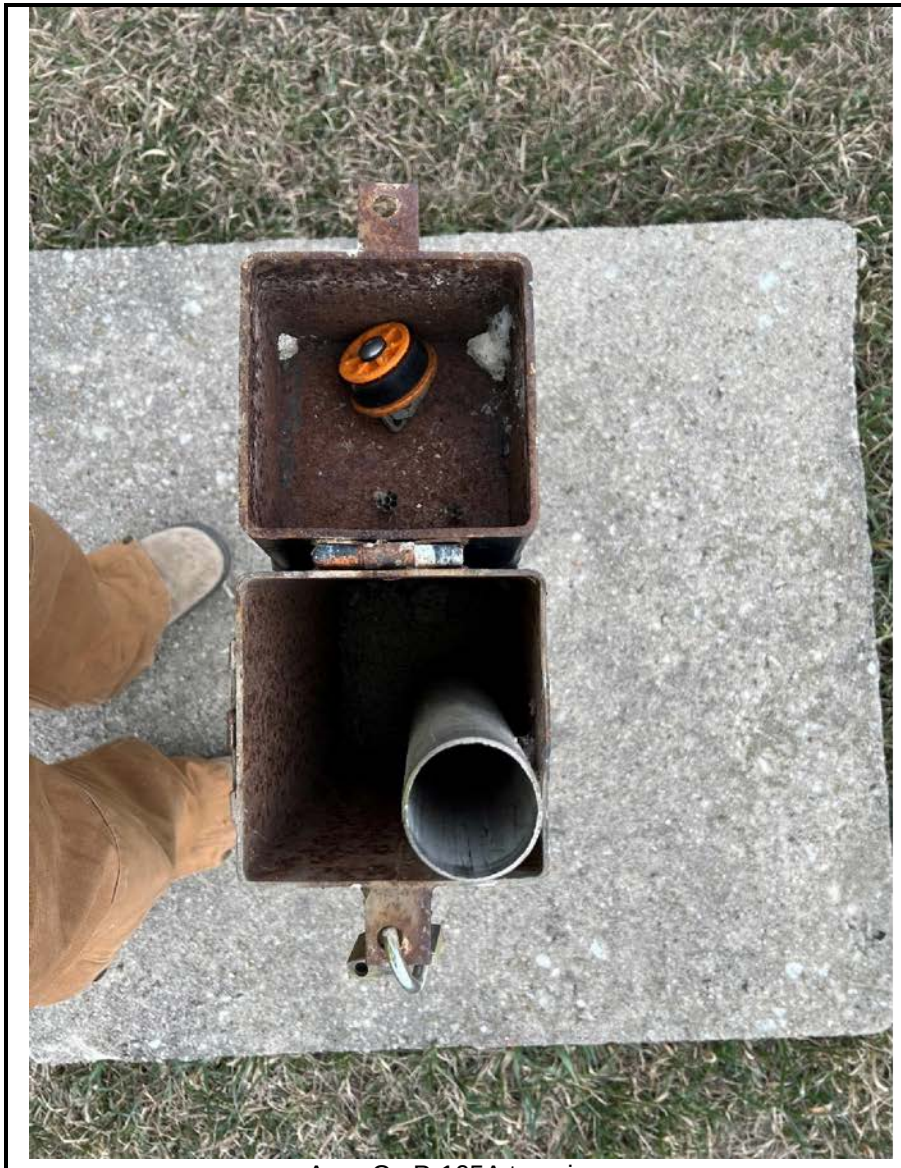


Area C: OW-105B top view.



Area C: P-105A side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Area C: P-105A top view.



Co-Disposal Area: OW-116B side view.



Co-Disposal Area: OW-116B top view.



Co-Disposal Area: P-107C side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Co-Disposal Area: P-107C top view.



Co-Disposal Area: P-107A side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Co-Disposal Area: P-107A top view.



Co-Disposal Area: OW-107BR side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Co-Disposal Area: OW-107BR top view.



Co-Disposal Area: OW-117B side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Co-Disposal Area: OW-117B top view.



Co-Disposal Area: P-106C side view.



Co-Disposal Area: P-106C top view.



Co-Disposal Area: OW-106B side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Co-Disposal Area: OW-106B top view.



Co-Disposal Area: P-106AR side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Co-Disposal Area: P-106AR side view.



Area E: OW-113B side view.



Area E: OW-113B top view.



Area E: P-113A side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Area E: P-113A top view.



Area E: P-113C side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Area E: P-113C top view.



Cell X: OW-221B side view.



Cell X: OW-221B top view.



Cell X: OW-222B side view.



Cell X: OW-222B top view.



Cell X: OW-223B side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Cell X: OW-223B top view.



Co-Disposal Area: P-108C Side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Co-Disposal Area: P-108C top view.



Co-Disposal Area: P-108A Side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Co-Disposal Area: P-108A top view.



Co-Disposal Area: OW-108B Side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Co-Disposal Area: OW-108B top view.



Cell X: OW-209B Side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Cell X: OW-209B top view.



Co-Disposal Area: P-109C Side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Co-Disposal Area: P-109C top view.



Co-Disposal Area: OW-109B side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Co-Disposal Area: OW-109B top view.



Co-Disposal Area: P-109A side view.



Co-Disposal Area: P-109A top view.



Co-Disposal Area: OW-115B side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Co-Disposal Area: OW-115B top view.



Co-Disposal Area: Cap drain discharge north of OW-115B.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Co-Disposal Area: Cap drain discharge north of OW-115B.



Co-Disposal Area: P-110C side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Co-Disposal Area: P-110C top view.



Co-Disposal Area: OW-110B side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Co-Disposal Area: OW-110B top view.



Co-Disposal Area: P-110A side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Co-Disposal Area: P-110A top view.



Co-Disposal Area: P-111C side view.



Co-Disposal Area: P-111C top view.



Co-Disposal Area: P-111A side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Co-Disposal Area: P-111A top view.



Co-Disposal Area: OW-111B side view.



Co-Disposal Area: OW-111B top view.



Cell X: OW-214BR side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Cell X: OW-214BR top view.



Cell X: P-214CR side view.

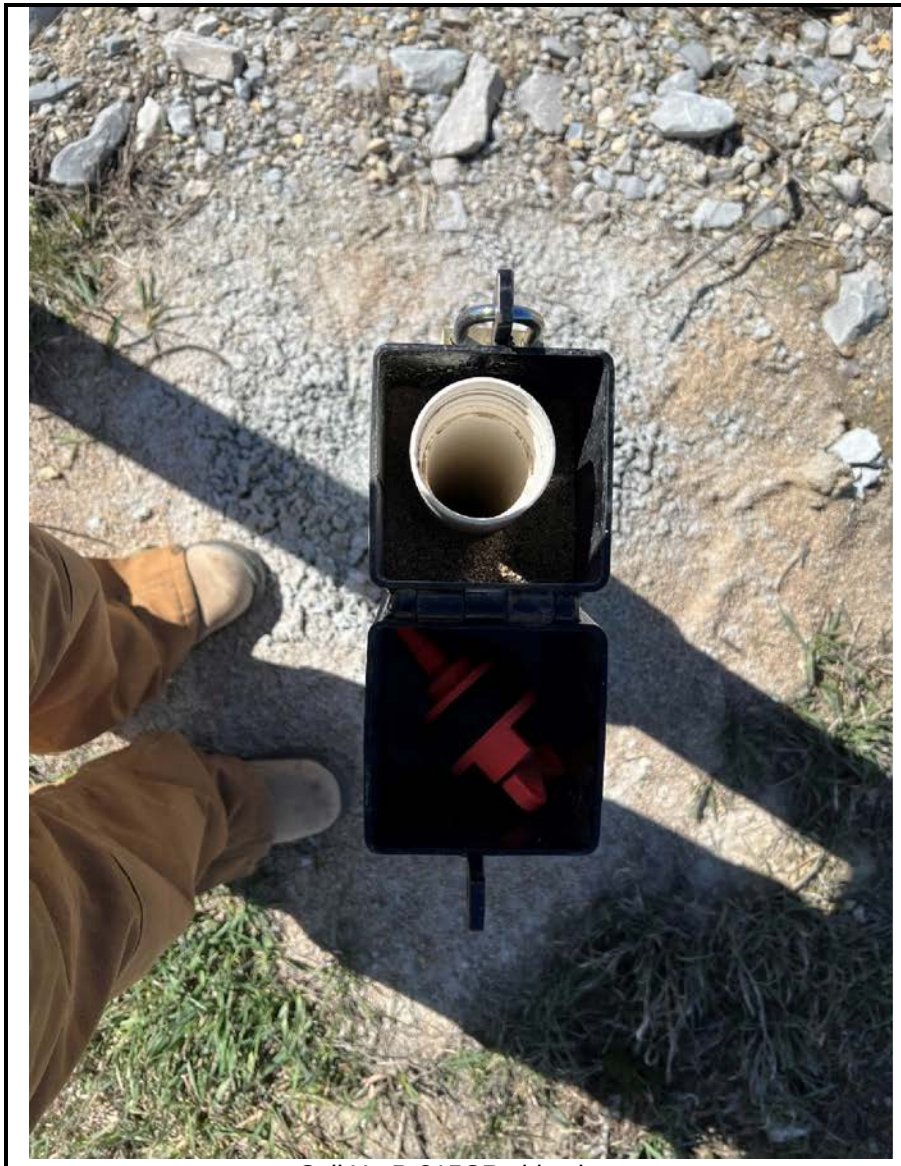


Cell X: P-214CR top view.



Cell X: P-215CR side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning

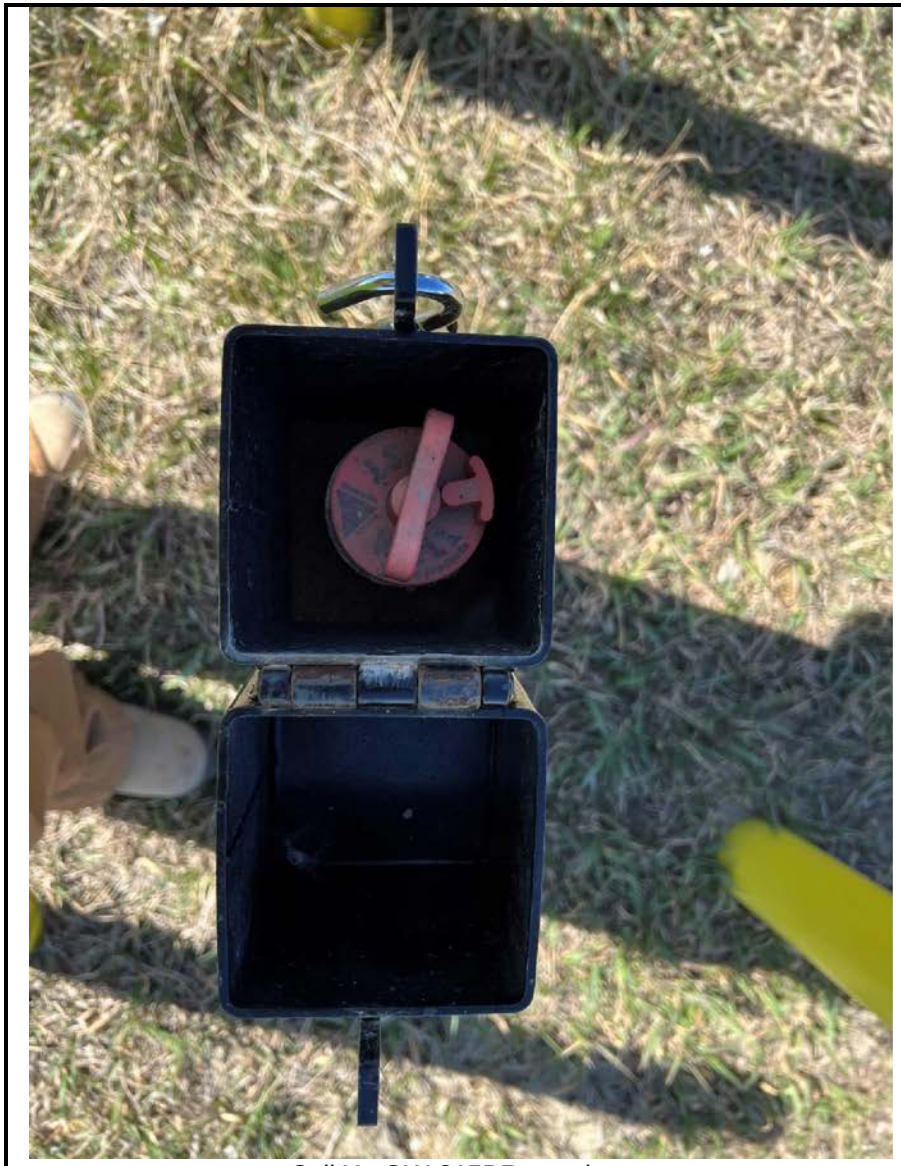


Cell X: P-215CR side view.



Cell X: OW-215BR side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Cell X: OW-215BR top view.



Cell X: OW-216BR side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Cell X: OW-216BR top view.



Cell X: P-216CR side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Cell X: P-216CR top view.



Cell X: OW-217B side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Cell X: OW-217B top view.



Cell X: P-213C side view.



Area E: P-213C top view.



Area E: OW-213BR side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning

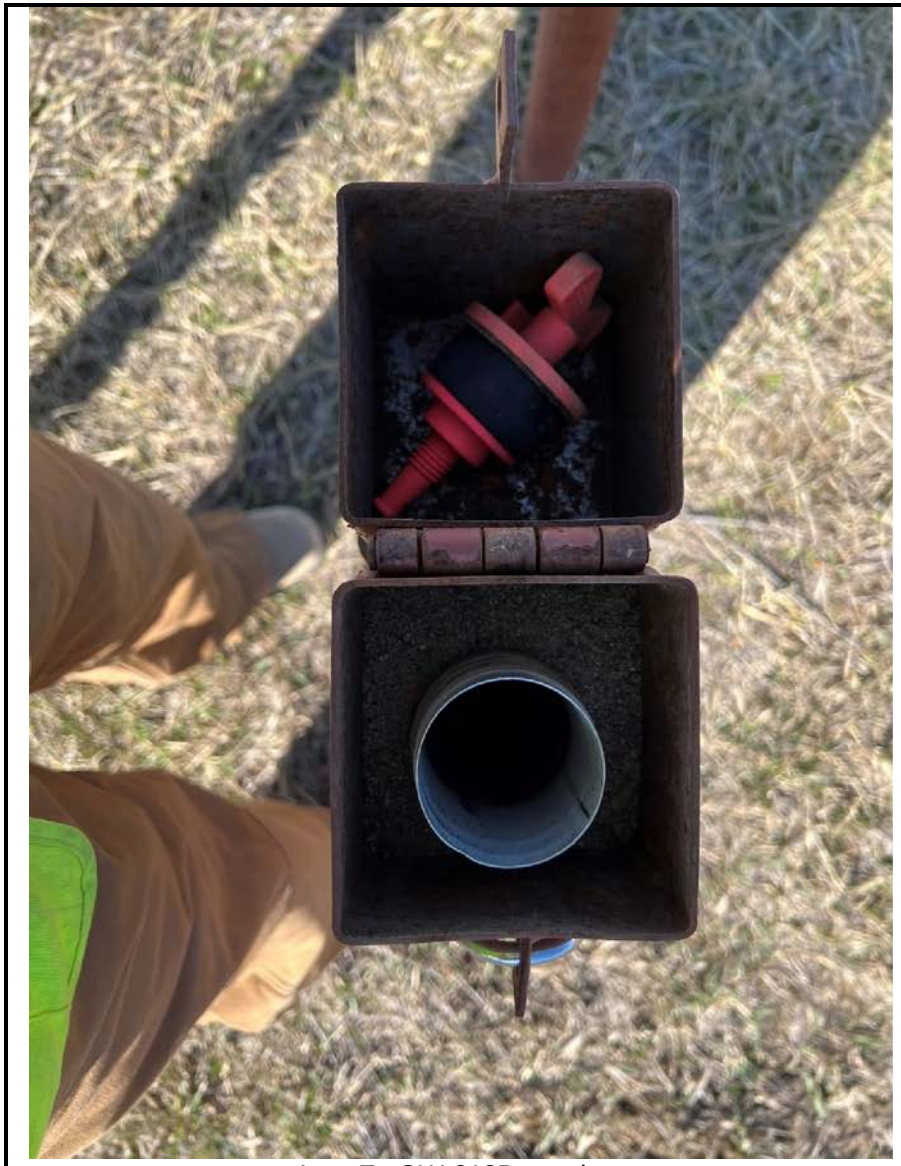


Area E: OW-213BR top view.



Area E: OW-218B side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Area E: OW-218B top view.



Area E: OW-219B side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning

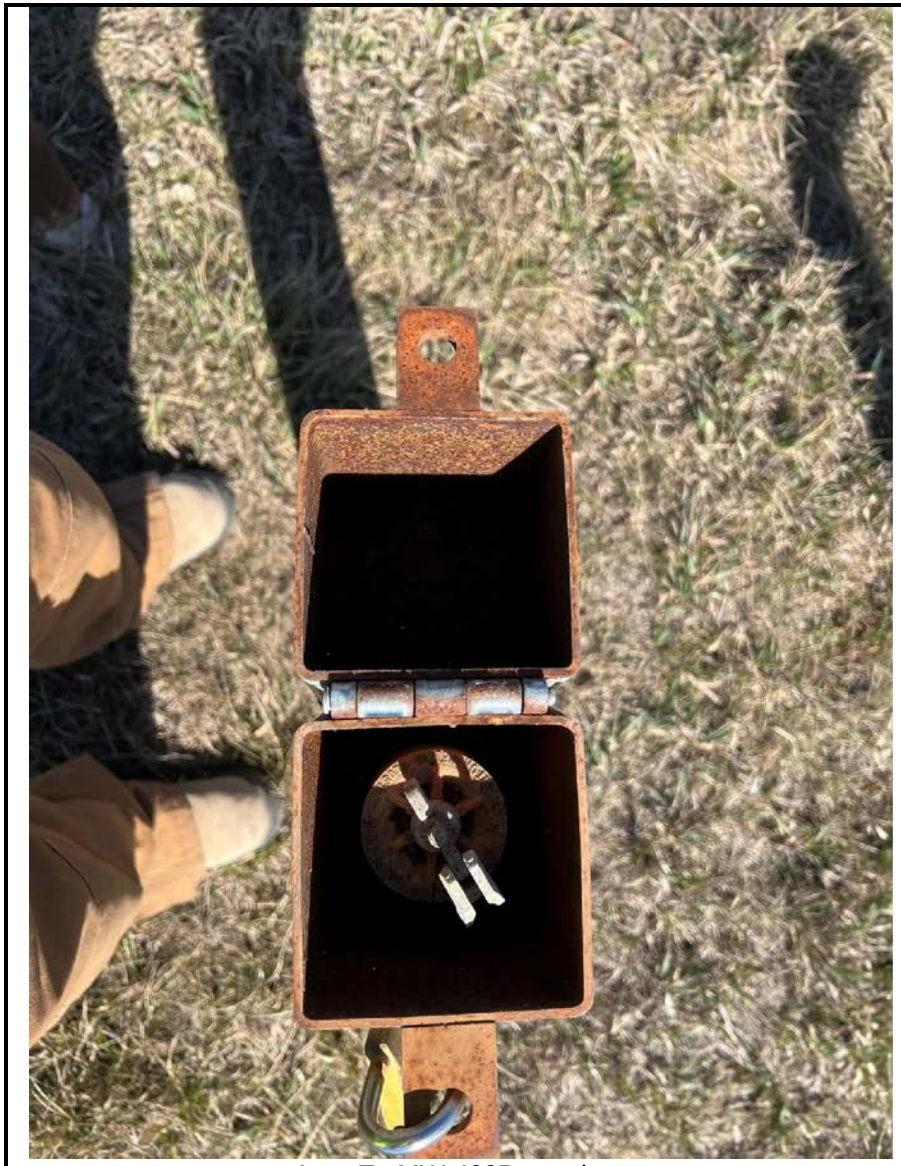


Area E: OW-219B top view.



Area E: MW-409B side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Area E: MW-409B top view.



Neutral Trench: P-103C side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Neutral Trench: P-103C top view.



Neutral Trench: P-103A side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Neutral Trench: P-103A top view.



Neutral Trench: P-102C side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Neutral Trench: P-102C top view.



Neutral Trench: P-102E side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Neutral Trench: P-102E top view.



Neutral Trench: OW-102D side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Neutral Trench: OW-102D top view.



Neutral Trench: OW-101B side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Neutral Trench: OW-101B top view



Neutral Trench: P-102A side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Neutral Trench: P-102A top view.



Neutral Trench: OW-102B side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Neutral Trench: OW-102B top view.



Neutral Trench: OW-103B side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Neutral Trench: OW-103B top view.



Neutral Trench: P-104C side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Neutral Trench: P-104C top view.



Neutral Trench: P-104A side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Neutral Trench: P-104A top view.



Neutral Trench: OW-104B side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Neutral Trench: OW-104B top view.



Area E: OW-212B side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Area E: OW-212B top view.



Area E: P-212A side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Area E: P-212A top view.



Area C: OW-205B side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Area C: OW-205B top view.



Neutral Trench: P-101C side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Neutral Trench: P-101C top view.



Neutral Trench: P-101A side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Neutral Trench: P-101A side view.



Cell W3: MW-711B side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Cell W3: MW-711B top view.



Cell W3: MW-712B side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Cell W3: MW-712B top view.



Cell W3: MW-710B side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Cell W3: MW-710B top view.



Cell W3: MW-709B side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning

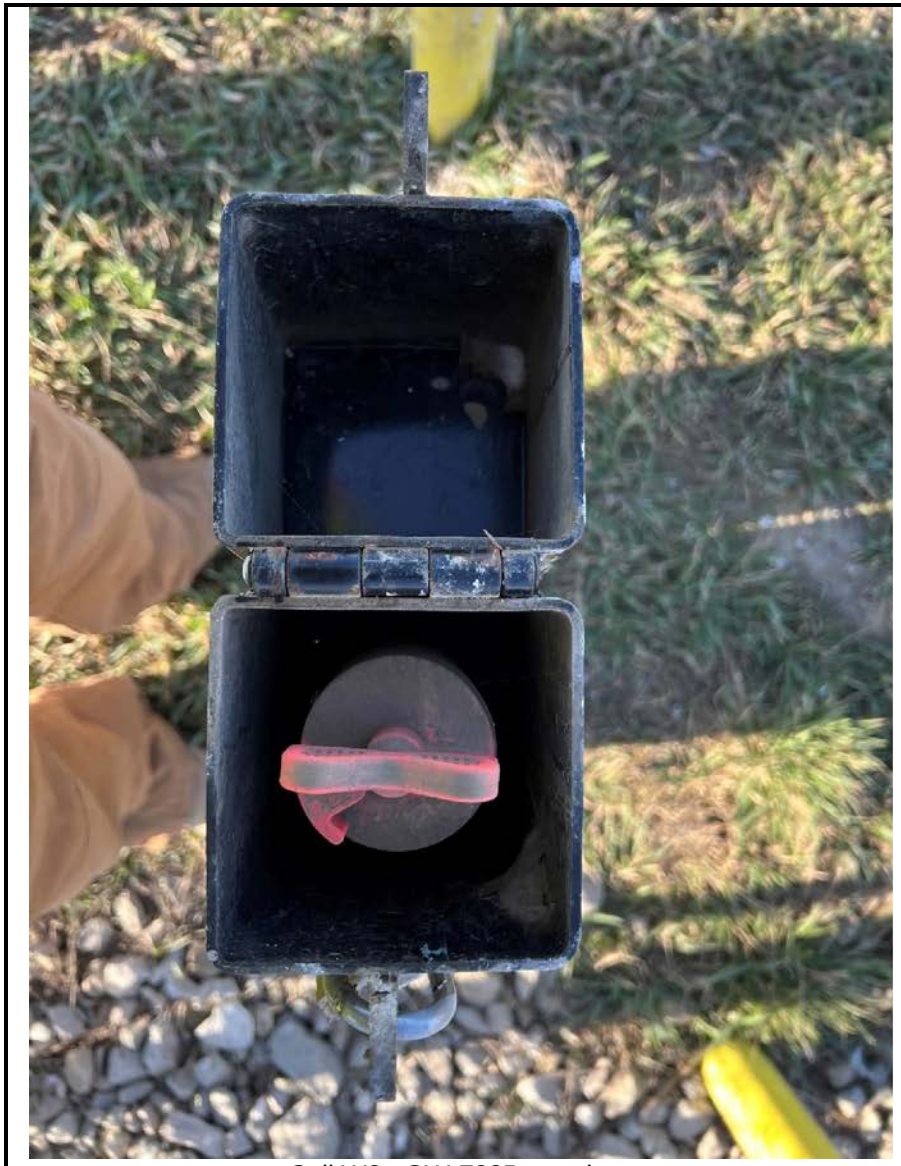


Cell W3: MW-709B top view.



Cell W3: MW-708B side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Cell W3: OW-708B top view.



Cell W3: OW-707B side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning

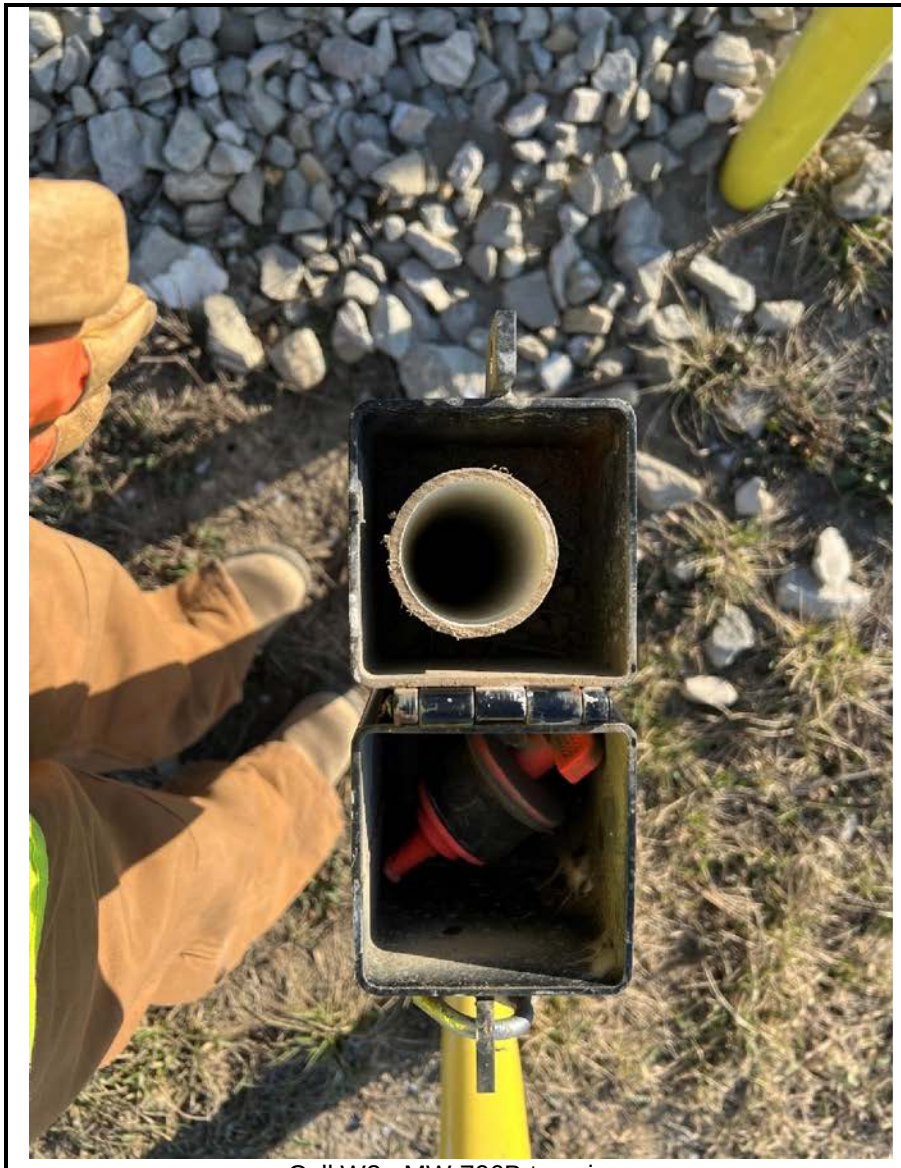


Cell W3: MW-707B top view.



Cell W3: MW-706B side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Cell W3: MW-706B top view.



Cell W4: MW-705B side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Cell W4: MW-705B top view.



Cell W4: MW-704B side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Cell W4: MW-704B top view.



Cell W4: P-703C side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Cell W4: P-703C top view.



Cell W4: MW-703B side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Cell W4: MW-703B top view.



Cell W4: MW304B side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Cell W4: MW-304B top view.



Cell W4: MW-702B side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning

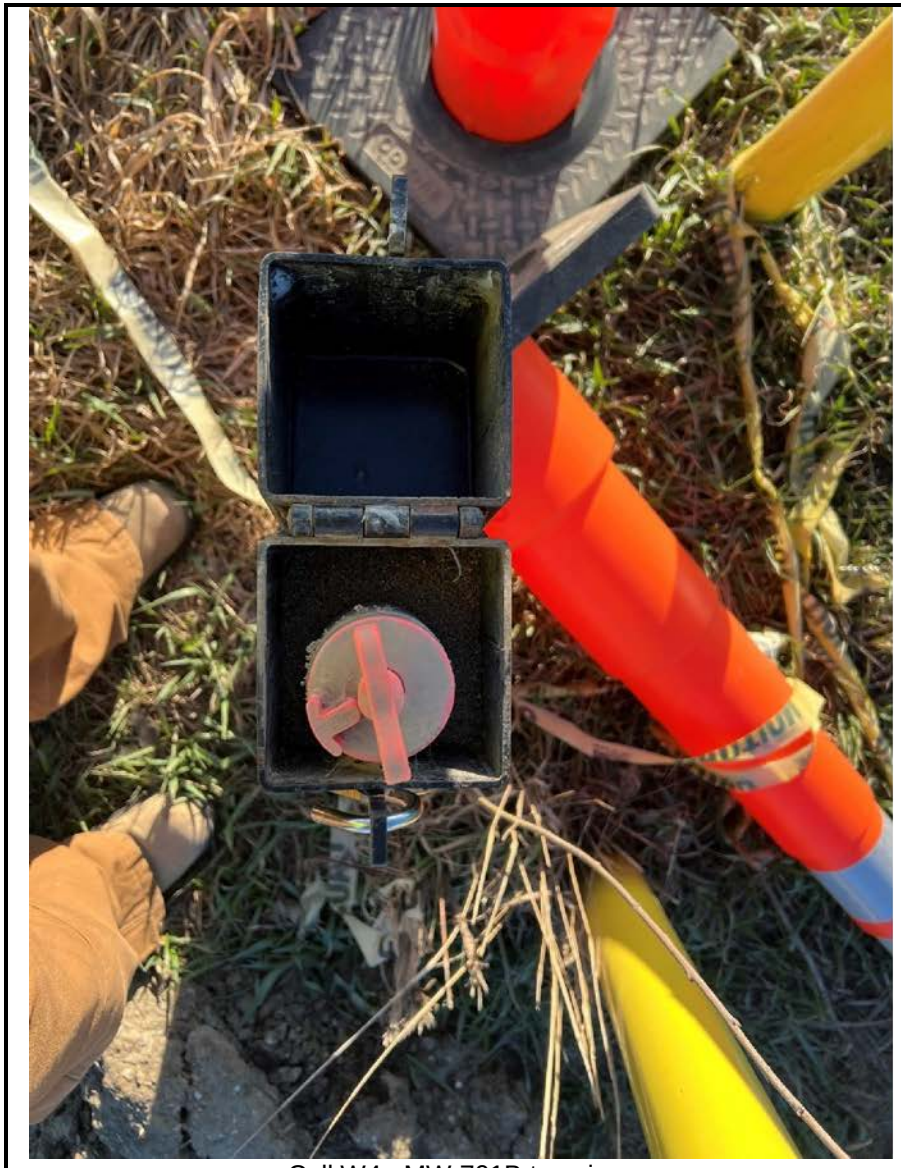


Cell W4: MW-702B top view.



Cell W4: MW-701B side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Cell W4: MW-701B top view.



Cell W2: P-604C top view.



Cell W2: P-604C side view.



Cell W2: MW-604B side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Cell W2: MW-604B top view.



Cell W2: MW-603B side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Cell W2: MW-603B top view.



Cell W2: MW-602B side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Cell W2: MW-602B top view.



Cell W2: MW-606B side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Cell W2: MW-606B top view.



Cell W2: MW-318CR side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Cell W2: MW-318CR top view.



Cell W2: MW-318BR side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Cell W2: MW-318BR top view.



Cell W1: OW-408B side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Cell W1: OW-408B top view.



Cell W1: MW-319B side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Cell W1: MW-319B top view.



Cell W1: OW-407B side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Cell W1: MW-407B top view.



Cell W1/Area A ACM: OW-410B side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Cell W1/Area A ACM: OW-410B top view.



Cell W1/Area A ACM: OW-401B side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Cell W1/Area A ACM: OW-401B top view.



Cell W1/Area A ACM: OW-411B side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Cell W1/Area A ACM: OW-411B top view.



Cell W1/Area A ACM: OW-414B side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Cell W1/Area A ACM: OW-414B top view.



Cell W1/Area C ACM: OW-412B side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Cell W1/Area C ACM: OW-412B top view.



Cell W1/Area C: P-402C side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Cell W1/Area C ACM: P-402C top view.



Cell W1/Area C ACM: P-402A side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Cell W1/Area C ACM: P-402A top view.



Cell W1/Area C ACM: OW-402B side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Cell W1/Area C ACM: OW-402B top view.



Cell W1/Area C ACM: OW-413B side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Cell W1/Area C ACM: OW-413B top view.



Area C: OW-224B side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Area C: OW-224B top view.



Area C: OW-225B side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Area C: OW-225B top view.



Area C: OW-220B side view.



Area C: OW-220B top view.



Area C: OW-226B side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning

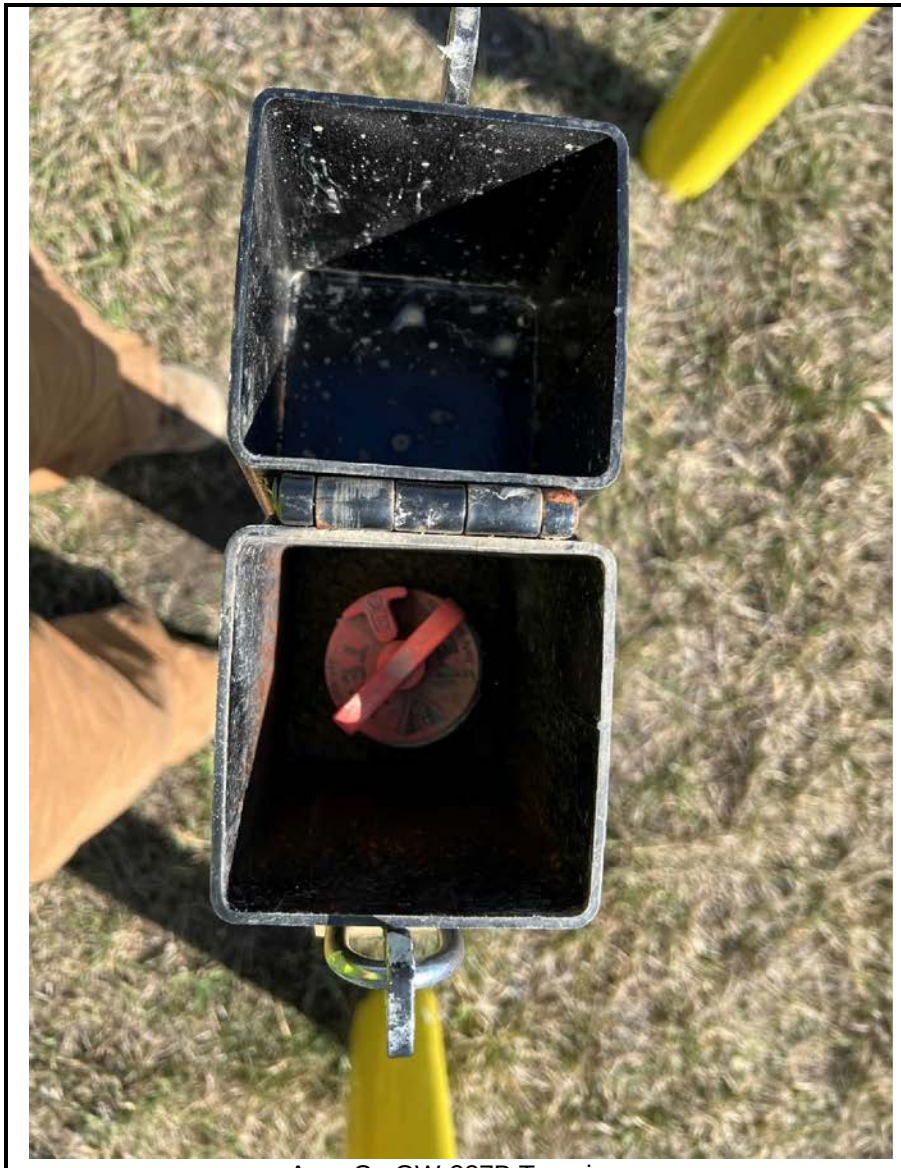


Area C: OW-226B top view.



Area C: OW-227B side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Area C: OW-227B Top view.



Co-Disposal Area: P-207A side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Co-Disposal Area: P-207A top view.



Co-Disposal Area: OW-207B side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Co-Disposal Area: OW-207B top view.



Co-Disposal Area: P-208A side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Co-Disposal Area: P-208A top view.



Co-Disposal Area: OW-208B side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning



Co-Disposal Area: OW-208B top view.



Co-Disposal Area: SG-2 side view.

No Photo
Co-Disposal Area: SG-3 side view.

No Photo
Cell W4: SG-4 side view.

Location: Waterloo, IA Permit No.: # IAD075848085 Camera: iPhone 13 Pro
Date Photos Taken: 3/18/24 – 3/19/24 Photographer: R. Henning Complier: R. Henning

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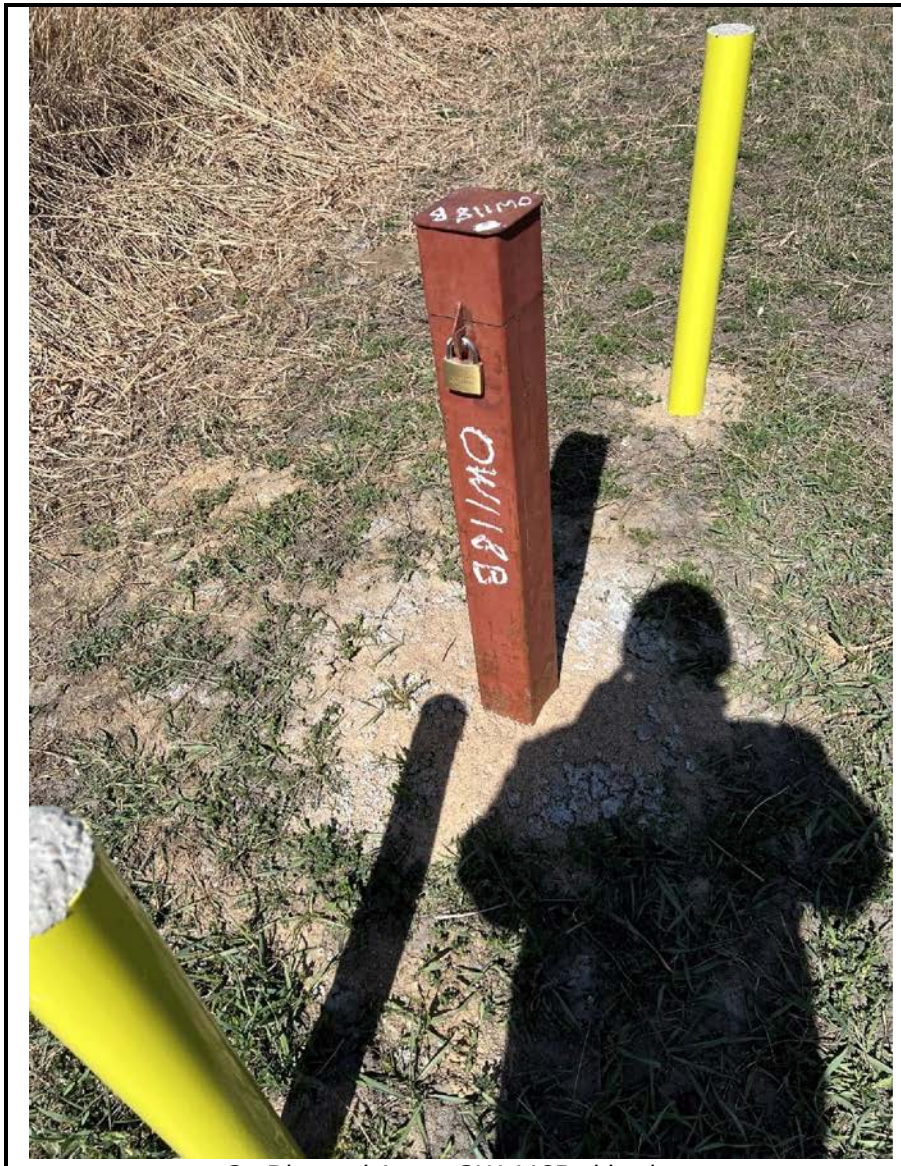
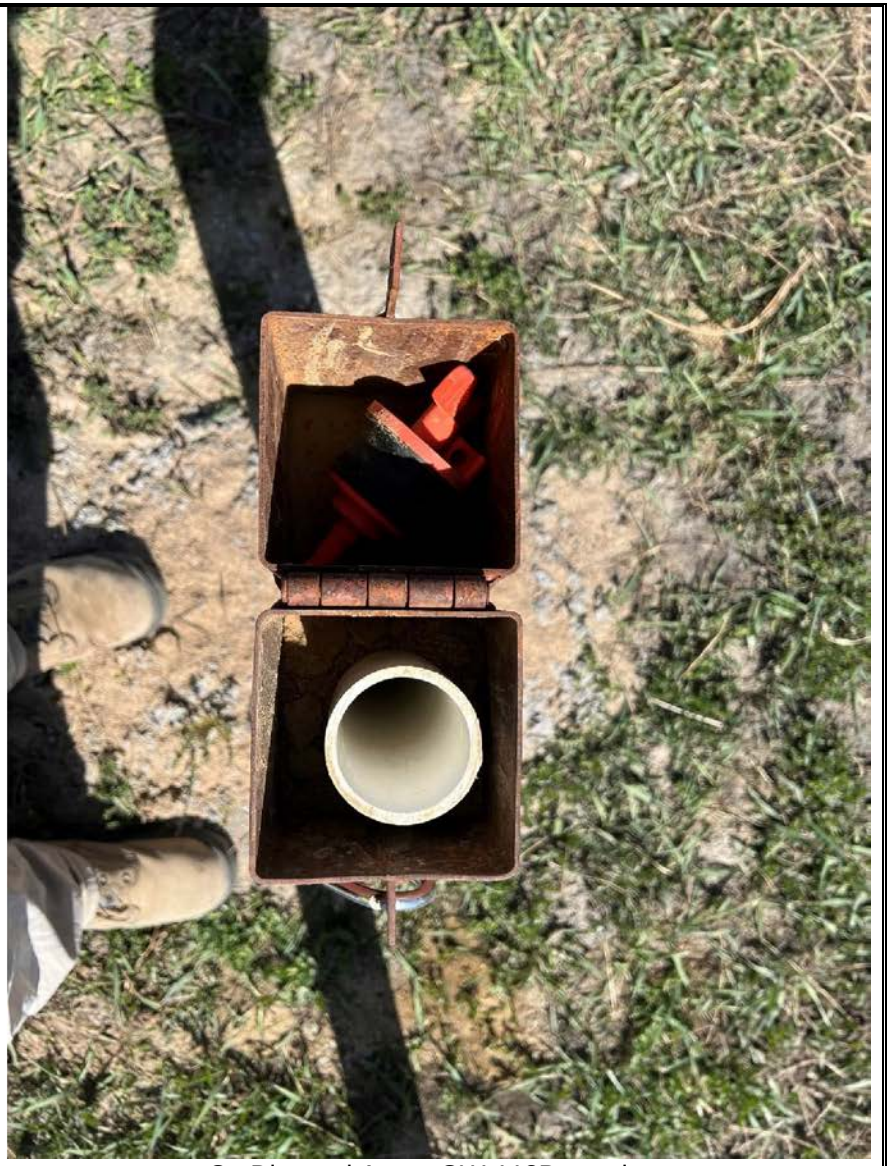
<tr><td> 

Co-Disposal Area: OW-118B side view.</td><td> 
Co-Disposal Area: OW-118B top view.</td></tr>
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Co-Disposal Area: SG-1 side view.</td><td>Blank</td></tr>
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